S T A R

SECTION II

SUBJECT INDEX (N-Z)



VOLUME 6 • NUMBERS 1-24

N68-10001-N68-38500

DOCUMENTS DEPT.

MAR 1 3 1969

Perka sassyel best will

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

PURCHASE OF STAR

The semimonthly issues and the cumulative index issues are available postpaid on subscription and in single copy from the Supertintendent of Documents, United States Government Printing Office, Washington, D.C., 20402, United States of America.

Semimonthly issues . . .

Annual subscription rate: \$54.00, domestic; \$68.25, foreign. Price per single copy: \$2.25, domestic; 25% extra for foreign mailing.

Cumulative index issues . . .

Annual subscription rate: \$30.00, domestic; \$35.00, foreign. Price per single copy varies according to the number of pages.

Domestic subscription rates . . .

Apply to the United States, Canada, Mexico, and all Central and South American countries, except as noted below.

Foreign subscription rates . . .

Apply to Argentina, Brazil, French Guiana, Guyana, Surinam, British Honduras, and all other countries throughout the world.

Payment should be by check, money order, or document coupons, and must accompany order. Remittances from foreign countries should be made by international money order, or draft on an American bank, payable to the Superintendent of Documents, or by UNESCO book coupons.

PUBLISHED BY:

UNITED STATES GOVERNMENT
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
SCIENTIFIC AND TECHNICAL INFORMATION DIVISION

Scientific and Technical Aerospace Reports, Volume 6, is prepared by the NASA Scientific and Technical Information Facility operated for the National Aeronautics and Space Administration by the Technical Information Services Company.

Use of funds for printing this publication approved by the Director of the Bureau of the Budget June 7, 1966.

Scientific and Technical

Aerospace Reports

Annual Indones (Section II) January-December 1988

SPECIAL NOTICE

Starting with this issue of Scientific and Technical Aerospace Reports Annual Indexes, several significant changes have been made, not only in the format of this publication, but also in procedures for requesting the documents indexed. These are explained in the Introduction to Sections I or II; please read it through before referring to the Indexes.

The abstract sections of the semimonthly STAR issues can be bound separately. Individual abstracts can be located readily by means of the page numbers given at each index entry, e.g., 21 p 4190. To assist the user in binding STAR Volume 6, four title pages are included in the back of Section I of the Annual Indexes.

Take the second second

SPECIAL NOTICE

more a five of the control of the co

the second secon

A 150

VOLUME 6 NUMBERS 1-24 Scientific and Technical

Contain Mariner Indian, a Report Resistant Manhor Indian and an Action of Worders would have the Annual Indiana Engineer the semanative and questing a description



Aerospace Reports

Annual Indexes (Section II) January-December 1968

TABLE OF CONTENTS

Page
SECTION I'
Introduction
SECTION II
Subject Index (N-Z) A-789
SECTION III
Personal Author Index
SECTION IV
Corporate Source Index
Contract Number Index
Report/Accession Number Index E-1
Accession/Report Number Index F-1

his many fire particular degree. This is low a the appear and/or can relately include motive

"Snientific and Technical



ABFOSPACE REPORTS

March Commence (Secretary II) January December 1988

TABLE OF CONTENTS

	SECTION II
	SECTION TV
	Corporate Situates Indias
	Contract Number Index
1.0	Report Acception Number inde-

ntroduction

THAT STAR ANNUAL INDEXES ARE

Enga. 2629.13 4 58TA ACTUAL SUIDO Marriagad mentrade virialmenta rigidi. V.6 1968 Index C. 99 Sustrates a case where two

These Annual Indexes are edited consolidations of the indexes to the individual issues of Scientific and Technical Aerospace Reports (STAR) for the calendar year 1968 (Volume 6. Numbers 1 through 24). For the convenience of the user, they are divided into four sections, each bound separately. Sections I and II contain the Subject Index. Section III contains the Personal Author Index. Section IV contains a Corporate Source Index. a Contract Number Index, a Report/Accession Number Index, and an Accession Number/ Report Index. The Annual Indexes supersede the semimonthly and quarterly indexes previously issued during 1968. 2. Other U.S. Covergnment agencies 1 to Initity of the Lors. T

Each entry in these indexes includes a group of identifying numbers in the following form: 06 p 0850 N68-23456. The first two digits (06) identify the issue in which the document was announced. The "p" stands for page number, and the four digits that follow (0850) refer to the page number, in the designated issue, on which the abstract of the document appears. The next group of numbers (N68-23456) is the NASA Accession Number, a unique identification number assigned by NASA to each document that was acquired, indexed, and announced in STAR during the year.

In addition to these identifying numbers, each entry in the Subject Index contains a Notation of Content, a brief description of the contents of the document; each entry in the Personal Author and Corporate Source Indexes contains the exact title of the document.

All documents announced in STAR are evaluble to the public

At the beginning of each index in this cumulation, a typical listing is illustrated with each of its elements identified to assist the reader in using the different types of index Selected NASA documents are formally conted and are available within

HOW TO USE THE SUBJECT INDEX and address and an arranged translation and an arranged translation and arranged translation arranged translation and arranged translation arranged

Subject terms in this cumulative index are arranged alphabetically, and are supplemented with cross-references which are intended to serve as directions that will enable the user to modify, enlarge, or narrow his search in accordance with his specific interests. Two types of cross-references are used; at the figure of agreed contract of the follows are feared

- 1. Use (U) references indicate that the subject term is not "postable", i.e., not a valid term, and that the following term or terms are used instead. For example.
- FIGURE COLUMBIUM PRED O STREET PROSPERITORIES DE CONTROL DE LA CONTROL D
 - U NIOBIUM
- Menoral Lending Library UVLL) for Science and Technology transTSL RALLINIA
- Will at the price supplication the citation december | WORLD ANNULAR FLOW
 - U JET FLOW found of bendumment to the shares its religious Astronouses
- 2. Narrower Term (NT) references indicate that the subject terms following the NT notation represent more specific concepts than the terms used. For example.

toll consumer studeness of the earthur and Caster I

- EMISSION
 - NT ELECTRON EMISSION AND AND A THE HALL OF THE PROPERTY OF THE
 - NT NEUTRON EMISSION
 - NT THERMAL EMISSION

Finally, a searcher should use the notations of content in the Index to narrow further his quest for particular items. This is because subject terms can readily include more than one class of document. For example:

CATHODES

Cesium plasma cathodes as sources of high intensity electron beams. Cathode material testing in electro-

chemical half cells.

illustrates a case where two references on different topics are listed under the same subject term.

AVAILABILITY OF STAR

STAR is available to the public on subscription from the Superintendent of Documents, U. S. Government Printing Office as noted on the inside cover. STAR is also available without charge to the following:

- 1. NASA Offices, Centers, contractors, subcontractors, grantees, and consultants;
- 2. Other U.S. Government agencies and their contractors;
- Libraries in the United States that have arrangements with NASA to maintain collections of NASA documents for public use;
- Other organizations in the United States having a need for NASA documents in work related to the aerospace program; and
- Foreign government or academic organizations that have established appropriate reciprocal arrangements with NASA.

AVAILABILITY OF DOCUMENTS

All documents announced in STAR are available to the public as indicated in the citation.

AVAILABILITY OF NASA DOCUMENTS

NASA documents are identified by an asterisk in the abstracts section and in the report/ accession number and accession/report number indexes. NASA documents that have been microfiched (identified by the # sign in citation) are available on microfiche without charge to an organization eligible to receive STAR.

Selected NASA documents are formally printed and are available without charge in printed form on initial distribution to the organization eligible to receive STAR.

AVAILABILITY OF NON-NASA DOCUMENTS

Non-NASA documents are those documents that do not carry an asterisk in the citation. Department of Defense documents (identified by the "AD" number in the citation and indexes) are available subject to a service charge in hard copy or microfiche from the Clearing-house for Federal Scientific and Technical Information, Springfield, Virginia 22151. Microfiche copy of DOD reports will continue to be available to Defense Documentation Center users at no cost from the Defense Documentation Center, Cameron Station, Alexandria, Virginia 22314.

National Lending Library (NLL) for Science and Technology translations are available from NLL at the price stipulated in the citation. Requests for purchase should be addressed to:

National Lending Library for Science and Technology

Boston Spa, Yorkshire, England.

Dissertations selected from *Dissertation Abstracts* are available in xerographic copy (HC) and on microfilm (MF) for sale from University Microfilms, Inc., Ann Arbor, Michigan, 48106. All requests should cite the author and Order Number as they appear in the citation. Note that the dissertations are provided on microfilm and not microfiche.

MT THERMAL EMINSION

⁽¹⁾ A microfiche is a transparent sheet of film, 105 × 148mm in size, capable of containing up to 72 pages of information reduced to micro images (not to exceed 20:1 reduction).

Other non-NASA documents are publicly available as indicated in the citation. These documents which have been microfiched are available on microfiche without charge only to NASA Offices. Centers, contractors, subcontractors, and consultants.

county its, \$35.00 postpandor susse it

HOW TO OBTAIN MICROFICHE

If you are registered with NASA and eligible to receive reports as described above, send the completed Document Request (Facility Form 492) to:

NASA Scientific and Technical Information Facility
P. O. Box 33
College Park, Maryland 20740

If your are not registered with NASA and wish to receive information concerning registration, request Registration Form-Technical Publications (Facility Form 713) from the NASA Scientific and Technical Information Facility at the address given above.

Others may obtain microfiche copies by purchase from:

Clearinghouse for Federal Scientific and Technical Information
(CFSTI)
Springfield, Virginia 22151

U. S. GOVERNMENT SALES AGENCIES

Publications with a CFSTI availability statement in the citation are sold in hard copy and microfiche copy by:

Clearinghouse for Federal Scientific and Technical Information (CFSTI)

Springfield, Virginia 22151

The following unit price has been established by CFSTI: \$3.00 for hard copy. \$0.65 for microfiche.

Publications with a SOD availability statement in the citation are sold in hard copy by:

Superintendent of Documents, U. S. Government Printing Office (SOD)

Washington, D. C. 20402

NASA documents available from the SOD are also available from CFSTI at the SOD price given in the citation.

NOTE: Documents announced without a specific availability statement may be requested from the issuing activity.

Bibliographic information, e.g., report number, etc., rather than the NASA accession number (i.e., N68-12345), should be provided when requesting a document from other than NASA.

COSATI SUBJECT CATEGORY CODE

In the citation of each NASA-supported document and of some non-NASA documents is a code, e.g., CSCL 25A that indicates the subject category assigned to it from the COSATI Subject Category List (first ed. December, 1964) published by the Committee on Scientific and Technology.

ABSTRACTS OF JOURNAL ARTICLES

By arrangement between NASA and the American Institute of Aeronautics and Astronautics, the AIAA publication International Aerospace Abstracts is issued in coordination with STAR.

Each journal appears on alternate weeks. IAA uses subject categories identical with those in STAR, and publishes similar indexes. IAA's worldwide coverage of books and journals complements STAR's worldwide report coverage. The two publications thus provide comprehensive access to current literature on aerospace science and technology.

Organizations having a NASA contract may obtain *IAA* by writing NASA, Code USS-A, Washington, D. C. 20546. Others should direct inquiries to the American Institute of Aeronautics and Astronautics, 750 Third Avenue, New York, New York 10017.

A-789-3

Annual subscription rates for IAA:

Semimonthly issues: United States and possessions, \$54.00 postpaid; foreign countries, \$68.25 postpaid.

51

Cumulated Index Volumes: United States and possessions, \$30.00 postpaid; foreign countries, \$35.00 postpaid.

are you and as it o depth but ARAM they parecraps we pay if

U.S. GOVERNMENT SALES AGENCIES

Annual autoropriori rates for x4.4:

INDEXING VOCABULARY

The Preliminary Edition of the NASA Thesaurus (December 1967) (NASA SP-7030) is used as the authority for the indexing vocabulary that appears in the subject index. The NASA Thesaurus should be consulted in examining the current indexing vocabulary including associated cross reference structure. Only the subject terms that have been selected to describe the documents abstracted in this issue appear in the subject index. Copies of the NASA Thesaurus may be obtained from the Clearinghouse for Federal Scientific and Technical Information or the U. S. Government Printing Office at \$8.50 for the three-volume set.

COSATERUBLEDE CAYEBORY CORE

ABSTRACTS OF JOURNAL ARTICISE

of absorbing a company was to a section of a property and a section of the sectio

the AIAA publication faternational devices a face to a form and appear of the Sacry grant and arguments on afternation with the control of the sacry grant publication and the control of the sacry grant grant control of the sacry grant grant control of the sacry grant grant grant control of the sacry grant grant

N-N JUNCTIONS

Interface states of germanium-silicon alloyed n-n and p-n junctions from dislocations or impurity contamina-

16 p2745 N68-27788

N-P JUNCTIONS U P-N JUNCTIONS

N-P-N JUNCTIONS

Radiation resistance of n-p-a silicon solar cells and prediction of double-junction cell performance [ESRO-TN-3] 07 p0938 N68-16371

Gallium arsenide n-p-n transistors using different crystal materials and fabrication technologies [NASA-CR-86097] 21 p3667 N68-34068

N-TYPE SEMICONDUCTORS

Complementary thin film transistor circuits using tel-urium for p-type and cadmium selenide for n-type [ECOM-02432-F] 02 p0187 N68-11113

Hall effect mean ents of p and n type silicon and ium single crystals 03 p0405 N68-12223

Large signal alternating current field effect on surfaces of N and P-type indium antimoside [TR-8]

Quantiz antization effects in bulk galvanomagnetic pro-es of N-type indium antimonide 06 p0893 N68-15500

Piezoresistance tensor components for n-type mag-nesium stannide from 50 to 300 deg K [IS-T-198] 08 p1222 N68-17281

Absorption spectra of doped n-type and p-type indi-m arsenide single crystals 08 p1223 N68-17560

Fabrication of metal oxide semiconductor capacitors on both p and n type substrates thermally oxidized in

09 p1316 N68-19290

Relaxation phenomena on n-type indium antimonide urfaces in high voltage pulsed electric fields TR-10] 11 p1769 N68-20772 (TR-10)

luctors 14 p2334 N68-25256 stics of lithium doped p-

n solar cells and n-p solar cells [NASA-TM-X-59749] 14 p2195 N68-25624

Photoconductivity method for measuring effects of radiation induced defects in n-type silicon [NASA-CR-88253] 15 p2541 N68-26632

Velocity saturated germanium semiconductor insta-bility with coupled carrier wave and total current in-

(AE-5) 15 p2543 N68-26748 Optical bleaching, low temperature irradiation, and assealing studies of n-type germanium [AFCRL-68-0214] 15 p2544 N68-26842

Electron decay rate and absorption cross sections for tectron holes and recombination in gamma irradiated

n-type silicon [NASA-CR-82348] 16 p2744 N68-27439

Proton damage to n and p-type silicon crystals as function of proton energy using hall effect [NASA-TM-X-60124] 16 p2744 N68-27639 tivity accelerometer using

Miniature type high sensit semiconductor strain gages [NAL-TR-146]

Cyclotron resonance, magnetohydrodynamic wave propagation and other plasma effects in n-type and p-type semiconductor lead telluride 18 p3148 N68-29575

strical surface properties of cleaved silicon and ritum semiconductor surfaces 20 p3563 N68-32413

rities effect on carrier lifetime in bulk solar cell

[NASA-CR-96272] intervalley scattering effect in elastoconductance of type silicon and germanium

22 p3947 N68-34868

Radiation damage in degenerate and non-degenerate licon irradiated at low temperatures - temperature, sarge state, and Fermi level dependence of irradiation 22 p3949 N68-35167

Thermal conductivity, thermoelectric power, Hall onstant, and carrier mobility of n and p type alloyed allium assemble aemiconductors gallium arsenide ser FTD-HT-67-1981 22 m3952 N68-35928

Defect energy levels a tions for proton irradiated, n-type silicon single crystals [NASA-TN-D-4830] 23 p4155 N68-37051

NACELLES

Lift, drag, and pitching mom fanned nucelle in wind tunnel flo (ARC-R&M-3494) 03 p0299 N68-12756 Free flight measurements of incremental drag on su-ersonic sweptback-wing aircraft due to engine

nacelles (ARC-CP-960) 04 p0439 N68-12970 Low and high speed as aircraft configurations wit above wings tynamic performance of regime nacelles mounted

04 p0443 N68-13444 grated fire and overheat detection system for aircraft engine nacelles IAFAPL-TR-67-1291 07 p0939 N68-16720

Effect of boattail juncture coefficients of isolated afterbacelles [NASA-TM-X-1517] re shape on pressure drag bodies of supersonic engine 09 p1268 N68-19237

Aerodynamic tests of wind nacelles with different edge lo [RAE-TR-67203] el models of engine 16 p2585 N68-27750 s low wing aircraft with

17 p2806 N68-28854

High intensity sound tests of accountic fatigue strength of surbofan engine nacelle modification to reduce function compressor noise propagation [DAC-33770] 20 p3399 N6B-32220

Simulated wing effect on pre-subsonic boattail at angle of att [NASA-TM-X-1662] re drag coefficient of 22 p3801 N68-35672 Wind tunnel tests of airfras F-106B scale model with sim nacelles at Mach 0.56 to 1.46 [NASA-TM-X-1683] me installation effects on ulated underwing engine

24 p4197 N68-37941

U NORMS NAPHTHALENE

Fluorescence spectra of pure maphthalene crysta between 14 and 4.2 deg K [NRC-TT-1269] 07 p1065 N68-1614 07 p1065 N68-16185

arylated organodi [ARL-67-0159] 07 p0958 N68-16718

Relative interaction r²qi_i for quenching of triplet state molecules of oxyge¹, zenon, and nitrogen oxides in naphthelense (TR-0158/3250-20/-3)

09 p1386 N68-18280 orescence spectra of doped hthalene, and phenonthrese crystals of anthracene, no

15 p2537 N68-26258 High pressure study of fluor rapure crystals of naphthal rescence spectra of ul-TR-0158/9250-01/-4)

15 p2417 N68-26565 Chemical analysis technique for determination of olyphenyls and alkylnaphthalenes in working environ-

(EUR-3924.1) 18 p3025 N68-30202 of 2-phenylmaphthalese

20 p3415 N68-32332

slender camphor an ic wind tunnel ablatio 23 p4186 N68-36394

ASA PROGRAMS
NT APOLLO PROJECT
NT GEMPH PROJECT
NT MARINER PROGRAM
NT MERCURY PROJECT
NT ROVER PROJECT
NT ROVER PROJECT
NT SATURN PROJECT
NT SURVEYOR PROJECT

Western Research Apprepart with emphasis on m [NASA-CR-90039] orketing 01 p0154 N68-10072

01 p0155 N68-10775

NASA Thessurus - A through L alphabetical listing of terms for indexing and retrieving aerospace related INASA-SP-7030, V. I]

02 p0292 N68-11307 NASA Thesaurus - M through Z alphabetical listing of terms for indexing and retrieving aerospace related documents [NASA-SP-7030, V. 21

02 p0292 N68-11308 Appendices to NASA Theseurus for indexing scientific and technical information - category term lists interarchical display, permuted index, and postab (NASA-SP-7030, V. 31

02 p0292 N68-11309 Engineering and scientific work on Mariner 4, lariner Venus, Mariner Mars 1969, Voyager, and Sur-(NASA-CR-90544) 02 p0272 N68-11643 on space flight data and NASA special publication sce-related science and t 03 p0414 N68-12136

NASA program of m of extraterrestrial resour [NASA-CR-91290]

Hearings for 1968 NASA app O4 p0599 N68-13117

History of seronautical and space research at Langley Research Center - 1917-1967 [NASA-EP-45] 04 p0441 N68-13148 Biomedical applications team efforts to match iological and medical problems with NASA technolo-NASA-CR-91387) 04 p0455 N68-13207

U.S.S.R. space progra space sciences, and 05 p0736 N68-14242

NASA Manned Space small business firms in or [NASA-CR-63916] 05 p0762 N68-14624 Department of Defense and NASA experiments in apport of Gemini program

05 p0741 N68-14960

Third annual NASA University Conference on Manual Control [NASA-SP-144] 06 µ0779 N68-15901 on of spacecraft rases Analysis and comparison processing techniques for a

NASA program for tran (NASA-CR-92977)

Minutes of confi

07 p1104 N68-17193

Dimenination of m NASA programs to in [NASA-CR-93484] d universities 09 p1453 N68-18667 NASA program on t

NASA-CR-93482] 09 p1453 N68-18732 for technology transfer, interest Profiles (SIP) 09 p1453 N68-18733

NASA university program and development of Standar [NASA-CR-93480] research and deve

Appropriations for NASA ment, facilities construction, a tions for facul year 1969 [REPT.-1181] 09 p1453 N68-19442

10 p1616 N68-19956 10 p15% N68-20379

program grant and 10 p1596 N68-20384

11 p1679 N68-20 on budget requests of NASA of Application 11 p1907 N68-21365

Visc layers Navies [TR-1]

Vec

Three Newto using ! [NAS

App for ort band is [PIBA

Burg lence ([P-407

Nav

(NAS.

ARA

SUD

Na

Deep [NAS

Hyl radar [NAS

Per explo ing ve [NAS

airers [NAI

Syr

NEL

Technology Utilization Division, and Office of Tracking and Data Acquisition Biological aspects of astronautics and space science-eightloomess, physiological offects, oxygen consump-ion, human acclimatization and metabolism, and train-11 p1807 N68-21275 NASA research on sonic boom generation /review/ (DLR-FB-68-24) 16 p2599 N68-27875 NASA educational reference manual suggesting in-corporation of space related subjects into industrial arts courses (RASA-EP-44) 12 p1882 N68-22336 Biological extraterrestrial and biophysical research for Apollo and Gemini programs 16 p2599 N68-27876 12 pi882 N68-22336 Computer processing support for NASA Thesaurus [NASA-CR-95396] 17 p2858 N68-28811 Program and report reviews on launch vehicle upper stages and propulsion of advanced mentry spacecraft [NASA-CR-94397] 12 p1973 N68-22992 Technology utilization transferring tech Space research and related activities in United States, and data exchange and international programs at NASA - bibliography of 1966 publications and con-ference proceedings tion on product deve [NASA-CR-83192] 17 p2990 N68-28964 Statistics on NASA program of disseminating educa-onal monographs and visual briefs to industries and 13 p2151 N68-23770 [NASA-CR-95696] 17 p2990 N68-29027 Committee hearings on appropriations for NASA research and development program, 1969
13 p2175 N68-23886 Experimental program to provide low cost computer earches of NASA information files to university gradu-Congressional hearings on NASA appropriations for [NASA-CR-95724] 17 p2990 N68-29038 13 p2175 N68-23905 Goddard Summer Workshop lectures on computer programming, control centers, antennas, elec-trophysics, biomedical information transfer, at-Research and developms Spacecraft Center in Texas [NASA FACTS 0-9/10-67] operations at Manned mospheric physics, and co [NASA-TM-X-63261] 17 p2865 N68-29123 13 p2049 N68-24163 Space and technology transfer program (NASA-CR-957081 17 p2991 N68-29552 Research and developmen at NASA facility in Alabama (NASA FACTS 0-10/12-67) ent for large launch vehicles History of NASA Goddard Space Flight Center through 1963 [NASA-SP-4301] 18 p3056 N68-30317 13 p2049 N68-24164 ns hearing on NASA Support service contracting by NASA, financial anagement, and contractor versus inhouse costs 18 p3192 N68-30746 13 p2178 N68-24166 Appropriations federal activities [REPT.-1348] ns for NASA programs and other Supplement to NASA bibliography on lubrication, corrosion, and wear [NASA-SP-7020/02/] 19 p3284 N68-31522 IEPT.-1348]
Hearings before U.S. Senseronautical and Space Sciences—— and cumulative indexes for f 14 p2376 N68-24454 Senate Committee on lessoes - nuclear rockets pro-res for fiscal 1969 14 p2376 N68-24540 Personal name and subject indexes for manned space flight, space science and applications, advance-research and technology, and full committee of Hous-Space/Astronautics committee NASA fact sheet on Wallops Station rocket launching site and reasarch facilities [NASA FACTS 0-11/12-67] [HR-15856] 19 p3388 N68-31604 managed by MSFC in atmospherics, optical gineering, assembly and Flight experiments resume uid behavior, materials, 14 p2235 N68-24723 NASA fact sheet on Amer (NASA FACTS 0-2/12-67) es Research Center mics 19 p3366 N68-31800 14 p2235 N68-24784 NASA program outline on research and develop-ent related to biological space exploration 19 p3211 N68-32132 Cumulative index to NASA survey on technology utilization of aerospace research output [NASA-SP-5021/06/] 14 p2377 N68-25221 Soviet and NASA space program comparisons in terms of military and scientific objectives [FTD-MT-24-121-67] 20 p3613 N68-32382 Congressional survey of industrial executive opinion on NASA program, appropriations, and scientific and technological contributions Conference papers on NASA planning and projected equirements for advanced aerospace electronic stems technology 14 p2377 N68-25425 hical sketches of as stronauts, training notes, systems technology (NASA-SP-154) and NASA manned space flight in (NASA-EP-34) 20 p3589 N68-33169 14 p2207 N68-25429 Impact of NASA programs on aviation and aerona Goddard Space Flight Center and university conservative research programs [NASA-TM-X-43228] 15 p2421 N68-25779 [NASA-CR-96810] 21 p3625 N68-34314 Major impacts of manned space missions and related technology on public health, medicine, and biological Lewis Explorer Post program o students in aerospace technical as [NASA-TM-X-52387] m to interest high school and professional fields 15 p2546 N68-25935 [NASA-CR-96811] 21 p3636 N68-34380 Economic impact of NASA research, production, and testing programs on southern communities [NASA-CR-96809] 21 p3797 N68-34387 Conference report on technology utilization impact on economic growth [NASA-CR-94804] 15 p2580 N68-26739 Contributions of NASA sponsored programs dealing with electroforming, Ni-Cd-Zn-Ag batteries, refractory alloys, fuel cells, solar cells, and stress corrosion in nary information on sonic boom research in ment laboratories, serospace industry, and 15 p2388 N68-26852 (NASA-CR-96813) 21 p3797 N68-34388 nary of government research projects on sonic eseration, propagation and minimization Review of research activities in NASA during first 10 15 p2388 N68-26853 NASA-TM-X-61181] 21 p3773 N68-34675 versities research projects on sonic booms and e of research on generation and propagation of Brief description of Marshall Space Flight Center and interview with director [NASA-TT-F-11480] 21 p3798 N68-34733 15 p2388 N68-26855 NASA Technology Utilization Program services available to industry /pamphlet/
[NASA-TM-X-61175] 21 p3798 N68-34800 Summary information on NASA research of steepened flight paths for reduction of aircraft noise [NASA-TM-X-59217] 16 p2589 N68-27695 Famility of NASA literature application to highway safety and transportation engineering [NASA-CR-95223] 16 p2799 N68-27724 NASA university programs in personnel training, eronautics and space research, and laboratories and

research centers [NASA-SP-185]

NASA contributions to gle design and applications [NASA-SP-5050]

Statistical data on edu-iosal briefs disseminated to

technical, engineering, data lities support service contractors to

NASA research program on vertical and sho takeoff and landing arccast, including transport bullcopters, and tacchal fighters [NASA-TM-X-59964] 16 µ2589 N68-2780

16 p2799 N68-27742

16 p2589 N68-27806

22 p3981 N68-35564

s to special-purpose thermocou-

as pa878 N68-35620 educational monographs and sted to universities and industries ion evaluation

SUBJECT INDEX Probable effectiveness of NASA microelectronic re-liability program and data bank services [NASA-CR-97217] 23 p4031 N68-36668 Operation of NASA technology utilization regional [NASA-CR-97193] 23 p4191 N68-36682 Job training, urban studies and socio-economic par-ticipation at University of California [NASA-CR-97374] 23 p4192 N68-37286 rnia 23 p4192 N68-37286 Space Programs Su supporting research and advanced development (NASA-CR-97170) 23 p4042 N68-37397 NATIONAL AIRSPACE UTILIZATION SYSTEM National Airspace System radar tracking backup channel performance [NA-68-39] 21 p3660 N68-34312 NATIONAL SEVERE STORMS PROJECT Military weather warning center sealysis and severe storm forecasting procedures
(TR-200) 02 p0231 N68-11340 NATURAL PREQUENCIES
U RESONANT FREQUENCIES NATURAL SATELLITES NT MOON Hall effect messacrymen NT PHOBOS Effect of satellite lo on decametric radio emission of upiter discussed in terms of co-rotation of magnetospheres with planets [NASA-TM-X-55980] 01 p0133 N68-10123 Perturbation effects of Jupiter moons on passing spacecraft trajectory [NASA-TM-X-63060] 04 p0577 N68-13610 of three fictitious moon [NASA-CR-92536] 06 p0907 N68-15136 Lunar crater and maria origins related to early histo-ry of earth satellite system 15 p2557 N68-25833 NAVIER-STOKES EQUATION Compressible boundary layer stability calculated by time integration of Navier-Stokes equations, and exten-sions of Emmons transition theory to hypersonic flow [D1-82-055] 02 p0196 N68-11086 Asymptotic procedure applied to Navier-Stokes equations in study of uniform shear flows merging at trailing edge of flat plate [DAC-60862] 02 p0199 N68-11373 02 p0199 N68-11373 Analysis of shear and normal strain effects on weak arbulence and surbulent heat transfer using two point orrelation equations obtained from Navier-Stokes and INASA-TN-D-42731 02 p0283 N68-11491 Methods for solution of Navier-Stokes equations for flow of viscous incompressible fluid around body ex-tending indefinitely downstream [ONERA-TP-505] 02 p0202 N68-11890 Mathematical models for calculating supersonic iscous flow around blunt bodies - numerical analyses y Navier-Stokes expansion, and coordinate transfor-[JPRS-44459] 08 0 N68-18139 Navier-Stokes equation for dynamics of viscous fluid transmission lines in closed conduits [NASA-CR-61622] 09 p1328 N68-18778 Nasar-Reviews Numerical solution of time dependent, constant property Navier-Stokes equations for entrance region of audiently accelerated parallel plates

11 p1681 N68-20576 Equations for surbulent fluctual s in second order [AD-666581] 11 p1685 N68-21262 Finite difference method for periodic solutions of Navier-Stokes equations in three dimensions (MRC-T3R-751) 13 p2051 N68-23278 Drag coefficient of slowly moving spheres in near continuum flow [TR-19] 13 p2053 N68-23556 Numerical solution of complete, incompressib-teady state Navier-Stokes equation for two dimer-tional channel with diverging section 13 p2053 N68-23732 Finise difference methods for solution of Navier-tokes equations for steady two dimensional turbulent 13 p2055 N68-24158 Viscous structure of shock wave reflected from disbutic and isothermal walls 15 g2453 N68-26327

Leading edges and approximation to Navier-Stokes equation for hypersonic viscous flow over flat plates [CR-1569-1] 18 p3057 No8-29563

EX

82

86

97

up

12

13

u

0

Laminar flow distribution for incompressible fluid between rotating disks studied for varying fluid inlet conditions 18 p3057 N68-29572

vaccous hypersonic flow layers of axaymmetric blunt Navier-Stokes equation [TR-178] 18 p2993 N68-29749 Vector potential used for solving Navier-Stokes seations for incompressible flow in three dimensions 18 p3059 N68-29783

tion on surface parallel to rotating

18 p3062 N68-30108 dimensional steady radial expansion of viscous an gas from sonic nozzle into vacuum analyzed vier. Stokes anusion Three din using Navier-Stokes [NASA-CR-95883] 18 p3063 N68-30258

Approximate solution to Navier elasticity equations or orthotropic cylinder under hydrostatic pressure and PIBAL-68-11] 19 p3377 N68-31397

Burger equation applied to understanding of turba-nce and evaluation of Navier-Stokes equations P-402] 19 p3266 N68-31812

Navier-Stokes equation for calculating hypersonic viscous gas flow around sphere near stagnation point [NASA-TT-F-11642] 19 p3266 N68-31947 Assumptions for use of Navier-Stokes equation for kinetic theory of turbulence in incompressible fluids [PIBAL-68-5] 20 p3460 N68-32516

Solution to Navier-Stokes equation for fully developed axisymmetric laminar flow nar flow 21 p3681 N68-34028

Navier-Stokes equation for computing supersonic low density gas flow around blunt bodies 21 p3681 N68-34110

Navier-Stokes calculation for solut ons to boundary [ARA-NT-2/68] 21 p3683 N68-34776

Differential method of solving two dimensional Navier-Stokes equations for viscous compressible gas flows 22 p3860 N68-35360

Rheological behavior of ellipsoid particles suspended in incompressible Newtonian fluids 23 p4043 N68-36062

Semi-analytical method of series truncation for determination of flow field about circular cylinder at moderate Reynolds numbers [SUDAAR-349] 23 p4045 N68-36160

ISUDAAR-349]

SUDAAR-349]

23 p4045 N68-3

NAVIGATION
NT AIR NAVIGATION
NT ALL-WEATHER AIR NAVIGATION SYSTEM
NT ASTROGUIDE NAVIGATION SYSTEM
NT ASTROGAWICH AN AVIGATION
NT DIGITAL NAVIGATION
NT DIGITAL NAVIGATION
NT DIGITAL NAVIGATION
NT GIMBALLESS INERTIAL NAVIGATION
NT HYPERBOLIC NAVIGATION
NT INTERPLANETARY NAVIGATION
NT INTERPLANETARY NAVIGATION
NT LORAN
NT LORAN
TO MEGA NAVIGATION SYSTEM
NT RADOR NAVIGATION
NT RADOR NAVIGATION
NT SPACE NAVIGATION
NT SPACE NAVIGATION
NT TACAN
NT VIFFOMNIRANGE NAVIGATION
NT TACAN
NT VIFFOMNIRANGE NAVIGATION
NAVIGATION
NT TACAN
NT VIFFOMNIRANGE NAVIGATION
NAVIGATION
NT TACAN
NT VIFFOMNIRANGE NAVIGATION
NAVIGATION
NAVIGATION
NAVIGATION
NT TACAN
NT VIFFOMNIRANGE NAVIGATION
NAVIGATION
NAVIGATION
NAVIGATION
NAVIGATION
NOT TACAN
NT VIFFOMNIRANGE NAVIGATION
NAVIGATION
NAVIGATION
NAVIGATION
NAVIGATION
NAVIGATION
NOT TACAN
NOT VIFFOMNIRANGE NAVIGATION
NAVIGATION
NAVIGATION
NAVIGATION
NAVIGATION
NAVIGATION
NAVIGATION
NOT TACAN
NOT VIFFOMNIRANGE NAVIGATION
NAVIGATION
NAVIGATION
NAVIGATION
NAVIGATION
NAVIGATION
NAVIGATION
NOT TACAN
NOT VIFFOMNIRANGE NAVIGATION
NAVIGATIO

Navigation technology, o antenna engineering, and gr Deep Space Network /DSN/ [NASA-CR-91814] 05 p0631 N68-14792 ing Doppler and inertial craft applications 07 p1022 N68-16747 Hybrid navigation systemater sensors for supers [NASA-CR-92985]

Performance data util spioration phase, and s in mission phase, lunar tional phase of lunar rov-

NASA-CR-934731 09 p1429 N68-19456 Null interference rej aircraft-satellite link [NASA-CR-86061] for navigation system in

17 p2911 N68-28570 nals and frequency stan-18 p3112 N68-29716

Supersonic transport na tegrated avionics system [NASA-TM-X-61039] reigation, guidance, and in-19 p3306 N68-31413

Navigation and traffic co through use of satellite obser [NASA-TT-F-11750] rol of ships and aircraft 19 p3306 N68-31502

NAVIGATION AIDS

NT BEACONS

NT COMPASSES

NT GYROCOMPASSES

NT OMNIDIRECTIONAL RADIO RANGES

NT RADAR BEACONS

NT RADIO BEACONS

NT RADIO DIRECTION FINDERS

System design concepts for spaceborne navigational aids for surface and air traffic control [P-323] 02 p0235 N68-11341

TWING MAKE WATER

Weather forecasting reference file for providing guidelines for Paine Field forecasts [AD-661282] 03 p0363 N68-12213 ce file for providing

Signal evaluation airborne laboratory flight inspec-tion system control, display and recording console [SRDS-RD-67-22] 04 p0533 N66-12948

Computer-servoed navigation chart as design ele-ment in integrated avionics system

05 p0687 N68-14825 User requirements, design criteria, and production factors for developing navigation charts
05 p0688 N68-14826

Graphic arts imadequacies in supporting visual avigational cockpit display requirements 05 p0654 N68-14831

Contact analog navigation di of improving pilot performance play systems, and ways

05 p0688 N68-14832 Topographical navigation display systems develop-ent in Great Britain

05 p0688 N68-14834 05 p0688 N68-14835

Requirements and restraints map navigation displays in milit analyses on positioning ary alternit cockpits 05 p0689 N68-14838

mproving mapping data displays for very low al-de flight navigation 05 p0689 N68-14839

Developing and validating flight crew requirements reaeronautical charts and navigation displays 05 p0690 N68-14847

Engineering model airline type precision VOR receiver system for testing multilobe precision VHF commirange navigation systems (RD-67-33) 06 p0800 N68-15813

Two and three color, low cost, visual approach alope indicators for glide path determination [NA-67-13] 07 p1021 N68-16437 Digital computer driven integrated display devices as avigation aids on modern aircraft

12 p1873 N68-22305

Map for showing effective electrical conductivity of earth at very low frequency to aid in radio propagation and navigation studies [REPT-80133F-1] 18 p3070 N68-30709 Analysis of map symboliz isplay language ution as information system 19 p3269 N68-31306

International legal problems in marine envir [PB-177724] 19 p3389 N68-31738

Inertial Navigation System for commercial air trans-20 p3526 N68-32623

Telescope objective lens size, aperture size, and mag-fication effects on operator performance using marine sextants (NASA-TN-D-4781) 20 p3527 N68-33006

NAVIGATION INSTRUMENTS NT BEACONS NT COMPASSES NT GYROCOMPASSES

333

GYROCOMPASSES
OMNIDIRECTIONAL RADIO RANGES
RADAR BEACONS
RADIO BEACONS
RADIO DIRECTION FINDERS

al guidance systems Radio/optical/strapdown inertial guidance systems for unmanned interplanetary flight [NASA-CR-86011] 03 p0367 N68-12345

Conceptual development based on processed plan p beam raster scan techniques [NASA-CR-73185] nt of long wave radar display position indicator and cross 07 p1023 N68-17008

Comprehensive nummary of space navigation problems and instruments for interplanery flight [NASA FACTS-NF-37] 09 p1372 N68-19046

Analytical method for determination of window in-uced navigation instrument errors in Germini INASA-TM-X-610751 13 p2103 N68-23318

Factors affecting stability, service life, effective signal, and interferences in tuning fork gyrotron IREPT.-741

14 p2286 N63-26636 AN/AYN-1 true airspeed data converter preproduc-(REPT.-1057-011) 24 p4291 N68-38065

NAVIGATION SATELLITES

NT EXPLORER 22 SATELLITE

NT TRANSIT IB SATELLITE

NT TRANSIT SATELLITES

on for ocean go TN-2001 06 p0871 N68-15665 fixing based on Navy

navigation satellite syste INASA-CR-929841 07 p1022 N68-16748 Phase difference and marine navigation [NASA-CR-86028] estellite system for sir le control 07 p1087 N68-17172

Geodetic study prop French satellites [NASA-TT-F-11451] d navigation system for 08 p1199 N68-17612

ated for use by air-Satellite navigation sys-es and maritime service 10 p1553 N68-20033

Satellites for independent aircraft positions and undelay munication [REPT.-67-C-316] surveillance of ship and ed voice and digital com-

14 p2220 N68-24501 or navigation system in

aircraft-satellite link [NASA-CR-86061] 17 p2911 N68-28570 Systems analyses of round station networks f satellite constellation and for navigation and traffic con-tracking accuracy and error

INASA-CR-860501 19 p3306 N68-31278 lity and distributed station satellite operational mode Central computing for inavigation

NELC-15481 20 p3526 N68-32732 French proposed twin or North Atlantic air navigus [NASA-TT-F-11502] e Caster and Pollux for

20 p3527 N68-33014 Purpose, technique, an ioscures twin satellite proj financing of French for North Atlantic air (NASA-TT-F-11933) 20 p3527 N68-33015

twin satellites to aid in we North Atlantic 20 p3527 N68-33029 Justification for Dioscur tactical control of aircraft a [NASA-TT-F-11934]

lites for air traf-20 p3528 N68-33188

Orbit selection for global navigation satellite systems in specified latitude and longitude bands.

[JPRS-46281] 20 p3529 N68-33305

Air traffic control sate (ELDO-BIB-8) 23 p4177 N68-37056

Orbital parameters and equipment considerations for saritime navigation by Doppler method and satellite system [FTD-MT-24-247-67] 24 p4227 N68-38034

NAVIGATORS ing hand held sextant to ag flashing light and simu-

Navigator performs measure angle between lated star - space navig [NASA-TN-D-4174] 04 p0535 N68-13558

Accomplishments and future prospects for U.S. Navy oceanographic research programs [AD-657389] 02 p0209 N68-11901

[FTD-MT-45-80] 08 p1155 N68-17576

[AD-667719] cs for navy equipment 14 p2229 N68-24466 Navy weather sen-radar refractivity [NAVAIR-50-1P-1] g of stre

22 p3835 N68-35439 Naval capabilities and developments in deep ocean technology, surveying, and underwater engineering [AD-663974] 24 p4249 N68-37692

C-130 AIRCRAFT

NEAR INFRARED RADIATION
Polarimetric, photometric, and spectrophotometric
measurements of Mars, and visible and mar infrared
studies of Marsian surface composition
[NASA-CR-90495] 02 p0266 N68-11594 02 p0266 N68-11594 as evaluated for use se Alkali metal vapor arc lamps ev visible and near infrared light source (ERDL-1632-F) 02 02 p0190 N68-11801

pion cham (BNI Fin bomb (JIN) NEOPS degre (OR) (OR) NEOPS NEPAL NEPIL Tir from top equiv [NA NEPT Piter Uran [NA NEPTY Ci iciur selut [OR Ri cool men (BN Su cast trom in ur (NL vale [AN

SUBJ

X

X

CH

M

C

C mea foils (KR

V UJ

A

NEAR ULTRAVIOLET RADIATION Temperature effect on near infrared absorptivities for water, acetone, and piperazine in two sompolar solvents 18 p3019 N68-29769 metry of late type stars 18 p3162 N68-29810 Near infrared pho [AFCRL-68-0042] Near infrared spectral reflectance and scattering in [NASA-TM-X-61036] 19 p3270 N68-31390 Near infrared reflectivity of ice clouds computed and compared to observations of Venus [NASA-TM-X-61295] 23 p4172 N68-37202 NEAR ULTRAVIOLET RADIATION Spectral response of cuprous sulfide-cadmium sulfide film photovoltaic cell to green light [NASA-TN-D-4333] 05 p0607 N68-14082 on camera tube with near 19 p3253 N68-31539 NT CASSIOPEIA A NT CRAB NEBULA NT PLANETARY NEBULAE Velocity curve derived for NGC 4449 galaxy 05 p0759 N68-14916 Energy distribution measurem jects located in H2 and gaseous se [NASA-CR-92724] ments on infrared ob-nebulae regions 07 p1078 N68-16304 Photometric analysis of scattering particles of reflec-tion nebulae 12 p1967 N68-22355 Atomic spectral scheme for calculating recombina-tion spectra of stars and nebulae 16 p2756 N68-27257 Galactic distribution of neutral hydrogen gas corre-ed with Goulds Belt of Bright Stars 16 p2757 N68-27320 Value for emergent light flux from homogeneous spherical dust sebula with star in center (RTS-4380) 20 p3584 N68-32310 ur in center 20 p3584 N68-32310 20 p3593 N68-33457 Music Carlo method applied to solution of transfer of Lyman-alpha radiation in diffuse nebulae 20 p3583 N68-33477

21 p3768 N68-34215

ns in Orion nebula indicated by model sutral gas surrounded by ionized gas 21 p3769 N66-34225

se sequence for analyzing mization cross sections 24 p4341 N68-37655

MEGATIVE CONDUCTANCE

nalysis on negative plasma confinement of helical multipolar fields on toroidal (1992-61) 07 p1064 N68-17097

NEGATIVE PEEDBACK

Calculation methods for delay line networks with agenerative circuits 18 p3053 N68-30460

tion is excited belian occur for [NASA-CR-1173] 22 p3886 N68-35099 NEGATIVE RESISTANCE CIRCUITS

suformation of negative driving point impedance to into electric circuits with negative branch ele-(AFCRL-67-0430) 04 p0488 N66-13013 Theory of negat

(USL-964) 10 p1505 N68-19860 NEGATIVE RESISTANCE DEVICES

13 p2043 N66-23485 Gum affect in uni axis presence of electric field RRE-TRANS-1761 ned germanium in

15 p2543 N68-26709 negative resistances of ol on dielectric films 23 p4158 M68-37307

MUDITAGOR

Noodymium laser radar /lidar/ observation of dus d stress clauds from pro-gendois 1 chemical explo E-11101 01 p0058 N68-10661

High temperature volat thorium carbide particles [JUL-502-RG-RW] 01 p0095 N68-10869 Contribution to optical model study by measuring reaction cross sections [CEA-R-3091] 03 p0396 N68-12639 Luminescence effect on generation capacity of solid state lasers, and thermal deformation of laser resonator

[FTD-HT-67-59] 04 p0518 N68-13426 ence effect on generation capaci-04 p0518 N68-13427

Optical pumping of zenon flash lamps, performance prediction for pumped continuous wave laser, and potamium-mercury lamp for pumping neodymium yi-trium-alumium garnet laser [ECOM-02097-5] 05 p0671 N68-14774 05 p0671 N68-14774 Isomeric state and decay scheme for neodymium 136

LIENR-P6-34681 07 p1050 N68-16820 Mass spectrometry neodymium determinations in irradiated uranium and plutonium as measure of burnup [GEAP-5354] 07 p0960 N68-17076

Potentiometric method of determing atoichiometric step formation constants of neodynium and thulium 2-hydroxyinobutyrate complexes at 25 deg C and at ionic strengths of 0.50 to 0.70
[IS-7-208]

Photoactivation analysis of cerium, neodymium, marium and gadelinium to determine radioactive decay schemes [AFCRL-67-0595] 09 p1405 N68-18261

Neutron resona [JINR-P3-3564] mnim inotopes 09 p1389 N68-18708

Collective states in neody otopes populated through Co xygen ions ranging from 42 to 09 p1395 N68-19181

Factors affecting fl garnet crystals studied [SRRC-CR-67-67]

es by solid state effect toped Y ethyl sulfates 10 p1487 N68-20038

of trivalent neodymium

11 p1646 N68-20781 of alloying behavior of padolinium, yttrium, and

[DRJ-2437] 11 p1714 N68-21130 Ruby and no sdoced retinal damage (MR-68-4) 16 p2596 N68-27349

times for uranium and

ide 16 p2744 N68-27442 17 p2935 N68-29164

Research progress on game crystal growth, neodymium uranium 234 recovery, X ray spectroscopy, and polyatomic [MLM-1443] umma rays, plutonium 238, m promethium separation, ray diffraction, fast neutron aic molecules 17 p2843 N68-29171

ima ray spectroscopy of N equals 82 isotones is - lathanum, cesium, praseodymium, and neodymium [COO-1112-167]

19 p3334 N68-31735

20 p3570 N68-32881 ernal conversion electrons from decay of radiation (GNE/PH/68-6) 20 p3545 N68-32969

21 p3736 N68-33877

n 136 21 p3741 N68-34340 (JINR-P6-3823) m 138 to praceodymi-Data on decay chain um 138 and cerium 138 (JINR-P6-3541) 23 p4121 N68-36778

BODYMEM ALLOYS or policy N48-10101 NEODYMIUM COMPOUNDS

Nonaxial laser emis FTD-HT-66-520) 06 p0858 N68-15657 Optical properties and stimular groups of mixed fluorides with ne [RRE-TRANS-162] sted emission of crystal rodymism 12 p1956 N68-22427 NEODYMUM ISOTOPES

Decay products of neodymit (JINR-P6-3823) 21 p3741 N68-34340 NEON

Radiation and gas retention ages of chondrites from mass spectrometry of helium, neon, and argon [NASA-CR-90538] 02 p0208 N68-11819 Strengths calculations for ion resonance lines in neon, and argon isoelectronic sequences [NASA-CR-92577] 06 p0886 N68-15871 Power intensity and beam structure of belium-neon ptical maser

06 p0852 N68-15956 Noiseless neon discharge tube design and charac-

07 p0972 N68-16125 Excitation cross section for doubly ionized states of argon, neon, and krypton by fast electrons [NASA-CR-92882] 07 p1048 N68-16668

mization equilibria for iron, neon, oxygen, and sil-

NASA-CR-933581 08 p1221 N68-18121

Modified Redlich-Kwong equations for hydrogen and meon (BM-RI-7099) 10 p1479 N68-19550

Thermodynamic properties of argon and neon in two mensional critical region 10 p1613 N68-20116

Electron impact ionization rate coefficients for neon ions in ohmically heated hydrogen discharges of C stel-larator. [MATT-582] 11 p1761 N68-20999

Thermal ionization rates of xenon and xenon-neon mixtures in shock tubes 12 p1945 N68-22075

Application of SU-3 theory to nuclear and elementa-ry particle physics - dynamics of omega baryon and core excitation of neon

12 p1924 N68-22270 Medified optical potential approach to low energy electron-noon scattering [NASA-CR-85630] 16 p2722 N68-27614

Replotted data for ela on neon and argon [NASA-CR-85719] ic scattering of helium ions 16 p2724 N68-27914

Probability of heavy charged particle emission in negative muon capture by neon nuclei [JINR-P1-3721] 16 p2726 N68-27953 Use of gas targets in particle a ombardment of seon 20 and se on 22 17 p2936 N68-29209 [NP-17333]

Gas mixture and pressure effects on wavelength and nd form of spectral Ne line emitted by Ne-He incharge tube 18 p3018 N68-29735

Pulsed nuclear magnetic resonance studies of relaxa-tion time and internal motions in liquid and solid kryp-ton and neon, ionic crystals, and semiconducting materials [AFOSR-68-1154] 18 p3031 N68-30742 nsities in belium

20 p3493 N68-32651 suring intensity curves of m, neon, argon, krypton,

20 p3544 N68-32896 Thermal accommodation of eon, argon, krypton, and ze thium surfaces coefficients of helium,

20 p3539 N68-33421 ociation reactions of hydrogen-rare gas system 20 p3433 Nob-33476

Radiofrequency resonances in mercury and neon atoms excited by electron impact (UCRL-18178) 21 p3740 N68-34336

Calculation of lifetime and tramition probability of p-excited states of neon, argon, and krypton [NASA-CR-97198] 23 p4118 N68-36633

Pauli excitation of neon atoms, stopping power of aterials, energy transfer, ionization processes and ther studies related to radiation effects NYC-2962-6) 23 p4 20 N64-36770

EX

657

stal

340

819

im

171

186

25

of

21

37

en

16

on I

9

3

w

Coherent production of proton positive and negative son with proton exposure of neon hydrogen bubble humber Stability constants of tetrahedral nickel halides in 20 p3428 N68-32932 (BNL-12674) 24 p4315 N68-37899 Nernst-Ettingstown NEON ISOTOPES Fission into three nearly equal mass products by bombarding nuclei with heavy neon and argon loss [JINR-P7-3063] 03 p0399 N68-12788 FTD-HT-66-7761 23 p4152 N68-36703 NERNST GENERATORS

U. THERMOMAGNETIC COOLING tope yields in fission frag-ranium 238 with seon 20 U NERNST-ETTINGSHAUSEN EFFECT and argon 40 ion (JINR-P7-3710) 15 p2519 N68-26390 NERVA (ENGINE)

U NUCLEAR ENGINE FOR ROCKET VEHICLES n for Na-23/d,alpha/Ne-21 reac-20 p3542 N68-32536 NERVES nation of velocity dis-Tracking instrument for neurophysiological study or reshold of electrical stimulation of nerve cells 17 p2829 N68-28605 23 p4071 N68-36226 NEOPENTANE Nerve endings in maculae and cristae of chinchilla vestibular laborinth X ray diffrac es of liquid neopentane at 25 degrees centigri (ORNL-4103) 17 p2823 N68-29140 05 p0617 N68-13981 X ray diffraction data on carbon tetrachloride AFFERENT NERVOUS SYSTEMS AUTONOMIC NERVOUS SYSTEM [ORNL-4203] 10 p1481 N68-19671 U CANCER CENTRAL NERVOUS SYSTEM CEREBELLUM CEREBRAL CORTEX NEOPRENES U CHLOROPRENE RESINS CEREBRAL CORTEX
EFFERENT NERVOUS SYSTEMS
GANGLIA
NERVES
NEURONS
PERIPHERAL NERVOUS SYSTEM
SPINAL CORD
SYMPATHETIC NERVOUS SYSTEM
THALAMUS 255555 logy reports and meteorological charts of notated bibliography [5] 18 p3110 N68-30737 Nepal - annota [WB/BC-95] **NEPHANALYSIS** Tiros medium resolution acanning radiometer duti from short and long wavelengths used to estimate cloud top temperatures, cloud cover, emissivity, and equivalent black body temperatures [NASA-CR-2982] 07 p1020 N68-16920 cal application to the control of th Aerospace science medical applications - blood pressure, muscle, nerve, cyclinit, respiration cardiographic, brain wave, and other measuring devices [NASA-CR-90026] Of p0016 N68-10620 07 p1020 N68-16920 SEPTUNE (PLANET) Computer applicati Tabulations of trajectory data for one way trips from Earth to Saturn, Pluto, Uranus, and Neptune via Ju-(P-3659) 04 p0455 N68-13203 NASA-CR-61186] Secondary signal control impulses, electrical reac ons, and sensitivity of analyzers in relation to contro 05 p0737 N68-14508 Minimum energy trajectory data for Jupiter, Satura, Uranus, Neptune, and Pluto [NASA-CR-93783] 10 p1591 N68-19907 tioms, and sensitivity of analy factors and higher nervous sy [NASA-TT-F-11432] ms in man OS pO616 N68-14985 Periodicity, and time info tion in nerve impulse of NEPTUNIUM IZF-1967-231 06 p0779 N68-15878 Chemical kinetics of uranium, neptunium and amer-cium oxidation-reduction reactions in perchlorate Models of neuroele (AMRL-TR-67-132) 18 p3008 N68-29813 01 p0022 N68-10554 [ORNL-TR-1644] ETHERLANDS Performance evaluation of neptunium, uranium, and iron threshold monitors for high energy neutron flux (EUR-3617.N) 01 p0097 N68-10951 04 p0537 N68-12919 ring reprocessing of short m aluminum alloy target ele-02 p0194 N68-11260 05 p0622 N68-14322 midity, and other cli-port of Amsterdam 10 p1551 N68-19772 Surface defects in rolled uranium rods, drop tests of cast uranium base dilute binary alloys, and sight spec-trometric determination of neptunium and plutonium shility, wind concer-logical data for Schiph REPT-87 INLCO-9961 U NEURAL NETS 07 p1007 N68-16329 tion of septuniu NETWORK ANALYSIS NT CRITICAL PATH METHOD m solutions 07 p0955 N68-16330 Statistical analysis of self-adju-with mathematical model utron irradiation of 01 p0043 N68-10321 08 p1213 N68-17539 ear direct current and Characteristic isomer sh iveral valence states of ne ift ranges measured for prunium using Mossbauer of circuit config 01 p0044 N68-10365 IDP-MS-67-821 12 p1840 N68-22872 trol of boundary conditionary boundary valu d plutonium in seven problems of netwo [ANL-TRANS-574] 12 p1840 N68-22917 01 p0045 N68-10723 Chemical separation and coincidence methods for seasuring neptunium activity in irradiated uranium Spoord models and interface requirements for a performance and reliability of inverter motor folk (KR-124) 16 p2727 N68-28013 NASA-CR-90300) 02 p0161 N68-11106 Vaporization and properties on the binary compounds to aid a (UJV-1832-4) of plutonium and neptu-reactor technology 16 p2707 N68-28120 data for Gemini Nights

Ground tracking /9A, 10, 11, and 12 NASA-TM-X-6303

Mathematical m RC-TSR-7531

Approisal of a

Absorption spectrum and energy level scheme for neptunium doped lead molybdate crystals (AROD-5736-1-P) 19 p3356 N68-31954

NERNET-ETTINGSHAUSEN EFFECT

19 p3356 N68-31954

18 p3087 N68-29772

02 p0180 N68-11306

ork flows 62 p0192 N68-11324

03 =0359 N48-12041

06 p0060 N60-13112

of profession

lying variety of nat M-5472-PR] (21 06 p0865 N68-15654 AP, NET-1, CIRCUS, and SCEPTRE for solutions 07 p0976 N68-16132 y in solving no Reciprocity and q network problems INASA-CR-92836) 07 p0976 N68-16268 ter for bounded injus-nive lumped RC ant work 1R-3691 OR p1136 N68-17772 Linear v to network theory 10 p1544 NGS-19646 uter-aided circuit Amounted bibli analysis and design [NASA-SP-7025] 10 p1509 Nos-19882 then for (RM-5375-PR) 10 p1547 N68-20000 Analysis of no 10 p1510 N68-20145 Analog models of heat trans for in pin INR-855/XIA/PP) 10 p1513 N68-20303 tworks formed by interel for asynchronous rine basic logical or d 11 p1677 N68-20886 put stability for active, attributed systems 11 p1678 1968-21356 R-3731 r analysis and dusign of Computer programs used actronic devices and circuit 13 p2045 N68-23579 Network analysis using programming for operations [RM-5456-PR] porithms and computer search problems 13 p.2095 N66-23997 network analysis and iton rule 15 p2440 R68-26009 setwork algorithms for at flow problem of trans AD-668174) 15 p2433 N68-26430 15 p2429 1008-26716 RAE-TR-673151 16 p2632 N68-27043 16 p2695 N6B-27451 n for large band high CERN 40-181 17 p2963 N68-22574 gorithm for NASA-CR-95760 Single tree-findle valuation of topolo NASA-CR-95774) 17 passes Man-2935 Choice of best tree [NASA-CR-95772] Algorithm for com-17 p2966 NGB-29387 my in use of di al computer for a [NASA-CR-95770] 17 p2000 No Notwork Analysis for System Application Program
NASAPY applicable in analysis and assign of add
size circuits
NASA-CR-95773) 17 p2006 N69-29545 17 p2006 N60-295 -Electrical characterist 18 p3152 N Theory of cellular legi-for application to author (APCRL-48-0148) 18 p3042 1908-30130 errors in digital co 18 page 1965-3013 18 p3953 NGB-304

Analysis and synthesis of multi-layer RC distributed [CU-172-68-ONR-266-PHY8.] 18 p3053 N68-30513 s of nonlinear net-[TM-643.3471-04] 19 p3246 N68-31301 ion algorithms for use 20 p3514 N68-32740 ce of three station sferics posi-rum analyzer network for detion azimuth range tecting and tracking [AFCRL-68-0272] 20 p3523 N68-32820 Relationships between continuously scaled, periodic ad log periodic structures with application to log triodic antennas 21 p3656 N68-33690 numerical solution of near elements 21 p3672 N68-33944 orks with non nal for dig ster program for simuinting GERT networ [NASA-CR-96736] 21 p3664 N68-34186 Computer program for ac steady state and trans nalyses of linear networks [UCRL-18185] 21 p3674 N68-34629 Equivalent circuit analysis of phase locked beam control systems [CERN-68-27] 21 p3675 N68-34692 n, and qualificati ociated with comcomputer program ro sided design and analy [NASA-CR-97122] uits and systems 23 p4025 N68-36438 Maria um gain a ssign using active n-port RM-4241 23 p4039 N68-37368 Input rules for netr linear RLC circuits [NASA-CR-86099] alysis program to solve 24 p4238 N68-37583 NETWORK SYNTHESIS Algorithm for checking conflicable to synthesis of infi dness of graph and otion networks 01 p0042 N68-10313 thod of computer aided valued memoryless net-01 p0044 N68-10721 [TR-EE67-8] Microwave all-pan [RADC-TR-67-385] 01 p0045 N68-10886 Five element RC is frequency modulated [NRL-6409] maximum utilization of handwidth 02 p0180 N68-11079 frequency range by rational f delays over finite 02 p0191 N68-11200 Majority charge tech for micropower error (ESD-TR-67-483) 02 p0192 N68-11273 functional network ap-itrary envelope delay 02 p0181 N68-11318 ses of three- element-kind netwo 02 p0192 N68-11357 Analysis and system [APCRL 67-0472] rorks using reso 03 p0331 N68-12126 cal class of to se with constant 03 p0332 N68-12449 (RADC-TR-67-384) Transformation of negative driving point impedance reuits into electric circuits with negative branch ele-[AFCEL-67-0430] s with complex classifier rural nets as logical s 06 p0820 N68-15591 ive control system for Symbols of opt 06 p0820 N68-15596 for network synthesis 07 p0973 N68-16381 tive RC networks con-07 p0977 N68-16790

ectromagnetic wave ex, field theory, laser facting film, informa-

Cascaded low pass lumped sections, and transmis-ion lines of commensurate length for filter synthesis 07 p0979 N68-16988 TR-3 Two all-pass filters with linear group delay for real my scaling [AD-669125] 07 p0979 N68-16990 Network and tops nonlinear space fram [NASA-CR-75506] Canonic synthesis of LC circuit driving point func-07 p0979 N68-16993 ium lithium deifier for ge (EUR-3659.E) 08 pl154 N68-17881 [NASA-CR-61855] Network function symmetry and RC one-ports Adaptive comp threshold logic nets (AFOSR-68-0039) for synthesis of amplifiers and [TR-400-174] 08 p1152 N68-18051 ally drawing diagrams of ing interconnected nodes Optimal time-domain etwork with bounded near programming pro-Techniques for autor pological networks co nam syr ded eler concepts or events 09 pl 307 N68-18385 [AFOSR-68-0115] Topological synthesi driving-point functions Synthesis of multiply-consued on informational criteria ed control systems 09 p1319 N68-18795 inverse operator method of ulticurcuit control systems esizing auto 09 p1319 N68-18797 on optimum coding and linear p (FTD-MT-24-203-67) 09 p1304 N68-19090 Two-amplifier method for network synthesis of ra-tional voltage transfer function Calculation methods for degenerative circuits 09 p1320 N68-19202 tomatically con-10 p1508 N68-19713 State space synthesis of pa one port networks 10 p | 508 N68-19854 Active lattice of RLC reso transfer functions of complex fr [AFCRL-67-0562] es for synthesis of quency 10 p1509 N68-19959 (AFAL-TR-67-349) Hilbert and Four synthesis of impedan [REPT.-5548-8-T] ons for network Reliability of information systems with dispersed units [FTD-MT-24-389-67] 11 p1676 N68-20619 Control system synt 11 p1676 N68-20676 rwitching networks [FTD-MT-24-318-67] network-topological Design principles, feed circuits of analog compute [FTD-HT-67-241] d design 11 p1793 N68-20852 Analysis and synthesis of distribu active networks by digital computers [NASA-CR-93972] 11 ted, lumped, and Constant resistan-me varing elements 11 p1677 N68-21064 d rundom access for tacti-11 p1661 N68-21315 circuits (RM-5696-PR) Networks with un [AFCRL-67-0553] age amplifiers 11 p1674 N68-21462 Digital computer p of distributed lumped [NASA-CR-96632] Anisotropic medi [AFCRL-67-0606] k synthesis 11 p1678 N68-21578 ontrol logic and organization of m for large scale magnetic field Flow diagrams of con ata acquisition system [UCRL-17642] 12 p1874 N68-22409 Computer program /PUZZLE/ for use in solution of topological problems related to manufacture of etched protein circuit boards. [UCRL-17814] 12 p1850 N68-22924 works [HDL-TM-68-18] old logic circuits 13 p2042 N68-23172 Summary data on thresh [AFCRL-68-0066] d analysis, and behavior of ve resistors 13 p2043 N68-23485 able linear systems, and ulse response matrices 13 p2044 N68-23521 FORTRAN 2 program for random network model on solecular structure and chemical bonds of liquid water (SGD-4261-0150) and vitreous silica [REPT.-6353.00200-TR-2] **NETWORKS** 14 p2226 N68-24355 14 p2231 N68-24446 NEUMANN PROBLEM old logic networks 14 p2232 N68-24908 m computer design and network synthetications of mathematics fields [ORO-2430-37] 15 p2439 N68-25988 e finite state controllers for dynamic spacecraft attitude controllers
15 p2440 N68-26006 [TR-14] e and distributive after-15 p2441 N68-26469 24 p4274 N68-37557

SUBJECT INDEX for determining model net-16 p2628 N68-27121 drai network mo 16 p2690 N68-27619 tion of analyses of 16 p2782 N68-27745 s for time oriented dis-malysis of man machine 16 p2774 N68-28219 ing nonideal grounded 18 p3049 N68-29689 nis of electrical linear 18 p3049 N68-29731 is of RLC circuits for prescribed 18 p3050 N68-29942 Synthesis of logical net of digital perceptron based noptimum coding and linear programming methods FTD-MT-24-203-67] 18 p3039 N68-29966 Synthesis of lumped n-port electric reactances removed using S matrix the [PIBMRI-1370-67] 18 p electrical networks with 18 p3047 N68-30371 delay line networks with 18 p3053 N68-30460 Development of RC single two-port synthetechnique to realize open-circuit voltage transfer fution of lumped, linear, finite, passive, and bilateral n 19 p3254 N68-30915 Active RC circuit network synth esis techniques for 19 p3257 N68-31810 20 p3435 N68-32378 Special purpose machine for automatic synthesis of 20 p3455 N68-33469 ck amplifiers, and typical 20 p3445 N68-33471 ce networks with nonlinear and 21 p3671 N68-33740 Efficient method for finding min nal cost-time ratio 21 p3714 N68-34668 program for analysis and synthesis d activity networks 21 p3675 N68-34728 Formal differential operator techniques to extend classical network theory results to linear time-variable 23 p4034 N68-36047 Design of active 90 degree phase difference net-23 p4018 N68-36156 Logic networks synthesis with Boolean analyzer in-tegrated with general purpose computer [NASA-CR-97264] 23 p4029 N68-37357 Synthesis of n-port networks from RC lines, lumped sistors, and capacitors 24 p4238 N68-37479 Topological formulas derived for node determinants and cofactors of linear networks 24 p4238 N68-37590 Transverse focal region field distributions of Cas-24 p4227 N68-38104 Linear separability, two level threshold mini-on, and synthesis of universal network for com-14 p2231 N68-24446 Computer solution for three dimensional boundary alue problems involving time invarient conservative 03 p0383 N68-12119 of compact operators and live to Von Neuman algebra 09 p1366 N68-19463 unn. Dirichlet, and

SUBJE

NEURAL

Cycl

NEURO

NEUROP U BR

EUROP

Tran

[P-367

Feed using to toutor (GGC)

Prop

Circ

Com

IRM-4

Trac

Neu

NAS.

Gan

centra work f [AMR

U.S.

NEURO

Exp human space

EURO

CEUTE.

NT I

(UCR

EUTE/

33333

AFO

NEURO

Neu for de

RI R-452.32-67

07 p0978 N68-16927

NEURAL NETS

Cycle time lengths in random seural networks [REPT_10] 01 p0016 N68-10515

d adaptation in neuromine networks 1 03 p0330 N68-12031 Distributed a (GER-13243)

Analysis of neural shift register networks, and sychophysiological sensory color receptor model 04 p0456 N68-13475

Neural nets as logical systems with comp or continuous variables 06 p0820 N68-15591

Systematic analysis of neural response charac-ristics in vestibular nuclei 17 p2822 N68-29139

NEUROMUSCULAR TRANSMISSION

romuscular actuation system engineering model scribing responses of muscle spindle and input t of human operator during manual control output of hun

06 p0783 N68-15923

NEURON TRANSMISSION

Transfer functions for axo-somatic activation ob-sized with digital computer neuron model P-3672] 06 p0771 N68-15127 [P-3672]

Feedback force-balancing position control actuator using nonlinear neuron-like elements in opposing actuator control model [GGC/EE/67-9] 10 p1510 N68-20083 10 p1510 N68-20083

Proposed neural excitation by interaction of ul-trasonic and electromagnetic energy [AFOSR-68-0879] 24 p4206 N68-37770 etic energy 24 p4206 N68-37770

NEUROPHYSIOLOGY

Neurophysiological studie responses by cats and other as [AFOSR-67-2354] dealing with visual 02 p0165 N68-11177

iological changes in skin active drugs under hyper-

11 p1637 N68-21405

and engineering studies processing, biophysical and stroboscopic light

11 p1665 N68-21813

robistological, neuroelectrical, and neu-iological data on retinal organization in primates

14 p2195 N68-24354 [RM-4912-ARPA]

rophysiological study of ion of serve cells 17 p2829 N68-28605 Tracking instrument for neu-reshold of electrical stimulati

[NASA-CR-95656] 17 p2820 N68-28836

Ganglin, cell sites and sentral nervous system, /b insections, in treatment of work for neurophysio [AMRL-TR-67-187] 18 p3010 N68-30376

ology and medicine - life d space flight, human al stress tolerances, and support systems for man physiological and psycholog exobiological experiments [JPRS-46456] 21 p3631 N68-33909

rological changes colonged bed rest am after acceleration 21 p3633 N68-33920

NEUBOPSYCHIATRY

Experimental space payer uman behavioral and pe nace flight simulation neurology for studying nality changes during 21 p3634 N68-33922

m, subcellular cerebru isotopic labeling for 04 p0436 N68-13432 biochemical studies (NASA-TT-F-439)

NEUTRAL BEAMS

NT MOLECULAR BEAMS

NT NEUTRON BEAMS

Beam apparatus for studying in primary ion energy range 5 [UCRL-17691] ion-neutral interactions 500 eV 03 p0705 N68-14049

NEUTRAL PARTICLES

NT COLD NEUTRONS

NT PAST NEUTRONS

NT NEUTRONS

NT PHOTONEUTRONS

NT THERMAL NEUTRONS

Microwave spectroscopy and applications to use of scutral inotopes in place of radioactive tracers [NYO-3339-1] 03 p0316 N68-12632 ons to use of

07 p1051 N68-16853

(LGI-67/17)

10 p1575 N68-20416 Analysis of measurements of clustic scattering of entral particles using two FORTRAN 4 computer pro-

EUR-3744.F1 13 p2122 N68-24286 n potentials determined by use rapid neutral particles in rare

TRANS-11381 14 p2315 N68-25182 Charged and neutral particle continuity equations for describing low frequency oscillations of partially

[NASA-TM-X-52333] 15 p2529 N68-26276 Effects of ion-neutral c s on ion-acoustic insta-17 p2947 N68-28541

Toroidal plasma cor n by injection of fast [UCRL-TRANS-10223] 23 p4142 N68-36782

NEUTRALIZERS izer, for potential use mer-thruster in electric propul-Mercury discharge neutr ury electron bombardmen

INASA-CR-72343 05 p0731 N68-14184 and collisionless charged ation of heavy ion beam by 16 p2644 N68-27452

NEUTRINOS

Measurement of the charge asymmetry in decay of neutral kaon to pion, electron, and neutriso (NEVIS-162)

h giant bubble chambers

05 p0709 N68-14282

Large hydrogen bubble chamber for observation of outrino interaction physics in high energy particle 05 p0642 N68-14286

me induced by high Polarization effects in re-(IAE-1241) 05 p0711 N68-14351

Electric charge interaction with scalar magnetic charge, and electric dipole pulse evaluation of neutrino

06 p0903 N68-15074

Energy density and ne origins of neutrino source o density in universe, and 06 p0903 N68-15076

pton quantum number from e-neutrino 09 p1393 N68-19037 which distinguishes mu-[JINR-P2-3601]

Effects of core spin-d solar evolution theory [NASA-TM-X-60923] ress on neutrino flux in 09 p1416 N68-19136

n stellar interiors 13 p2146 N68-23676 Asymptotic equality of cru antineutrino interaction with [JINR-P2-3647] m of neutrino and loon 13 p2119 N68-23757

to observe muce pair 14 p2309 N68-24946

rise and antinestrine 14 p2313 N68-23084

e in sautrico reacti 15 p2527 Nee-26952

correction to high energy elastic neutrino oring by technique developed for correct

rate of various processes of analytical expressions

22 p3920 N68-34866 interactions, baryon in know decays - com-CP viola CERN-48-23, V. 2) 24 p4307 N68-37538

24 p4307 N64-37539

Electromagnetic re neutrino negative elec (ANL-TRANS-643) a of vector part of 24 p4316 N68-37948

and muons on superhi 24 p4330 1464-38190

NEUTRON ABSORBERS

Radiolytic gas prod control elements for as [AECL-2670] s in borns alsester liquid 01 poose ress-10016 in two water moderated

Absorber plate e TEUR-3615.D, V. 1) 01 p0091 N68-10446

Comparison of alreadations for water iciency experimental cal-(EUR-3615.D. V. 21 01 w0091 N66-10433

02 p0236 N68-11023

a with spatial distribution by platenia [EUR-3151.E] 03 p0398 N68-12734

Dynamic characteristi between magnet and al-rod planned for DR 3 (RISO-M-627) octromagnetic coupling in fast releasing safety 07 p1038 N68-17123

rmal neutrons in wat 08 p1205 N68-17675

Pressure regulated st or got take for much

NASA-TT-F-11373) 08 p1207 N68-18174 nite moderator media

12 p1920 N68-22004 in water near cadmin

14 p2315 1968-25167 tors, reactivity and flux ORNL-TM-2147)

14 p2294 1468-25227 Neutron time-of-flight capture, self-indication, and manifesion critis section measurements in aircusting

GA-85571 16 p2725 N68-27967 vior of pentres about

EUR-3931 E1 18 p3115 N68-30001 on copiuse by suffic Gamma ray spectra from a mecha, cromium mecha, and in [NUS-R-529]

24 p4321 N64-38335 **BUTRON ACTIVATION ANALYSIS**

Mathematical models for IRM 7094 computer pro-gram prediction of neutron induced activation [NASA-CR-89958] 01 p0101 N68-10023

Neutron activation trace element in home SGAE-BL-21/1967] for identification of mail bodies 01 p0014 1662-16911

02 p0172 N68-11026 Oxygen content dual namedo irredi [Al-CE-74] of trace obsesses in true Visitas Valley on

02 p0207 N68-11622 -

Neutros activation in a securities in a securi 03 p0311 M68-12141

03 =0374 1668-12431

12.2 m 17.0

THE SECTION 04 p0472 N68-13600 -E B.52361

00 pec25 160-14415

mospher [SR-5]

Compositive ionia

ORNL-

On-lin noise pro tector in [CEA-R

Detect

Neutr

System

FTD-H

Design

Irradi

[FFN-74

ing reac

Exper

Bread

Ballo

during 1966 (SC-T-6

AFCR

Neut [FA-M

Cf 25

(LA-D

Desig

BARC

EUR-

Abec

mergy

REPT

Multi verted (LA-3)

Spec

Com

Sovie [ATD-

Prog

moder |JAER

Electro

RT/E

Heli

Desi

Mea

(LA-T

Nui

seutre (SC-T

Perfo

tector [NASA-

dosimet [NP-173

ques for on-stream process analysis and batch sampling [ORO-2980-17] 07 p0953 N68-16137 Determination of oxygen and carbon in germ by helium 3 activation [LA-DC-8994] 07 p0959 N68-07 p0959 N68-16773 Liquid loop ne stream monitoring [KN-67-458/R/] id loop neutron activation system for plant 08 p1140 N68-17608 Electrical measure ethods for radiation ts and nuclear activation mage studies and impurity in damage stu analysis in silicon and laser m [AFCRL-67-0596] 09 p1406 N68-18424 Principles of neut [KN-68-71/R/] n analysis 09 p1343 N68-19028 Theoretical radiation physics, estrial ecology, radioactive midiation measuring instruments cs, radiation effects in ter-materials, radiobiology. 10 p1473 N68-19653 Neutron activation analysis of sodi sodium, lithium, and ors and its effect on shielding [NASA-TM-X-1512] 10 p1556 N68-20355 is of high-purity substances acopic activation analysis of (PTD-HT-66-566) 11 p1649 N68-21039 Neutron capture, fission article reaction, resonance ad fast neutron and charge n, and scattering, charged e absorption of gamma rays, and particle activation analy-[NP-17216] 11 p1754 N68-21146 spectrum stripping techniques for computerized dentification of isotopes in complex samples with espect to gamma ray energies and half lives in neutron crivation snalvais 12 p1922 N68-22141 od for response matrices ap-neutron spectra from multiiding methor plied to determ sphere and activ (RHEL/R-154) 12 p1928 N68-22449 Neutron inch ic cross section measurement on [AECL-3043] 12 p1943 N68-22985 Neutron activation analysi denum, tungsten, and graphite (CEA-R-3267) is of impurities in molyb-12 p1841 N68-22997 Nuclear activat transport mechani [UCRL-70164] for studying details of 12 p1841 N68-23015 Fast neutron act n cross sections for sodium 23, indium 115 and 116, holmium mangemore 55 and 56, india 165 and 166 at 17 neutron er 13 p2112 N68-23075 Foil activation techniq ue for reactor neutron flux [UJV-1905] 13 p2105 N68-23120 Nentron activation analysis of aluminum and cadr um by isotopic labeling of their chelates with bromi 82 13 p2023 N68-24280 pic abune nce studies by neutron activation analysis [NYO-3369-9] 14 p2210 N68-24306 n Doppler measur corneium 235 fissi ments on uranium 238 on in neutron spectra of Activation Depture and ura fast reactor (AE-314) 14 p2289 N68-24582 on analysis and gamma spec-ions of lanthasum, samarium, eu-(KR-120) 14 p2220 N68-25645 aity and chemical com-hermal neutron fluxes 15 p2513 N68-25813 EUR-3624.F) facility design, and Neutron activation (analyses of standard refe [NBS-TN-428] 15 p2499 N68-25871 Activation cross at ORO-3344-18] seutron reactions using 15 p2523 N68-26612 Continuous, on li in process control of [ORO-2900-16] 15 p2420 N68-26848 Neutron activation spect tion to Fredholm integral on (SC-RR-67-746) opy described by solu-15 p2526 N68-26872 rganete, indium, and ution cro WANL-THE-1746 16 p2728 N68-29068 togration of fast o nes using activity of

16 g2730 N68-28103

Determ [5-1811] tion analysis [SC-R-68-1723] Opti (TID-24581) NEUTRON BEAMS (RISO-144) [AERE-M-1848] [AERE-R-5647] [KFKI-7/1968] [NR-785/XIX/D]

Emission spectroscopy, mass spectroscopy, and ac-tivation analysis used for analysis of glass fragments [AWRE-O-3/66] 16 p2692 N68-20116 ation of tra es of copper, arsenic, and antimony in steels by neutron activ [AERE-AM-106] ation analysis 16 p2615 N68-28196 matographic paper used in derivative neutron ion analysis of magnesium m 17 p2839 N68-28603 ia ray spectra analysis 17 p2846 N68-29472 Computer coding pro-selysis of gamma ray for neutron activation pactivity for composite [NASA-TM-X-52460] 18 p3113 N68-29886 Neutron activation as in aluminum and alu rais of cesium ion aputtering sum oxides, and electron angular distribution of alu-(ANL-7224) obe for mea 19 p3222 N68-31007 Design and construction of equipment to computate for flux variation in neutron activation analysis [NIM-177] 19 p3259 N68-316 activation analysis 19 p3259 N68-31607 ation by activa-20 p3421 N68-32682 of polarized holmium-165 as neutron activation target [UCRL-50421] 20 p3545 N68-32927 Rare earth elements abund rites determined by radiochi ce in meteoritic chon-ical neutron activation [NASA-CR-84733] 21 p3685 N68-34058 Neutron analysis of cros chromium and nickel isotopes [KFK-704] section reactions of 21 p3754 N68-34477 um coated stai [BNWL-553] Lunar composition eutron activated game granite [NASA-CR-97124] 23 p4166 N68-36240 Neutron activation as in manganese nodules [DSR-78841] alysis of rare earth abundances (RISO-144) 23 p4056 N68-36557 Time reversal invariance test by measuring reaction slance of radioactive decay 24 p4308 N68-37561 nal neutron activation analysis for agricultural 24 p4216 N68-37877 Inelastic neutron sca dispersion of metals in qu [EUR-3621.E, PT. 1] method for pho 01 p0101 N68-10058 [LGI-66/14] er, and correction of gol 07 p1048 N68-16658 Neutron attenuation in B-2 intermediate neutron earn iron converter of BR-5 reactors tector for power [BAW-3647-6] os p1204 N68-17537 d nuclear reactors 12 p1911 N68-22936 Design and operation time-of-flight spectron [IEA-136] teristics of slow neutron 14 p2256 N68-24739 Neutron monochromator re-taracteristics of single crys [GA-8184] 16 p2746 N68-28297 rrelation type time-of-flight etically chopped polarized 19 p3278 N68-31475 interactions of neutron 23 p4118 N68-36633 NEUTRON COUNTERS Organic scintiliation detectors for measurement of ose equivalent and quality factor in mixed neutron (SZS-2/68) Neutron det Graaff accelers (UR-49-903) 01 p0102 N68-10166 Neutron counter for neutron flux in balloon (AFCRL-67-0493) ent of secondary on and rocks ot experiments 01 p0058 N68-10514 ing de Neutron dete

03 p0395 N68-12626

tector angle integration ar detonation neutron ga n program designed for summa Monte Carlo trans-NDL-TM-37] 03 p0399 N68-12799 tors, and airglow detectors, and airglow ni flights 04 p0598 N68-12918 Energy responsionaded polyethyle [LA-3595] a detector using cadmium 04 p0507 N68-13012 lithium flooride 04 p0513 N68-13722 Neutron and gamma radiation ter programs for data calculate 05 p0656 N68-13958 Wide-range cou selling neutron flux de-05 p0660 N68-14241 d physics and electronics Fourteen papers on applectronics instrumentation [BNWL-481, V. 2, PT. 4] 05 p0614 N68-14326 calibration of electro-fast neutral particles 05 p0662 N68-14379 static analyzer for dete [NASA-TT-F-11458] tron operation, seutron scattering and detec-d gamma spectra from barium and tin .NL-88] 05 p0719 N68-14801 tion, and gamma [UCD-CNL-88] integers, and neutron self trious nuclides 06 p0882 N68-15038 Activation reso shielding correct n, and gamma ray measuring devices for ing radiation shielding effectiveness 06 p0874 N68-15414 ng techniques for fabrication of urani-us steel neutron detects detector anodes 07 p1003 N68-16630 er, and correction of gold setermining neutron beam helium proportio 07 p1048 N68-16658 D/d, n/He3 and T/d, n/He4 nuclear reactions used to calibrate fast neutron rad [FTD-HT-23-816-67] 07 p0998 N68-16679 Design and performance of proportional detectors or measuring absorbed dose of gamma radiation and [BNWL-SA-1364] 07 p0998 N68-16739 Pulse height and pulse a sounding rocket flight of di [NASA-CR-92683] pe data telemetered from tional neutron detector 07 p1086 N68-16913 ng of plantic scintilla-Fast neutron counter co on counter and photomult 08 p1178 N68-17648 Cosmic ray intensity va by neutron monitor and to [\$N-4] iring 1966 recorded 09 p1416 N68-18524 Critical assembly for in-core checking of neutron de-11 p1697 N68-21075 Corrugated electrode detector for high temper [TID-24212] 11 p1697 N68-21084 malysis for neutron flux Flux detector reacti AERE-M-1870] 12 p1906 N68-22569 ic scintillation detector Design and operation of p 12 p1878 N68-22834 nd nuclear reactors 12 p1911 N68-22936 [AERE-M-1848] rement in irradiation CEA-R-33381 14 p2308 N68-24840 to observe muon pair 14 p2309 N68-24946 on monitoring in work-14 p2257 N68-25134 se around 20 MeV Van de 15 p2464 N68-25657 cy by using sulfur as fast 15 p2414 N68-26302 [ORNL-TR-1842] eutron counters used as 15 p2468 N68-26459

n cross sections of copper in

Integrated neutron flux curve as function of at-mospheric depth and cosmic ray interactions [SR-5] 15 p2463 N68-26810 Comparison of gamma sensitive and neutron sensi-ive ionization chamber measurements for reactor diag-(ORNL-TM-2144) 16 p2706 N68-28050 On-line digital transferometer for handling white one problems arising from use of thermal neutron de-ector in pulsed regime [CEA-R-3241] 16 p2665 N68-28291 ts of counic ray neutron flux in Detector means earth atmosphere 17 p2963 N68-28494 Neutron dose distribution and spectra as function of distance from neutron source in penetration study [GA-8485] 17 p2934 N68-29053 Systems design of high-sensitivity radiometer for seasuring fast, intermediate, and slow seutron and gamma radiation [FTD-HT-23-856-67] 18 p3073 N68-29889 Design and operation of neutron counters and dosimeters and neutron-matter interactions [NP-17349] 18 p3075 N68-30339 irradiated niobium isotopes used as neutron douage [FFN-74] 18 p3120 N68-30740 Experimental study of different techniques of analyzing reactor noise measured by neutron counters [RCN-75] 19 p3309 N68-31227 Breadboard model of all-pneumatic neutron flux de-[NASA-CR-72422] 19 p3278 N68-31552 Balloon and aircraft measurements of neutron flux during South American solar eclipse - November 12, 1966 19 p3273 N68-31843 (SC-T-68-1516) Intensity time variations of cosmic radiation and easurement of cosmic ray neutron leakage from earth atmosphere [AFCRL-68-0277] 20 p3581 N68-32364 Neutron capture gamma ray spectroscopy [FA-M68-16-1] 20 p3543 N68-32597 Cf 252 spontaneous fission on neutron sources for non-onable materials [LA-DC-9552] 20 p3531 N68-33087 Design of fast neutr on counters using proton recoil [BARC-330] 21 p3689 N68-34057 cank using trans centron time of flight measu [EUR-3942.F]
Absolute ce improvement of beryllium fluoride k using translatorized mixer circuit for 21 p3692 N68-34358 ets of high energy X ray beam on cross sections for natural Absolute measuring and pho-(REPT.-679) 21 p3743 N68-34490 on counter data con-21 p3744 N68-34581 Specific yield functions cal culated for IGY neutron (BSR-2302) 21 p3687 N68-34639 onitor data for Canada 22 p3865 N68-34855 Cosmic ruy station ([AECL-3140] IATD-68-16-75-11 lc research equipment 22 p3877 N68-35453 Program marginal checkout code used to calculate nativities of cylindrical neutron counters with [JAERI-1163] 22 p3878 N68-35597 a research on helium 3 counters, contamination, iron and gadolinium Electron physics re electron emission com-garnets, and ion bombs [RT/EL/67/13] 23 p4150 N68-36462 Helium 3'then 23 p4061 N68-36466 Design of transisterized unit for automatic channel stepping of 512 channel Laben analyzer [PINSTECH/PHY-11] 23 p4032 N68-36842 Mean number of fast neutrons in uranium 235 and orium 235 flasion events recorded by boron floride (LA-TR-68-20) 24 p4306 N68-37493 Numerical analysis of correlation functions of two eutron detectors located in nuclear reactor 9C-T-68-1532) 24 p4294 N68-37737 neutron detector (SC-T-48-1532) er with alpha scattering for 24 p4257 N68-37851

Computer code for calculation of number of de-tected neutrons from point aource and slowed down in homogeneous mixture of any dry material and water [KFK1-15/1968] 24 p4314 N68-37862 **NEUTRON CROSS SECTIONS** Neutron cross sections - Bibi [BNL-50061A] 01 p0101 N68-10013 Energy dependence of radiative capture cross sections for neutrons by surepium, holmium, and latetium [JINR-P3-3417] 01 p0111 N68-1065 Nuclear reaction cross sections - Bibliography [PAEC/A/IN-661] 03 p0373 N68-12305 Nuclear reaction cross sections induced by high 03 p0394 N68-12611 od spectra, proton and reactions 05 p0703 N68-13953 Neutron cross section outron scattering, and m d in neutron cross section 05 p0632 N68-13957 Data compilation for helium 3 neutron-proton and eutron-deuteron reaction and scattering cross sec-(CCDN-NW-6) 05 p0716 N68-14680 outhorus 31 nuclear reaction as standard method seasuring neutron yield and flux from D/d,n/He 3 06 p0887 N68-16095 ices in neutron cross [GA-8203] 07 p1040 N68-16318 or p1042 N68-16435 Neutron cross sec [ORNL-TM-1872] Neutron cross sections and force function of ger-manium isotopes (JINR-P3-3456) 07 g1048 N68-16685 Comparison between /neutron, gamma/ cross sec-ons for thurium and copper in energy interval 0.1 to tions for thurium and 3.4 eV [AE-304] 07 p1031 N68-16880 Neutron cross section of manganese evaluated for suclear data file [BNL-50060] 07 p1052 N68-16909 07 p1052 N68-16909 Relative cross section for thermal and resonance neutrons in energy spectra of long range alpha particles emitted in thermal neutron fission of varanium 235 [INR-817/IA/PL] 07 p1054 N68-17120 ts of epithermal neutron cap-tion ratios of unanium 233 and alt monitors in high flux facili-[WAPD-TM-613] 08 p1201 N68-17240 Reactor neutron capture cross section of scandium 46 and beta branching ratio of scandium 47 decay [SGAE-PH-61/1967] 09 p1390 N68-18836 Evaluated neutron cross section data for plutonium and curium isotopes (NAA-SR-12271) 09 p1396 N68-19261 Neutron cross section averaging package for radia-tion transport codes [ORNL-4130] 09 p1397 N68-19300 09 p1397 N68-19300 Measurements and renormalizations of neutron cap-ure cross section data in keV energy range for fast sector calculations reactor calc (KFK-635) 09 p1398 N68-19324 Measured neutron electromagnetic form factors at nomentum transfer of scattered electrons 10 p1366 N68-19763 Digital computer code for calculate sections and constants [AFIT-TR-67-17] ating neutron cross 10 p1569 N68-19992 Neutron and gar na ray production cross sections 11 p1643 N68-20607 GA-7829, PT. 61 Neutron interacti sections for magnes (GA-7829, PT. 3) ma ray production cross 11 p1750 N68-20724 na ray production cross Neutron interaction and gamma ray production cross sections for potantium [GA-7829, PT. 5] 11 p1750 N68-20725 Neutron and gamma ray production cross sections for sodium, chiorine, magnesium, potassium, and calci-11 p1752 N68-20939 [GA-7829, PT. 1] .. utron and ga duction cross seci

(GA-7829, PT. 2)

ron and pro-analog re-in deuteron

11 p1753 N64-21023

11 p1754 N68-21145

d reactions em and charge o neutron cross

Data sources for escient data library [AWRE-O-63/67] 11 p1757 N68-21461 Detection of neutrinish energy electrons (155-47/18) ed in synch 11 p1758 N68-21808 Neutron crose section fuel burning studies [AAEC/E-184] 12 p1906 N68-22540 Neutron cro uranium 232 [GA-7462] ion isotop 12 p1929 N68-22546 on data for tantalum in Survey on neutron interaction data for tantalum in 1.Oc-10 to 15.0 MeV energy range [AHSB/S/-R-141] 12 p1889 Nes-22616 Neutron cross section (GA-8133) 12 p1933 N68-22648 tion of effective cross region 12 p1943 N68-22979 Computer program for evi section in unresolved resonant [GA-8003] Neutron inch rhodium isotopes [AECL-3043] 12 p1943 N68-22985 and samarium [FTD-HT-23-655-67] 13 p2122 N68-24229 Thermal cross sections cross sections of ytterbia [BNL-12263] pes 14 p2305 N68-24718 Total neutron cross se beryllium 9 and energy re [CONF-680307-15] of oxygen, nitrogen, and 14 p2311 N68-25047 Neutron and a resonance scattering (BNL-12269) cross section 14 p2314 N68-25156 Differential, neutro cross sections and ele reactions [ORNL-TM-2159] re, fission, and scattering metic spectra of suclear 14 p2294 N68-25258 [GEMP-587] 14 p2317 N68-25360 User manual for u computer program to cal-s in high energy and ther-WANL-TME-17511 14 p2318 N68-25427 Detection and query drogen on planetary e determination of ar surfaces by neutron [NASA-CR-94773] 14 p2348 N68-25553 Nuclear research report on neutron cross section fel tests, and radioactive [WASH-1079] 15 p2516 N68-26112 ron reactions using ORO-3346-181 15 p2523 N68-26612 seuline spectrum WALD-TM-667 15 p2525 N68-26827 Thermal neu caloy 2, copper [AECL-3073] 16 p2703 N68-27566 re, self-indication, and Neutron time GA-8557) 16 p2725 N68-27967 BNL-TR-197 16 p2704 N68-27968 WANL-TME-1721) 16 p2728 N68-28032 al neutron cross secfor training 16 p2731 N68-2810 16 p2708 N68-28168 17 p2923 NGB-283 is ended in reli-17 p2966 N68-28497 minn 238 persistant 17 p2931 NGS 17 p2936 NGS-29(23)

uranium 23 [BNL-5004

SNAP 19C

shielding of

in /t,p/ reac (SC-DC-67

EUR-366

Direct as of neutrons taneous fiss

KAPL-P-3

Neutron method for [KFK-542]

Preparat titanium ta (CEA-R-30

Discrete

tion in suc (JEN-171-

Evaluati proton-pro

mation (JINR-E2-

neutronic of [ORNL-42]

Neutron (CEA-R-3)

Monte (

(FEI-85)

Neutron

ORNL-TI

Tritium tures of tri [NP-1741]

Discrete

neutron of hydrides at [NASA-TI

of inotopic

Comput roup, sp

WAPD-T

Cross o

photoprodierium [NP-1745

Neutron JINR-P3

NEUTRON :

NEUTRON :

Flux d (ORNL-T

Zero p

FORTRA

NEUTRON DECAY Kernel-diffusion analysis for suclear power seactor radiation shields, and related nuclear fusion, absorp-tivity, and neutron removal data [GEMP-599] 17 n.2030 keep neu-17 p2939 N68-29230 Nuclear data, optical nuclear model, reactivity, ther-odynamic properties and reaction kinetics of various expounds in reactor physics and automatic neutron (Al-ABC-12638) 17 p2917 N68-29353 rmal neutron spectra and cross sections stu-neans of thin resonance foils died by means of thin r 18 p3114 N68-30142 Neutron fission and absorp on cross sections for U [ORNL-TM-2140] 18 p3132 N68-30239 Neutron total cross se and iron in 2 MeV vicinity [USNRDL-TR-68-50] 18 p3029 N68-30533 Tables and graphs of data on neutron cross sections om elastic scattering in deuterium [LA-3271] 18 p3136 N68-30622 Fast neutron spectra m ad enriched uranium ared in spheres of depleted [GA-8551] 19 p3326 N68-31156 SCORE - computerized cross section evaluation system for reactor design [NAA-SR-MEMO-12529] 19 p3313 N68-32023 Resonance integrals meanment facility [IN-1195] red in reactivity measure-20 p3543 N68-32683 GAPGAR computer program for calculating neutron spectra and group averaged cross sections [GA-7542, V. 1] 20 p3531 N68-33088 m for calculating neutron Total sestron cross section for natural samarium seasured in energy range from .06 to 1 eV with crystal (CNAEM-52) 21 p3735 N68-33860 Neutroe cross section in thermal energy region (ITEF-546) nts of thorium 230 21 p3741 N68-34434 Neutron flight to 21 p3742 N68-34445 Average neutron and abs (AERE-R-5224) 21 p3743 N68-34475 Absolute me sergy and pl super and lea ts of high energy X ray bear on cross sections for natur 21 p3743 N68-34490 Neutron total a n cross sections of plu-21 p3745 N68-34701 (IN-1132) DV-11311 22 p3932 N68-35680 inpersion curve for beryllium analyzed, and as section for urunium carbide measured 22 p3933 N68-35717 Cross section set sensitivity to seutron transport in (OID)L-TM-2252) 22 p3934 N68-35772 enermediate nucleur struc-tal cross section massure. I keV included resonances and in res based on neutron total (CEA-R-3279) 22 p3936 N68-35846 Experimental cross so um 234 and 236 with res [GA-8135] rements for urani-23 p4126 No6-36994 Radiative capts neutrons - absolute m etry, detection of capt surements, and cross of ie me a rays, act (LA-TR-44-18) 23 p4127 N68-37017 n 238 [CEA-R-3503] 23 p4131 N68-37154 surrements on molyb-real metals 24 p4304 N66-37432

intine capture and fusion cross sections for m 235 and photosium 239 in resonance-neutron

ring assistancy effect on calculation of pulsed-

24 p4304 N68-37435

s for nickel and aliver

24 p4310 N68-37616

24 p4316 N68-37973

01 p0104 N64-10292

sique for neutron

FORTRAN computer codes for processing foil counting data on fission decay
[ANL-7356] 10 p1569 N68-20105 Prompt neutron decay as in subcritical enriched urani (ORNL-TM-1736) cay and reactivity measurements luranium metal cylinders 12 p1939 N68-22866 Neutron diffusion measurements on square graphite stice of cylindrical channel and on solid graphite [IAE-1363] 12 p1912 N68-22941 rements of neutron bursts in small im and beryllium oxide 13 p2114 N68-23163 Decay mean blocks of beryli (IAE-1362) Neutron decay and spectrum analysis by computer siculation for fast nuclear reactors under neutron [CEA-R-3351] 14 p2293 N68-25166 ratron pula electic scat egral check on high ener-GA-8536) 16 p2725 N68-27965 Radiochemical analysis of neutron-proton and eutron-alpha particle reactions induced by fast reactor neutros (KR-123) 16 p2705 N68-28016 Pulsed source and Willers method used in calculating flusion parameters from decaying seutron field 17 p2983 N68-28430 NEUTRON DEFFRACTION Structure of alpha-lead axide by three dis-[PA-TR-3572] 03 p0313 N68-12411 ol of X my and neutron [15-1701] 05 p0660 N68-14214 Convention dered ure ple axis spectro 05 p0680 N68-14510 [JUL-500-RX] 06 p0843 N68-15225 tron diffi dynamics prob (BNL-11836) 08 pl221 N68-17279 (AERE-R-5642) 09 p1311 N68-18883 erties of biamuth ferrate and re-(COO-1368-8) 12 p1958 N68-23009 Fined scattering angle spec fraction analyses on metal por [RISO-164] er for neutron dif-13 p2066 N68-23237 14 p2256 N68-24743 16 s2678 N68-27283 ection used in crystal structure research sistaining hydrogen 17 p2959 N68-28983 er measurements and powder lpha-FeOOH 18 p3131 N68-30076 X ray analysis of inrtionyl triphenyl phos-legment of gutomated 19 p3221 N48-30964

ranium 238 capture, half lifes of iron and alu-ium isotopes, and neutron decay measurement niques in fast zero power reactor

mass and neutron decay expering is for reactor safety

Sodium void coefficient, Doppler effect, and prompt neutron lifetime calculations for oxide pancake and carbide optiom fast ceramic breeder reaction [RT/FI/67/23]

05 p0695 Nas.14637

lieta decay coupling constant ratios experimentally determined from proton spectrum in neutron decay [SGAE-PH-56/1967] 10 p1563 N66-19681

03 p0377 N68-12605

05 p0690 N68-13954

der reactors 05 p0695 N68-14687

06 p0888 N68-16102

ermal neutrons in water absorber cadmium 08 p1205 N68-17675

10 p1566 N68-19757

ents and

[KFK-174]

(TH/224)

Measurement of decay of the poisoned with non-1/v neutron a [AE-309]

Data snalysis of gamm in terbium isotope decay [JINR-P6-3479]

er to study atomic physics of single and polycrystals (IFA-FN-33) 19 p3276 N68-31252 Neutron and X ray d of yttrium dicarbides 20 p3425 N68-32856 on diffraction studie im oxide at high pres dies of alpha-iron oxide and 23 p4113 N68-36123 NEUTRON DISTRIBUTION n of fast neu 01 p0112 N68-10731 hux distribution and buckling measure-tion of fuel loading in reactor lattices 03 p0378 N68-12675 (NP-16953) Time dependence analysis of neutron distribution om pulsed source in confined moderator, and neutron sectra determination for arbitrary times ov times 04 p0536 N68-12840 n fr of reactor moderator 04 p0542 N68-13869 BNL-TR-154] Computer program for ca tributions in reactor shields [GA-8069] lating neutron flux dis-05 p0696 N68-14730 Energy and angumma rays to dete cs in air characteristics (CEX-62.12) 06 p0876 N68-15783 07 p1039 N68-16175 Computation of thermal ne ater moderated reactors m distributions for 07 p1030 N68-16607 tion for time dependent neutron diffusion equation (EUR-3742.E) 09 p1387 N68-18496 Monte Carlo and discrete compared with experiments at 7 to measure neutron distribution transmission through shields [ORNL-TM-1965] crete ordinates calculations its at Tower Shielding Facility butions in ducts and neutron 09 p1387 N68-18561 ements on square graphite nel and on solid graphite flAE-13631 12 p1912 N68-22941 Pulsed source method for determining vacancy ef-fect in moderator materials on thermal neutron diffu-tion constant, and evaluation of diffusion cooling ef-[JUL-518-RG] 17 p2913 N68-28428 us in space-time neutron dis-(RT/FI/68/14) 17 p2945 N68-29555 Laplace and Fourier tra problem of space time dis neutrons in infinite medium [RT/FI/68/15] rm methods applied to trion of monoenersetic Statistical model for density in energy space [EIR-133] 20 p3543 N68-32717 Automatic flux d cording device for use 21 p3695 N68-34756 in subcritical auto [EUR-3943.F] Thermal in water at 24 deg C 23 p4135 N68-37262 NEUTRON EMISSION Comparison of absolute calcumma and neutron doses moderated critical au (NASA-TN-D-4223) 01 p0089 N68-10291 n fluctuation in large Spatial effe nuclear reactor (TID-23946) 01 p0096 N68-10928 Excitation function as neutrons emitted from nu/proton, neutron/chromius (LYCEN-6732) ngular distribution of reaction vanadism 51 at low energy 02 p0245 Nes-11500 on constants of plutoni-ium 235 03 p0374 N68-12446 ions induced by Nigh 03 p0394 N66-12611 or thresholds in negative NEVIS-155) 03 p0396 N68-12640 ture requirements for uranium graphite cell 03 p0397 N68-12724

E 11 2191

[RE-344]

EUTBON DECAY

Neutron emission and scattering cross sections of uranium 235 [BNL-50045/T-455/] 05 p0707 N68-14186 Subcritical neutron ma SNAP 19C-2 heat sources [MLM-1416/DEL-1/] cation determine with ining plutonium 238 07 pl029 N68-16579 Neutron fluxes and dose-e shielding of Los Alamos Meso [HASL-188] ivalent rates in lateral Physics Facility 07 p1046 N68-16612 Two-neutron confi in even calcium isotopes in /t,p/ reaction (SC-DC-67-2032) 07 p1046 N68-16615 FORTRAN program for relativistic calculations on inematic parameters of neutron producing reactions EUR-3668_E] 08 p1215 N68-17894 kinematic paran [EUR-3668.E] Direct and absolute measurements of average yield of neutrons in thermal fusion of uranium 235 and spon-taneous fusion of californium 252 09 p1396 N68-19277 Asymptotic methods for systems of differential equa-ons in which some variables have very short response [KAPL-P-3341] 10 p1554 N68-19585 CAPL-F-33-1]
Neutron-neutronhole states in cerium 140, and well olated resonances in promethium 141 that are isobar-analogs of low-lying states in cerium 141 10 p136 N68-19730 Neutron noise analysis by probability distribution method for determining reactor parameters [KFK-542] Preparation of deuterium containing palladium and titanium targets for neutron generation [CEA-R-3065] 11 p1654 N68-21404 Discrete ordinate approximations and other mathematical techniques for solving neutron transport equation in muclear reacts (JEN-171-DF/I-511 11 p1743 N68-21459 Evaluation of peripheral model for calculating on proton-proton interaction with neutron and pion for-[JINR-E2-3638] 12 p1941 N68-22921 Zero power physics experiment to measure eutronic characteristics of molten salt reactor ORNL-4233] 12 p1912 N68-22954 IORNL-42331 Neutron flux determination by copper activation [CEA-R-3295] 12 p1943 N68-22995 Monte Carlo method for time and energy distribu-tion coefficients of neutrons emitted from hydrogen containing radiators [FEI-43] 14 p.2314 N68-25137 Neutron data effects on breeding performance and power cost estimates for molten salt reactor [ORNL-TM-2157] 16 p2705 N68-28048 Tritium to helium 3 dec tures of tritide targets for ne [NP-17412] cay effects on crystal struc-17 p2932 N68-28942 Discrete ordinate computation of fission spectrum neutron dose rate attenuation curve for lithium hydrides and tungsten [NASA-TN-D-4684] 18 p3131 N68-30001 Neutron emission and reaction kinetics in exchange of isotopically enriched O with Pu/238/O2 [MLM-1462] 18 p3029 N68-30568 Computer program for solving two dimensional, two group, space-time neutron diffusion equations with temperature feedback [WAPD-TM-743] 18 p3139 N68-30806 Prompt multiple neutron capture experiments and synthesis of heavy elements 19 p3319 N68-30867 Cross correlation method for measuring neutron wave propagation in heavy water uranium amembly 19 p3322 N68-30996 Nuclear structure effects in simple high energy spal-lation reactions with nickel and zinc 20 p3541 N68-32335 Regenerative in-core neutron flux monitors using mixture of fertile and fluide uranium isotopes [BNWL-SA-1621, REV.] 21 p3724 N68-34304

NEUTRON FLUX DENSITY

Flux density distribution, dose equivalent, and shielding effectiveness of 14 MeV neutron generator [ORNI-TR-1757] 01 p0110 N68-10395

Collison cross section measurements for hotoproduction of negative pions by neutrons in deu-INP-174581 21 p3742 N68-34438 Neutron resonan [JINR-P3-3882] 24 p4316 N68-37939 U FLUX (RATE)

NEUTRON IRRADIATION of density and chemical com-ming thermal neutron fluxes. 15 p2513 N68-25813 Temperature and thermal stress distribution due to hermal neutron flux peaking near end plugs of flue subt are determined for smooth and finned cosmising EUR-3557.Ej 01 p0094 N68-10784 In-plant measurement or position of hydrocartoms (EUR-3624.F) rods are determin (EUR-3557.E) Cohn model for prefected reactors m reactivity in Neutron flux density means moval cross section of vari rement and effective 16 p2703 N68-27218 materials - polyethylene [UCRL-TRANS-10128] Computer program to calc e important functions limension of fast reac-01 p0114 N68-10816 Neutron-flux-induced Zircaloy-2 specimens in systems at 280 deg C [BNWL-463] dation and hydriding of [RT/FI/68/9-PRV-R-/67/14] 19 p3330 N68-31507 02 p0220 N68-11017 Flipper-chopper for poli (KR-125) 21 p3739 N68-34145 Thermocouple exposure to neutron flux density levels in Experimental Breeder Reactor 2 (BNWL-8A-1227) 02 p0237 N68-11478 Automatic flux distribution in subcritical assemblies or re [EUR-3943.F] ding device for use 21 p3695 N68-34756 Computer codes for neutron flux spectra of plutoni-um-water lattices [GA-7562] 03 p0380 N68-12726 are up determination of clear fisch 22 p3912 N68-35845 coated uranium and th Boltzmann equation for calcust density in inhomogeneous s calculating average neutron rous media 04 p0535 N68-12836 ar reactors with feed-proach eutron fluctuations in determined by Lange WL-SA-2003) 24 p4293 N68-37494 Neutron flux density drop measurements in berylli-um and beryllium oxide alugs Method for solving noncenergetic neutron Attenues equation for flux distributions in 04 p0537 N68-12845 Comparison of neutron flux detectors, and sirglow horizon photographs from Gemini flights [PB-174485] O4 p0598 N68-12918 RT/FI/68/30) 24 p4294 N68-37771 Reactor core to semiconductor di [CEA-R-3304] Performance evaluation of neptunium, uranium, and iron threshold monitors for high energy neutron flux 24 p4296 N68-37889 EUTRON IRRADIATION 04 p0537 N68-12919 Tensile properties of iron and steel irradiated with fast neutrons [EURAEC-1864] 01 p0072 N68-10038 Reaction rate ratios in reactor lattices including effects of local neutron fluxes occurring as discontinuities in regular fuel rod patterns
[WCAP-6066] 06 p0875 N68-15493 Long-term mechanical properties of steels subjected to mechanical stress at elevated temperatures and Relative total neutron mese activation distrib oxide fuel assemblies stron densities and hyperfine mon-distributions for natural uranism neutron irradiation (EURAEC-1881) 01 p0074 N68-10196 [AECL-2772] 06 p0875 N68-15506 Neutron radiati (SC-RR-67-312) 01 p0037 N68-10256 Fast and thermal neutron flux measurements in test cavity outside HB-6 beam port in Plum Brook reactor using suffer pellets and gold foils [NASA-Thd-X-1497] 06 p0875 N68-15643 to acutros embrittle-Steels with redu ness for suclear pro (EURABC-1883) 01 p0093 N68-10483 Irradiating Au 197 under Cd cover in neutron flux to produce Au 198 that contains less than one-tenth per-cent Au 199 [CEA-R-3239] 07 p1039 N68-16170 Identification of eutron irradiated p phosphates in thermal cay-anion salts by anion COO-[618-2] 01 p0022 N68-10524 and by slow and fact Cavit ntion me ds of measuring lattice parame-in estimating material buckling AERE-R-5406] 01 p0109 N68-10531 07 p1025 N68-16214 orus cay-missa in thermonium and calcium and calcium oil p0022 N68-10533. electrone, ione, gramm Nitrogen contain Thermal ph shielded reacto [NSJ-TR-93] ribution in water (00-1618-4) 07 p1026 N68-16226 Irradiation with rays and fission pro (JPRS-43250) Spectrum analysis for determination of management of seutron one nining neutron flux in on-recoil spectrometer 01 p0006 N68-19671 Radiation effects: strength and press structural materials [NRL-1808] for measure [EN-1143] or p1203 N68-17324 ren embeltfement in high Approximate solution to time dependent multigroup eutron diffusion equations using restricted variational 03 p0370 N68-12175 10 p1555 N68-19668 Dose rate effects on yield iron by neutron irradiation [ORNL-P-2922] tress of vacuum melted flux detector 10 p1530 N68-19971 03 p0351 N68-12304 Shear stress of cu tetragonal symmetry radiated aluminum and [BNL-TR-162] cubic crystals with defects of ry and electron and mention in-Greens function to solve steady state differential equation of neutron diffusion for symmetric heteropeneous nuclear system [BRL-R-1374] 11 p1738 N68-20761 03 p0352 N68-12415 Transport-theory angular of SNAP reactor analysis [NAA-SR-MEMO-12592] Krypton release vale (EUR-3556.F) 03 p0314 N68-12467 ture coefficier 11 p1740 N68-21092 Energy spectrum and total produced by neutrons in solids [CEA-R-3228] flux effects on dam 03 p0352 N68-12469 11 p1772 N68-21135 EURABC-18251 Fast neutron flux and energy spectrum variations in mosphere at solar minimum 03 p0375 N68-12472 igue properties of 12 p1866 N68-22160 B 1228-P-4-281 03 p0376 N68-12556 Monte Carlo code for calculating pulse height dis-itration due to monoenergetic neutrons incident on Influence of mi organic scintillat [ORNL-4160] - 03 p0353 N46-12571 on and steel seeke flat 12 p1929 N68-22543 Design and operation of plastic scintillation detector system for measuring neutron flux [GA-8184] 12 p1878 N68-22834 influence of air autros irradiation EURABC-1919) 12 p1878 N68-22834 0) p0353 NGS-12634 tradiation of unmine Liquid bellow ton with neutrons (ANL-TRANS-432) Computer program for solution of multigroup entron diffusion equations in Univer 1108 computer GA-8188) 12 p1938 N68-22835 03 p0353 NAS-12682 large breakdown of in-(GA-4188) Electrical resistive massa-CR-72334) Foil activation technique for reactor neutron flux 04 p0558 N40-1334 [UJV-1905] 13 p2105 N68-23120 Operation and design safety criteria for radiometide containment in fast flux test reactur [BNWL-607] 13 p2106 N68-23368 X ray and proton of odins of arbitrary of ECGM-2873]

07 pases 1986-13443

0

[WA

Ri radii BN

IAP

No.

Sy duri [NA

Infuel (CO

R

Hi radii (SC-

Ni yieki OR

E

less,

NEUT

(EA

0

(KF

tran ture (RA

and [AE

(TR

BN

6

physiand [Oil

SI

hium fluoride thermolum na ray and neutron detecti 04 p0512 N68-13720 space flights - fast 04 p0458 N68-13784 lent distribution in dting from broad-beam a determined by Monte 04 p0458 N68-13785 reutron irradiation (EURAEC-1921) 04 p0523 N68-13863 Design and calibrated to determine eff e of ultra-high pressure X ray BNWL-438] 05 p0666 N68-13970 ire, and density effects on irradiated graphite 05 p0666 N68-13978 BNWL-5021 te during thermal 05 p0666 N68-13986 Use of small ti et ionization chamber for first neutron dos (NP-TR-1575) 05 p0614 N68-14426 Radioactivity is ection materials by neutron and pro (CERN-67-23) and spallation 05 p0721 N68-14979 Cyclic deform on irradiated copper sin-AERE-R-5595) 06 p0853 N68-15108 ing in single crystal AFRE-R-5610) 06 p0857 N68-15109 Cast iron softening ([FTD-HT-23-549-67] 06 p0856 N68-15895 n of chromium /6/ IFA-ESR-16) 07 p0959 N68-16774 Superheuter to loop of R2 reactor [AE-308] 07 p1031 N68-16794 tensile, creep, fatigue, of reactor materials 07 p1009 N68-16876 NASA-CR-931281 aktinium 233 WAPD-TM-6121 07 p1052 N68-16887 body centered cubic metals and solid (ORO-3612-4) 07 p1009 N68-16892 se methods for non-n, and analysis of fis-(LA-3741) 08 p1212 N68-17437 h on BR-5 reactor operation, inter-beam converter, incope formation by on, and asymptotic approximation of 08 p1204 N68-17535 on irradiation of 06 p1213 N66-17539 OS p1206 N68-17918 (NRL-MR-1833) 08 p1226 N68-17991 radiated molybdenum 10 p1537 N68-19507 (RCN-77) ensile properties of BARC-3001 11 p1712 N68-20962 tics of fueed silics to reactor irradia-NASA-CR-10311 11 p1740 N66-21124 on Zamer dinden in ZF HM 8-631 11 p1755 N68-21175 irradiated silicon and NCL-47-43R1 11 p1772 N68-21250 orgy dependen angular uninctropy of flation a 235, and photograp 239 in-ANI-TRANS-150) 12 p1927 N68-22375

d effects of neutrons and (NSTIC-TRANS-1840) 12 p1823 N68-22443 Neutron irrad hanical properties of pyrolytic an [TID-24233] 12 p1894 N68-22485 Neutron irradiata (ORNL-TM-2019) ductility 12 p1889 N68-22563 surements on time n beam irradiation 12 p1934 N68-22670 [LA-TR-66-8] Performance chara proportional counter radiation in Triton rea [CEA-R-3343] s of beryllium trifluoride 12 p1877 N68-22716 irradiation for fast amage to clad materi-(LA-3768) 12 p1910 N68-22802 luced molecular ion Atomic structure of rad 13 p2009 N68-23177 pha particle, neutron-proton, eutron-tritium reactions 13 p2114 N68-23232 [NYO-1082-10] Reactor irradiat levels in fused sifica [NASA-CR-1032] on optical absorption 13 p2107 N68-23481 Lithium fluoride cent responses to 13 p2135 N68-23674 to for determining pies 13 p2120 N68-23848 [NASA-TM-X-63205] 13 p2121 N68-24063 THIR-511 13 p2024 N68-24288 Changes in electrical studied after fast neutros (BMWF-FB-W-68-15) ties of p-n Si solar cells 14 p2191 N68-24687 fiction of ura les in presence of (CEA-R-3329) 14 p2217 N68-25091 Pubed neutro response of subcr [CEA-R-3336] for determining pulse 14 p2293 N68-25092 Shaping and irri (EURAEC-1980) nium monocartide 14 p2293 N68-25172 e degradation in silicon n irradiation 14 p2332 N68-25179 tion of damage in zirconium [AECL-3086] m on rate and distr 15 p2513 N68-25885 fast neutron irradiated 15 p2534 N68-25910 rmation on yield 15 p2539 N68-26337 Legendre po egral in Boltze penetration of in 15 p2518 N68-26359 Effects of nuclear diodes for use in SNAP (NASA-TN-D-4620) 15 p2437 N68-26662 ium target and analysis is, and tritons 16 p2719 N68-27163 of notch impact ap-diated samples 16 p2704 N68-28008 Construction and operation of the contraction for strength tests on its (SGAE-M-15/1968) Curie levels and R [MLM-1457] 16 p2731 N68-28163

opper, amenic, and anration analysis 16 p2615 N68-28196

ts on mechanical pro-

16 p2685 N68-28204

17 p2900 N68-28818

17 p2958 N68-28866

sefects in single crystal calcite is ray, X ray, and neutron irradiation

(AERE-AM-106)

NASA-TN-D-46611

vicinity of Van de Graaff accelerator at Oak Ridge Na-tional Laboratory (ORNL-TM-2137) 17 p2915 N68-28941 r solving linear, energy t equation, and applica-17 p2937 N68-29215 crystallographic data on formed in annealing of 17 p2901 N68-29231 of uranium oxide and mixture fuel rods in 18 p3114 N68-30055 tron irradiation of Cd or production by ne properties of Cd 109 108, and prope ORNL-42471 18 p3114 N68-30163 Digital computer flux and poison ator (EUR-3930.E) for calculating neutron nuclear fuels 18 p3115 N68-30184 evior of neutron absorbers ng analog and digital com-EUR-3931.E) 18 p3115 N68-30203 on tensile, impact, and and welds in Elk River 18 p3116 N68-30302 a used to determine efr neutron irradiations 18 p3119 N68-30703 Irradiated niobiu used as neutron dosage [FFN-74] 18 p3120 N68-30740 neutron irradiated alu-es, and magnesium oxides Thermal conduct minum oxides, beryl at low temperatures 19 p3383 N68-30968 sests on neutron ir-19 p3291 N68-31247 n of equipment to compen-cutron activation analysis 19 p3259 N68-31607 Design and con sate for flux varieti [NIM-177] lithium oxides of SRRC-26/681 19 p3232 N68-31943 20 p3451 N68-32643 ns from decay of n 147 by neutron irm 147 to p radiation [GNE/PH/68-6] 20 p3545 N68-32969 at treatment, and defo 20 p3503 N68-33212 Neutron irradiation nuntenitic stainless of (BNWL-SA-1455) 20 p3505 N68-33354 In-reactor creep of structural materials for nuclear BNWL-SA-1458) 20 p3533 N68-33355 Cold work, therm tion effects on fractu BNWL-SA-1805] nt, and seutron irradia-m of Zircaloy 2 20 p3534 N68-33429 Neutron irradiation iron single crystals w strem-strain curve data [ORNL-TR-1930] ct on plastic deformation of different carbon contents -20 p3506 N68-33443 Neutron irradiation effect on plastic deformation of on single crystals with different carbon content - work (ORNL-TR-1931) 20 p3506 N68-33444 Energy spectra and angular oduced by irradiating copy or distributions of protons oper with 14.3 and 16.6 21 p3735 N68-33777 te on iron and steel subjected to fast [M-551] 21 p3703 N68-34274 age to microstructure of Fast (RCN-96) 21 p3741 N68-34357 Fission gas releas isothermally at temp (GEAP-5100-10) nium dioxide irradiated om 1500 to 2100 deg C 21 p3725 N68-34395 Optical studies um fluoride (COO-1054-40) ters in irradiated lithi 21 p3755 N68-34560

X

1

Creep analysis of Zircaloy during neutron irradiation [WAPDeTM-756] 21 p3705 N68-34579 te studied after neutron irpowition in EBR 2 21 p3727 N68-34580 Neutron irradiati (AFCRL-68-0321) on effects on field effect transistors 22 p3846 N68-35259 les under high hydro-Neutron irradia (BNWL-613) · 22 p3910 N68-35693 ements on fused silica sed seutron irradiation 22 p3912 N68-35826 Spectral transmin during and after exp [NASA-CR-1191] m earbide molear hradiated uran fuel performance e [CONF-671005-7] 23 p4103 N68-36909 Reaction channel separation of neutron-proton in-eractions produced during neutron irradiation of bub-le chambers ille chambers 23 p4125 N68-36949 Hall effect and electrical radiated silicon at 76 deg K [SC-DC-68-2328] activity of neutron ir-23 p4156 N68-37086 on plastic deformation ron carbon alloys 23 p4079 N68-37097 tron irradi yield strength of single crystal in [ORNL-TR-1932] ectron irradiation on low ctivity of germanium and [CEA-R- 3387] 23 p4156 N68-37136 cts on thermocouples for FFTF coolant (BNWL-SA-1857) 23 p4064 N68-37160 NEUTRON PHYSICS Intense neutron sources and applications to researcin neutron physics, nuclear physics, and condense [EANDC-63/U/] 03 p0395 N68-12633 Fortran 4 program for les ast squares method analysis 03 p0396 N68-12653 eutron and reactor physics ding, critical mass, and a us and calculating methods cs, radiation detectors and associated computer pro-ORNL-4134] 05 p0703 N68-13952 Computer program, GRIPE-2, for analysis of experi-iental data taken in pulsed-neutron experiments N-1085] 05 p0704 N68-14010 (IN-1005) iplication factors of uniform aqueous ium 233 and 235 colutions of uruni (ORNL-CDC-2) 05 p0621 N68-14259 Steam cooled, fast reactor physics (KFK-627) 05 p0693 N68-14367 owing down time spec owing down time spectrometer technique for ener-nd temperature dependent capture measurements w 30 keV neutron energy in uranium, tungsten, [KFK-631] 05 p0714 N68-14514 Exact solution ansport equation are discontinuity on for energy dependent Boltzmans ion for thermal neutrons near tempera [RM-5300-PR] 07 p1043 N68-16488 lear, neutron, solid state, Research projects on no d theoretical physics [AECL-3009] 07 p1047 N68-16624 Neutron and X ray prod (TR-0158/3220-50/-1) on in focused Z-pinch 11 p1760 N68-20813 Summary of research in reactor and neutron physics [BNWL-472] 11 p1738 N68-20951 Parameters of particle struct function of medium and heavy no [BNL-TR-189] cture in neutron force 12 p1929 N68-22512 - angular thermal neut Lattice physics res [GA-8304] 12 p1934 N68-22690 Summary data on physics, power reactor and nuclear fuels [ORNL-TR-1764] conducted in neutron rol rods, reactor cores, 12 p1910 N68-22833 alysis of deuteron elec-Neutron form fa (DESY-67/21) 12 p1943 N68-22967 13 p2122 N68-24114 (ARSB/S/-R-146) Neutron characteristic using thermal fast ERMIN (ANL-TRANS-356) fast multiplying modia 14 p2291 N68-24717 search in au utroe, solid state, and

14 p2306 N68-24785

Neutron cross section data interpretation by com-puter calculation of self-shielding and multiple scatter-ing effects [GA-8380] 14 p2324 N68-24910 14 p2324 N68-24910 h flux reactor, low energy n physics studies 17 p2933 N68-28980 Crystal structure in h nuclear fission, and neutr [JUL-CONF-1, SUP.] Crystal stru us S sub n method to n of di neutron and other tran (ORNL-RSIC-19) ulations, conference 17 p2936 N68-29213 thod development and transport calculations 17 p2937 N68-29214 ete ordinates methou entron transport car-ation used in high energy neutron transport car-ns for linear electron accelerator design 17 p2938 N68-29221 DTF-4 and GAMLEG codes for phenoport calculations 17 p2938 N68-29224 fication of S sub n method to time dependent n transport equation for pulsed neutron experi-17 p2939 N68-29229 Pu and U oxides, Zircaloy 2, fission products, reac-tivity, and neutron physics in nuclear fuel element research [QR-16] 18 p3121 N68-30830 rence papers on synt of transuranium eleme sis and properties of [JINR-D7-3548] 19 p3319 N68-30864 Techniques for studying ion beams of operating neutron tubes [R-68-ND-11] 20 p3456 N68-32952 20 p3456 N68-32952 clear physics research facility - seutron physics, romagnetic transitions, charged particle reactions, decay, and gamma ray spectroscopy with radiosc-(RLO-1925-111) 23 p4121 N68-36838 NEUTRON SCATTERING Neutron-deuteron scattering lengths and 5-wave phase shifts [LA-DC-8857] 01 p0104 N68-10333 Method of measuri on of neutron scat consuce detectors to ly differential cross secresonance detectors to fix final (JINR-P3-3413) nergy 01 p0104 N68-10360 Neutron scattering by li-eactor-grade graphite in salization study iquid deuterium oxide and differential neutron ther 01 p0092 N68-10469 Double differential neutron so for zirconium hydride and ura n scattering cross sections uranium dioxide reactor [AECL-2915] 01 p0092 N68-10475 Angular distrib ma rays from neutron (USNRDL-TR-67-108) 02 p0243 N68-11182 Spectrometer me ing from light water (BNWL-345) of slow neutron scatter-02 p0245 N68-11498 Cross sections for ne tron scattering by helium 3 and (INFN/BE-67/1) 02 p0246 N68-11523 Elastic and inela d neutron scattering from 02 p0250 N68-11896 Fortran 4 program theo dimensional bulk radiation ([EUR-3636.E] ry and description for one shielding design 03 p0374 N68-12443 e differential cross sections on various met (ORNL-TM-1991) 03 p0394 N68-12579 rements of small-angle ring by iron to determine upin cor (IFA-FN-28) 03 p0398 N68-12747 n section measurements of tor graphite at various tem-04 p0536 N68-12839 ce vibrations formulated in sring using model calcula-constant changes 04 p0548 N68-13418 NYO-2391-451 g cross section WANL-TME-16401 04 p0551 N68-13837 Slow neutrons and I scious, X ray diffrac-ring from liquids INC-50039/T-462/) y protons used to study theory of neutron scal-

05 p0704 N68-13971

AERE-TRANS-1075) 05 p0705 N68-14061 Fortran 4 program for IN-1125] 03 p0707 N68-14194 (AERE-R-5479) 05 p0727 N64-14337 ne depender BNL-116801 05 p0713 N68-16493 ring law studies for binding effects on sky neutron scut [KFK-602] 05 p0695 N68-14681 ocattering and detec-rism and the 05 p0719 N68-14801 Cycl tion, and gamma (UCD-CNL-88) Linear integro-diff lent neutron transpo [NR-805/XXI/TH] ion for time depen 05 p0719 1468-14905 Charge indep UCRL-30197] 66 p0884 N68-13642 tion of neutrons and Energy and angular mma rays to deter (CEX-62.12) 06 p0876 N68-15783 in concrete shielding irradiated with proto (JINR-P16-3514) 06 pORST 7468-14076 ANL-73061 07 p1038 N68-16122 07 p1043 N68-14578 or proce MES-16646 and elastic scattering and copper 07 p.048 MeS-16691 07 p1050 N68-16736 ma rays produced coses in militan, in DL-TR-67-1231 07 p1053 N68-17017 r estimating photon lookage count: ray bombardment of [NASA-CR-93150] 08 p1233 N68-17291 [ANL-7363] 08 p1212 N68-17400 and games ray tra DAC-606591 06 p1213 N68-17617 neutron shells (JINR-E2-35511 09 p1389 N68-18707 [JINR-P3-3564] 09 p1389 N68-1876 LA-3765] 09 p1391 N68-18864 sections for graphin at AERE-8-35747 09 p1391 N68-18896 on scattered seekro relevator 10 p1549 1468-199 Lattice dy produced by GA-8259) ese coluit cartide, 10 m1583 NMA-3 10 p1571 1668-20512 -11 p1751 N er program for culture mechanic for crystalline man [LA-3823] 11 p1741 N48-21172

Triti

NEUTRON SOURCES SUMOR - FORTRAN 4 program for Phileo 2000 for e cross sections including tact Doppler broadening 11 p1757 N68-21448 iculating neutron resonance cron vel-level interference and exact Do [WAPD-TM-518] FORTRAN 4 program for computing crystal phonon ispersion relations, structure factors for neutron in-lastic scattering, and Jacobian matrices 12 p1928 N68-22458 tions using local opti-[LA-3788] 12 p1930 N68-22561 w neutron tram n through polarized crystal with incoherent scattering [BNL-TR-139] 12 p1934 N68-22671 Neutron scattering for spin wave excitation energy changes of magnetite below 119 deg K [KR-122] 12 p1940 N68-22880 Experimental study of magnetic fluctuations in iron ear Curie temperature produced by critical scattering

of cold neutrons (CEA-R-3317) 12 p1943 N68-23001 Inelastic magnon scattering of seutrons in single crystals of hexagonal cobalt [INP-568/PS] 12 p1958 N68-23044

Differential cross sections of elastic p-p and p-d scat-tering at small angles, and real part of p-n scattering amplitude in 1 to 10 GeV energy range [JINR-P1-3641] ents of neutron scattering from Direct measurem

[EUR-3903.E] 14 p2302 N68-24457 Energy dependence of cross section for fast neutron

reactions [INR-830/I/PL] 14 p2304 N68-24649 stron scattering cross section measurement in since energy regions with spin determination of

[CEA-R-3360] 14 p2307 N68-24837 Neutron cross section data interpretation by com-uter calculation of self-shielding and multiple scatter-

ing effects [GA-8380] 14 p2324 N68-24910 Elastic scattering cross sections of high energy eutrons from sitrogen, oxygen, and argon 14 p2311 N68-25040

Thermal neutron scattering cross section data -

(JAERI-4043) 14 p2312 N68-25064 Slow neutron scattering and rotational dynamics of

14 p2313 N68-25080 Neutron scattering cross sections of uranium 233, uranium 235, and photonium 241 from 1 to 30 eV [UCRL-70826] 14 p2315 N68-25226

Introduction to neutron transport equation theory [AEEW-M-676] 14 p2316 N68-25255 Scattering of high energy polarized neutrons from

14 p2317 N68-25314

one for uranium oxide.

14 p2317 N68-25353 etic properties on scattering measure

(ORO-3764-1) 14 p2274 N68-25437 ar ferroelectric transition in

m phosphate 15 p2533 N68-25738

Experimental measureme subthermal neutrons on intered copper single cryst nt of small angle scattering plastically deformed cube 15 p2513 N68-25860

stron velocity selector measurement of neutro oring in graphite, heavy water, and beryllium oxid 15 p2518 N68-26356

[GA-8283] Methods for calculation of Doppler work functions ujv-19321 15 p2523 N68-26558

Neutron scattering, criticality, control, fuel element, and shielding studies for nuclear research and test reac-(BNWL-485) 15 p2506 N68-26942

Legendre exponsion or gular distributions of elast [NAA-5R-12533] pefficients for theoretical an-ically scattered neutrons 16 p2718 N68-27044 ering resonances in fis-

16 p2718 N68-27124

erent scattering amplitude is in lead and bismuth, and 17 p2926 N68-28550

Charged particle reactions and scattering, neutron attering, and activation analysis in nuclear research [NP-17434] 17 p2933 N68-28985

Liquid water, heavy water, and solid water dynamics from inelastic scattering measurements of epithermal

[BNWL-SA-1535] 17 p2940 N68-29312 Neutron-neutron scattering length determined by easurements on reaction T/d,He-3/2n

18 p3127 N68-29729 Complex angular momentum theory for elastic roton and neutron scattering by carbon and nitrogen

[TUEP-68-12] 18 p3133 N68-30272

neutron counters and interactions Design and operation of dosimeters and neutron-matter [NP-17349] nteractions 18 p3075 N68-30339

Neutron transport appro breeder reactor developme [WAPD-TM-690] ns used in light water ment program 18 p3134 N68-30468

Inelastic and quasi-elastic eutron scattering from methane in argon [9GAE-PH-65/1968]

18 p3137 N68-30705 Inelastic neutron scattering molecule dynamics in crystallo [INP-601/P] measurements of water

18 p3031 N68-30779 Inelastic neutron scatte rouge in solids and liquids n scattering studies of molecular

18 p3140 N68-30821 Slow neutron scattering and molecular dynamics of (EUR-4037.I)

19 p3329 N68-31383 Determining dynamic characteristics of liquid-gas systems by coherent cold neutron scattering at critical

KFKI-10/1968] 19 p3331 N68-31547 Energy distribution measurement of neutrons scat-red by trivalent rure earth ions in octahedral crystal

[SM-104/5] 19 p3331 N68-31568

Neutron scattering investigation of dynamics of criti-cal state in iron [KFKI-8/1968] 19 p3332 N68-31586

inelastic neutron scattering cross sections for gase-ous and solid methane [INP-608/PS] 19 p3334 N68-31816

Phonon dispersion relation m um oxide extended by neutron is [IN-1129] easurements for berylli-selastic scattering data 19 p3356 N68-32112 Elastic scattering of 14 MeV ne

neutrons by deuterons 20 p3543 N68-32552 Energy distribution of neutrons scattered from single crystal of terbium studied as function of momentum

20 p3568 N68-32854 Magnon dispersion relation in rare earth metals from lastic neutron scattering

20 p3568 N68-32855

m and neutron scattering on deuterium and carbon targets

20 p3546 N68-33050 chopper for polarized sk slow neutrons 21 p3739 N68-34145

e neutron scattering for studying magnons in nd terbium-10 percent holmium 8] 21 p3754 N68-34154

Neutron cross section measurements and other nuclear research activities of EURATOM (EANDC-/E/-89U) 21 p3739 N68-34155

EANDC-RE-9-9-12
Bevatron and spark chamber measurements or eutron-proton scattering from 6 to 30 GeV/c
22 p3924 N68-34992

Angular correlation of inelas and gamma rays from carbon 12

22 p3926 N68-35032 Neutron inelastic scattering for metal nyornor-ranium carbide at room and cryogenic temperatures 23 p4116 N68-36540 (RPI-328-101)

KN total cross sections with con 23 p4128 N68-37028 Formulation of three body scattering problem and eutron scattering by deuterons

23 p4:35 N68-37268 Neutron elastic and inelastic scattering from inco 5 and gamma ray production cross sections from 1.0 to 7.6 MeV 24 p4305 N68-37463

ic scattering cross section studies of in-24 p4306 N68-37498 allation, and application of Van de tatic accelerator, and inelastic scatter-from iron 56 and chromium 52 24 p4310 N68-37650

Spectrometer design for thermal neutron inelastic aftering measurements from single crystals NR-P-898/II/PS] 24 p4313 N68-37778 scattering measures [INR-P-898/II/PS]

Energy distribution of monophonon coherent scat-tering of neutrons in ferromagnetic crystals [FTD-MT-24-8-68] 24 p4332 N68-37996 Phase shift analysis of n-n scattering at energies near 20 MeV

[JINR-E1-3899] 24 p4317 N68-38028 **NEUTRON SOURCES**

Flux density distribution, dose shielding effectiveness of 14 MeV ne [ORNL-TR-1757] 01 se equivale V neutron generator 01 p0110 N68-10595

Preparation and sintering of photonium-beryllium alloy neutron sources [BARC-294] 03 p0372 N68-12217

[EANDC-63/U/] 03 p0395 N68-12633 Neutron flux and gamma ray source edit computer rogram for design and analysis of radiation shields in nuclear rocket systems [NASA-CR-91535] 04 p0540 N68-13507

altiple neutron capture in nuclear mative techniques for producing heavy eleme [LA-3738] 05 p0704 N68-14041

Project study for intense neutron generator - high current proton linear accelerator, high flux thermal neutron facility, and meson facility (AECL-2750) 05 p0642 N68-14338

Neutron superbooster physics including core power kinetics under conditions of varying reactivity in response to different lengths of linac pulse [AERE-R-5205] 05 p0697 No8-14988

Comparative data on critical man, neutron spectra and neutron pulses source measurements in Sneak and Zero Power Reactor 3 [KFK-626] 06 p0872 N68-15034

Application of sealed tube neutron generator to etermination of copper and silicon in aluminum alloys

[AERE-R-5616] 06 p0821 N68-15152 Nuclear structure studies with radiative neutron cap-

[KFK-616] 07 p1042 N68-16365 Energy dependence of prompt antineutrinos for eutron-induced fission of plutonium 239 and plutoni-

[FOA-4-4318-22] 09 p1393 N68-19008 Principles of neutr [KN-68-71/R/] on analysis 09 p1343 N68-19028

Simple semiemp anisotropy of nuclear [ANL-TRANS-548] correlation for angular by neutrons 09 p1393 N68-19054

tron spectrometer for stopic neutron sources 10 p1568 N68-19966 Stilbene crystal, fast determing energy spectra of is [MLM-1422]

Neutron and X ray production in focused Z-pinch [TR-0158/3220-50/-1] 11 p1760 N68-20813

Biological applications and effects of neutrons and [NSTIC-TRANS-1840] 12 p1823 N68-22443 ation of perturbing effect of constant neutron source in reactivity measurements [NAA-SR-MEMO-12290, REV.]

13 p2112 N68-23058 Techniques for calcu attenuation in shields [DASA-1892-3] slating neutron and gamma ray 13 p2115 N68-23393

Ages for D-D and D-T neutrons in water and tung-(NASA-TN-D-4581) 14 p2292 N68-25058

Neutron decay and spectrum analysis by computer calculation for fast nuclear reactors under neutron [CEA-R-3351] 14 p2293 N68-25166

Liquid Jet Super Flux Reactor /LJSFR/ - new con-cept for obtaining superhigh neutron fluxes [LA-DC-9413] 16 p2710 N68-28287

Moderator material vacancy effects on thermal eutron diffusion constant examined by pulsed source sethod 17 p2913 N68-28429

Accelerator target neutron yields studied in relation to belium burning and neutron production in cores of 17 p2966 N68-28497

A-802

Fission oquival [BNL-Neut Nucl Cf 25

LA-D Prop (LA-DO Plutor calibrati [BRL-1-

1 (JUL-5) NEUTRO Effect KAPL effects s

Comp

EUR-3 water me

CAR-8

Fortre

Buckli

ramete es of i ABCL-2

Instrum for safety ments, an IDO-172

17 p2932 N68-28938

d spectra on function of penetration study 17 p2934 N68-29053

Tritium to helium 3 docay effects on crystal struc-tures of tritide targets for neutron generators. [NP-17412] 17 p2932 N68-28942 FORTRAN contines for analyzing obtained from epic (AWRE-O-9/68) al recon propertional comments of propertional comments of propertional comments of properties of pr 07 p1039 N68-16175 netry in timue on of Wigo d dosis doses in graphite ICEA-R-32261 ENL-12452] 19 p3210 N68-31645 07 p1024 N68-16176 (UJV-1931) ions of spectral indexes on spectra 07 p1025 N68-16216 Transport theoretical of thermal and epitherma on generating tubes 19 p3259 N68-31670 Neutron pro ser electron accelerator as Nuclear-pumped la [GA-8485] on transport of fission Air-ground in 19 p3289 N68-32108 neutrons through at (ORNL-TM-1819) 07 p1041 N68-16360 [GA-8280] Cf 252 sponts destructive dete [LA-DC-9552] eutron sources for non-ble materials 20 p3531 N68-33087 in energy spectru 10 p1462 N68-19656 ction by dense plasma Properties of n 238 and beryllium, and [LA-DC-9327] 2u p3559 N68-33438 hydrides 11 p1757 N68-21399 (GA-8085) thematical models of stellar evolution through ar fusion detailing neutron production and capes generated by high Attenuation of a 12 p1925 N68-22352 energy protons in iron aq (NRC-TT-1278) 22 p3958 N68-34937 Iterative unfolding m fied to determination phere and activation as RHEL/R-154) m berylli n neutron sources as secondary [BRL-1401] 22 p3929 N68-35452 12 p1928 N68-22449 Computer program reduction from hydro predicting theoretical neutron ogen isotope reactions 22 p3930 N68-35515 Measured and calcul spectra in HIFAR react (AAEC/TM-408) ion rates and neutron died by means of thin I (FTD-HT-23-821-67) SC-RR-68-19] 12 p1905 N68-22452 eter with sandwich diode for spec-Thermal neutron specium test reactor 100 be chapper of Fermi type [SRRC-21/67] neasurements at urani-ile using slow neutron tral analysis on neutron sources (JUL-522-RG) 22 p3878 N68-35654 Analysis of X ray spect capture in cesium inchops [ANL-TRANS-604] NEUTBON SPECTRA 12 p1907 N68-22607 Effect of physical parameters on shape of neutron spectrum fission peak in hydrogen moderated reactors [KAPL-M-6714] 01 p0089 N68-10124 angular thermal neutron ice physics re [GA-8304] 12 p1934 N68-22690 Fast newtron spectra Neutron spectroscopy by foil activation in radiation lysis for fast neutron attenuati GA-85513 Approximation with the control of th 01 p0105 N68-10408 13 p2120 N68-23887 GAFGAR SC-DC-67-15721 reasurements in angular and following capture of t, and calcium pactes and group GA-7542, V. 1] Asymmetry and spectr stribution of neutrons tra analysis in coupled negative muons in silicon, sulfu [CAR-882-22] NASA-TT-F-117961 Properties of m 14 p2289 N68-24522 ol p0110 N68-10599 ng combined codes for hermal reactors 14 p2291 N68-24779 [LA-DC-9327] Computerized meth er program for calculating m parameters from irradiated NASA-TT-F-116711 NUS-P-213) Reactor cross section californium chain fo [PEL-148] 01 p0093 N68-10629 tion used for evaluat-DP-MS-67-1111 14 p2292 N68-24901 (EUR-3350.E) 01 p0096 N68-10939 theory code used after nalysis of uranium rods 14 p2292 N68-24987 Error correction to spectral and lattice stru (GA-8462) n of experimental data on [RT/F1/67/15] 02 p0238 N68-11538 amme ray measu a, sodium, and the nt on thermal seutron entaminated water, and NL-12268) 14 p2311 N68-25051 (DP-MS-67-10) 03 p0378 N68-12613 AD-6722251 of neutron spectra for Neutron transmission and g meets on samples of natural as [JINR-P3-3097] oma ray yield measure-enriched erbium 03 p0395 N68-12629 CONF-680307-14) 14 p2313 N68-25133 n analysis by compute eactors under neutro Energy and angillar of hind flat iron plates of w [FTD-MT-24-253-67] distribution measure-r near absorbent 04 p0536 N68-12838 [CEA-R-3351] 14 p2293 N68-25166 Neutron spec flat surface abso [IAE-1216] in water near cod EUTRON SPECTROM e dependence analysis of neutron distributionalised source in confined moderator, and seutron a determination for arbitrary times 14 p2315 N68-25167 G4 p0536 N68-12840 ingy for cross sec TICL 494-RX1 14 p2294 N68-25265 ile crystal energy spectra in d thermal neutrons in (light lechant) g by sail reactivity 04 p0537 N68-12846 14 p2296 N68-25419 (RT/FI/67/30) n on rate and distribues of 19 ele 15 p2313 N68-25885 [AECL-2778] 04 p0538 N68-13373 ve as function of atnd spectra, proton and or reactions 05 p0705 N68-13953 [LA-3752] interactions 15 p2463 N68-26810 n cross sections as cattering, and nuclea (SR-5) ments and calculating d weapon shielding 05 p0690 N68-13955 15 p2525 N68-26827 N-1143) upy described by solu EEA-2-33/61 ion to Fredholm SC-RR-67-746) 15 p2526 N68-26872 05 p0664 N68-14894 16 p2752 N68-2730 on spectra to real

05 p0664 N68-14897

06 p0872 N68-15034

in on critical man, neutron spectra source measurements in Seesk and

[AERE-R-5364]

ISC-T-44-1514]

16 p2733 N68-28292

17 p2876 N68-28394

17 p2935 N68-2910 17 p2950 N68-29162 into calculated by ured fast neutron 17 p2937 N68-29217 d experimental transport seutron spectra emergent less deb miste 17 p.2938 N68-29222 18 a3114 N68-30142 rs in fast nuclear resc-ts questrain facility 15 p3119 N68-30725 19 p3325 N68-31100 d in upheres of deplets 19 p3326 N68-31156 a sections 20 p3531 N69-330 ction by dense plan 20 p3551 7668-33547 e energy depends 21 p3734 168-33749 21 p3723 N68-33891 21 p3743 N68-34555 ron counter data con-surement 21 p3744 N68-34581 of fast neutron bi-24 p4321 N68-38315 rticle tel 01 p0066 1468-10847 05 p0662 N68-14537 06 p0877 NAB-15884 of fast, 90 deg helium 3 07 p0994 N68-16123 using neutron flux in a-recoil spectrometer 0 p1203 N68-17324 ing m 11 p1701 N68-21747 total magazinabi of 11 p1743 N68-21803 stry for chapper 12 p1905 N68-23453 13 p2066 1668-23237 A-803

d cross

tron-nuclei colli-

utron transport in

09 p1394 N68-19068

SUB

An oue S [P-36 Ta So Sei

NEWT

Hy

[ARI

EWI Qu [NAS low d

LAB

Net techn [NAS NEWTO Cal News [NAS NA NEWTO

of var Cor 1800-(NAS AP (AD-

NEWTO Syn sions viscos (NAS

disk w

ace relations for high energy neutron cle interactions se drum store for neutron time of flight ion process in time for graphite and beryllium [AERE-TRANS-1084] (AERE-M-2016) 13 p2069 N68-23717 14 p2289 N68-24570 14 p2320 N68-25559 utron scattering from Optical mode Direct mes (EUR-3903.E) 14 p2302 N68-24457 (UCRL-50359) 15 p2512 N68-25692 Design and perfo of time-of-flight spectrome-[JUL-518-RG] 17 p2913 N68-28428 ter with neutron chapper [NIJS-R-515] 14 p2257 N68-24920 sttering, cross section, 15 p2516 N68-26050 Activation cross section s for neutron reactions using [GA-8280] 17 p2935 N68-29160 metrod to determine energy dependent spectra and integral parameters of thermal on and thermal reproduction factors. 15 p2523 N68-26612 ORO-3346-18] Integral meti newtron data for fin 15 p2522 N68-26555 ark chamber neutron spectrometer design and 21 p3734 N68-33749 SRS-TR-31481 15 p2469 N68-26620 odd mass nuclei [SGAE-PH-64/1968] Neutron spectrometer measurements and powder diffraction patterns of alpha-FeOOH [REFT.-578/PS] 18 p3131 N68-30076 EUTRON TRANSMUTATION U NUCLEAR REACTIONS 16 p2723 N68-27740 NEUTRONS
NT COLD NEUTRONS
NT FAST NEUTRONS 16 p2706 N68-28109 Neutron time-of-flight sp ectrometer using scintilla-Swimming pool reactor for gar neutron capture [IEA-133] mma ray production by 18 p3075 N68-30346 PHOTONEUTRONS THERMAL NEUTRONS [NYO-3914-1] 17 p2912 N68-28355 ion detection system NYO-3914-2] ros spectrs and neutrons by inter-18 p3076 N68-30349 (EUR-3620.E) 01 p0101 N68-10024 17 p2927 N68-28638 Design of pulse height discri-mation for neutron spectrom or with time comge, retrieval, and dis-Delayed neutro 235 and uranium [LA-TR-67-16] n of thorium 232, uraniu 18 p3077 N68-30500 play of data from neut UCRL-50400, V. 11 01 p0113 N68-10786 18 p3133 N68-30325 studies of inelastic in light nuclei 02 p0245 N68-11480 Neutron-proto [JINR-P4-3431] [REPT.-898/II/PS] 20 p3480 N68-33290 Neutron data co ties of neutron data [EANDC-56/U/] 18 p3138 N68-30782 spectrometry 23 p4183 N68-36958 Computer progra neutron diffusion eq [KAPL-M-6728] 03 p0430 N68-12598 ICEA-R-34671 NEUTRON STARS Analytical results from neutron slowing down theory of application to checkout of RBU slowing down rou-**IBM 360 comp** of neutron diffusion code (NASA-TM-X-60773) 03 p0397 N68-12692 04 p0572 N68-12931 (BNWL-307) 19 p3248 N68-31587 [AAEC/TM-429] s with neutrons in by hydrogen and helideuterium bubble o [SLAC-PUB-347] Neutron product on generating tubes 19 p3259 N68-31670 05 p0714 N68-14550 07 p1075 N68-16276 Development state of neut beam tubes in nuclear reactors [AERE-TRANS-1074] on guides suitable for Neutron polarim [REPT.-897/I/PL] 19 p3280 N68-31815 Relativistic sp (NEIC-RR-28) of neutron stars 09 p1419 N68-18816 Production of ch rutron star 10 p1591 N68-19800 [NASA-CR-93728] Temperature effect of coe ic ray neutron com-[ORNL-TR-1924] 20 p3545 N68-32954 06 p0902 N68-15061 Absolute cross sections rays from nitrogen 14 for in [ORNL-TM-2267] for production of gamma 13 p2146 N68-23676 le effect according to Neutron component la schooser measurements -Partial differential eq for gravitational col-21 p3741 N68-34413 lapse of seutron stars [UCRL-TRANS-10206] 06 p0902 N68-15065 Peripheral processes in pion n 14 p2347 N68-25224 ucleon scattering 22 p3925 N68-35024 X ray photon fluctu ments for super-Cross section set se lithium hydride, uranium, a [NAA-SR-MEMO-12440] 07 p1038 N68-16110 [NASA-TM-X-63331] 21 p3773 N68-34690 OKNL-TM-22521 22 p3934 N68-35772 NEUTRON THERMALIZATION iquid metal fuel reactor to distribution on neutron autron scattering by li 08 p1213 N68-17538 reactor-grade g malization study [GA-7959] n of 14 MeV neutron yield for establishing optimal targe [NASA-TN-D-4840] 23 p4099 N68-36055 and accurate tect assembly of alpha (SC-RR-67-346) 01 p0092 N68-10469 er of Am242 through Spontaneous Am241/n, gamm (IFA-CRD-34) 09 p1386 N68-18473 [AEEW-M-752] 23 p4125 N68-36960 ical rod determined by 02 p0238 N68-11598 Methods for co utron resonance mes-09 p1387 N68-18483 (CNAEM-51) dictions for materials scopic cross sections 10 p1554 N68-19587 24 p4316 N68-37958 Neutron ab [JPRS-43682] 04 p0535 N68-12835 with anisotropic el [KAPL-P-3340] m solving b Paleomagnetism of Plio-Pleistocene Lousetown for-ation lava flows in Nevada ng a priori data on kin convergence of iteratio timing technique used producing neutrons 10 p1562 N68-19588 13 p2056 N68-23087 ORNL-P-32061 04 p0536 N68-12837 ert flooding in White Mountains of Nevada and mials and associated malization problems 04 p0536 N68-12842 ulting from neutron interactions with chioris [GA-7829] California [TR-68-31-ES] 15 p2460 N68-26201 10 p1493 N68-20475 NEW MEXICO Tabe sic ray neutron data 04 p0537 N68-12844 Beta activity measureme at New Mexico during 1966 [LA-3663] ts in air and precipitation and neutron self-ides 10 p1524 N68-20360 in synthesis of heavy dishing correct [JUL-503-RX] 06 p0882 N68-15038 Apollo program to Las Cruces, New Mexico [NASA-CR-89946] m thermalization (FEI-64) 14 p2301 N68-24363 18 p3191 N68-29982 ing propane bubble 09 pl397 N68-19306 LINE-P1-36771 14 0 N68-24475 ctor elementary cells 10 p1557 N68-20435 cover, and visit 1951-1967 (ECOM-52021 [REPT-821/9A/PR] tor-booster targets on accelerator as 23 p4092 N68-36188 238 and beryllium, and hydrides [GA-8085] earch reactor 14 p2291 N68-24620 [GA-8087] II p1757 N68-21399 [AD-667909] 24 p4280 N68-37867 NEW ZEALAND 14 p2306 N68-24744 12 p1925 N68-22293 netic fields in New Zea-Magnetic surveys of geomage land at epoch 1960.5 n for thermalization of ng from heavy water GA-6345] (CEA-R-3274) 14 p2295 N68-25319 12 p1928 N68-22447 01 p0055 N68-10174 ummary for New Zeaal neutron diffusion ite-water system at AERE-TRANS-1005 14 p2319 N68-25443

13 p2107 N68-23559

14 p2271 N68-25065

14 p2193 N68-25098

15 p2480 N68-25906

15 p2481 N68-25956

16 p2678 N68-27285

16 p2743 N68-27324

16 p2632 N68-27786

16 p2684 N68-28150

17 p2898 N68-28378

electrical resistivity of ficrent temperatures 18 p3068 N68-29910

properties relative to nd Ni-Cr, and liquid Fe-

18 p3089 N68-30037

senis on Al, Cu, Ph.

18 p3089 N68-30067

ciency parameters for ficial meteors 18 p3165 N68-30244

ntial drop for iron and I solutions 18 p.3028 N68-30486

18 p3094 N68-30579

ady atomic physics of

19 p3276 N68-31252

mple high energy spal

20 p3541 N68-32335

wder into rods, sheets, intered billets 20 p3485 N68-3254) stion of nickel, cobalt limation of systematic components

compounds 0 p3420 N64-32607

20 p3500 N68-32870

20 p3570 N68-32880

20 p3431 N68-33315

nd kinetic parameters ickel and hydrogen on

21 p3647 N68-33678 e duri

21 p3703 N68-33948

21 p3651 N68-34298 f sintered sichel elec-

21 p3627 1468-34301

21 p3754 N68-34477

.

of precedy

prestrain on tensile pro and NiTi in temperature

ives on polycrysta lation of high pres

e energy in nickel

offects on fatigue tests of high nd nickel NICHBOME (TRADEMARK) News release on Cosmos-166 solar activity data col-Strengthening mechanisms in dispersion hardened ichrome examined over temperature range 70 deg F lection and processing Sputtering method for fabricati nickel contacted solar cells [NASA-CR-94768] 01 p0132 N68-10895 to 2000 deg P (D6-19773) 18 p3088 N68-29911 Preliminary evaluation of Apollo 4 spacecraft mis-NICKEL nion performance [NASA NEWS RELEASE-67-294 Field modulation studies of de Haas-Van Alphen ef-fect in apherical nickel crystals [IS-T-169] 01 p0123 N68-10471 Nickel single crystal ed action of stress 02 p0270 N68-11047 Prelaunch news release on Pioneer C spacecraft mistests and theory for nickel and resile stress and at compact and Young and shear moduli of magnesium oxide poroty and magnesium oxide porosty-nickel composit measured at low concentrations of included phases [TR-1001/2250-10/-7] aion objectives and specifications [NASA NEWS RELEASE-67-293] 02 p0270 N68-11048 NEWS MEDIA 01 p0076 N68-10560 int bending tests to determine relative duc-Articles on develop ous Soviet news media [P-3600/9] nts in cybernetics from vari-High pressure effects on their resistance of aluminum, gold, pla room temperature to 1300 deg K [COG-1198-465] ermoelectric power and slatinum and nickel from 03 p0325 N68-12108 01 p0125 N68-10800 NASA-CR-941111 Emission line shift produced by argon and helium as observed in Fe, Cr, Ni, Ca, Cu, Al [AFOSR-67-2286] 02 p0175 N68-11244 11 p1789 N68-21297 Soviet-bloc research in astronomy, meteorology, oceanography, terrestrial geophysics, and upper atmosphere and aerospace science /review of news items Ozrosion of nickel and nickel alloys by fluorine, ranium hexaftuoride, and nelected votatile fission roduct fluorides at 300 dec. 22 p3865 N68-34835 ANL-7241) 03 p0311 N68-12163 oviet articles on fluid and gas mechanics [-181] 22 p3860 N68-35385 n to optical model study by measuring [FTD-HT-67-181] ange 150 to 370 deg ARL-MET-501 reaction cross se (CEA-R-3091) NEWTON PRESSURE LAW 03 p0396 N68-12639 Corrosion of nickel and nickel-copper alloys in tropi-Hypersonic flow of ideal gas over blunt power law bodies in Newtonian limit [ARL/A-287] [NRL-6592] 04 p0519 N68-12867 14 p2182 N68-24975 NEWTON-RAPHSON METHOD Carbon monoxide a sickel, and iron film so n heterogeneity on thin Quadratic Newton-Raphson iteration techniques for umerical solutions of Keplers universal transcendental 06 p0786 N68-15043 Interstitial compound cathodic oxygen reduction fuel cells [NASA-CR-92582] transition metals for taline hydrogen oxygen [NASA-TM-X-63072] 04 p0580 N68-13770 Large elastic deforma low doubly curved shells s and snap through of shal-06 p0793 N68-15859 Corrosion testing of nickel, co oy, borides, and other fuel cell c cobalt, nickel cobalt al-il catalyst samples for ac-11 p1792 N68-20637 Infrared absorpti id Ni at 4.2 deg K Deflection and vibration at critical speeds of shaft-earing systems using Newton-Raphson method in tivity in oxidation of [NASA-CR-92885] 07 p0956 N68-16427 bearing systems usi computer program d elastic scattering ypersonic reentry of NASA-TN-D-46661 20 p3607 N68-33566 or p1048 N68-16691 Newton-like method and applications to Euler-Lagrange equation [AD-672929] fic polarization test 22 p3902 N68-35800 (NASA-TT-F-11770) Newton-Raphnon and gra-technique for solution of opt [NASA-TR-R-293] nt parameter correction il control problems 23 p4090 N68-37073 Hot pressing of reft for holding molten r [AFIT-TR-67-6] 08 p1187 N68-17906 naterials to form cracible d boryllium at high tem and bonding of sickel apphire 09 p1350 N68-18303 RFP-882] NEWTON SECOND LAW Calculating rocket vertical flight performance usin Newtons law to compute acceleration [NASA-TM-X-52390] 07 p1086 N68-1689 Neutron diffractingle and polycrys [IFA-FN-33] 09 p1352 N68-18705 07 p1086 N68-16891 ckel using sod Newtons second and third laws for basic concepts of trust, and fundamental design criteria for rocket en-10 p1533 N68-19798 NASA-TM-X-523891 ns in stable isotopes of 10 p1585 N68-19834 NEWTON THEORY 11 p1646 N68-20789 Modified Newton method for trajectory optimination of variable mass point in gravitational field [FTD-HT-67-447] 02 p0228 N68-11314 Nickel 2 and cobalt 2 completed aniline exes of amine N-oxides 11 p1652 N68-21245 Thermal description techniques for determining adsorption of carbon monoxide on nickel [DI-82-0707] 11 p1655 N68-21500 Computer-calculated 1800-2000, for nine pris ophemeris number 28 [NASA-CR-90430] Newtonian ephemerides, ipal planets - Development 02 p0266 N68-11595 gle crystals at low teminternal (peratures [TR-9] Application of Newton method to Euler- Lagrange equation [AD-645005] 10 p1547 N68-20205 Crystal field heat 11 p1775 N68-21696 bility of thorium diox-NEWTONIAN FLUIDS calley acrap and statistication of stable colloidal disper-etic responses and Newtonian 12 p1885 N68-21852 Synthesis and modifications with strong magnet ects on nickel surface, am-surface, and work function BM-RI-7178) Hydrogen and oxygen el onia catalysis on tungster [NASA-CR-91684] 05 p0699 N68-14205 I pisses 12 pisse N68-22201 measurements on tungs [NASA-CR-94332] Oscillating viscous flow of incompressible isothermal Newtonian liquid in annulus between two long concen-tric tubes ultaneous deposit nd soiled sickel c 12 p1862 N68-22356 12 p1891 N68-22915 laothermal flow of Newtonian packed beds of uniform spheres in fluids through conical Energy band structure of ferr magnetic nickel 13 p2130 N68-23069 18 p3059 N68-29803 Electroplated nickel coatings for protecting plattic recraft components from damaging effect of rain tron diffraction stod [NASA-CR-96786] on on surface parallel to rotating impressible Newtonian fluid flow-Fabrication codes for space batters of WF-FE-W-44-39) back AFML-TR-67-356] 13 p2086 N68-23202 18 p3062 N68-30108 al reflecting elements 13 p2081 N68-23437 Use of various me INASA-CR-943771

High vacuum qutte and nickel contacted soi [NASA-CR-94715]

(D-MAT-143)

ques for aluminum

14 p2191 N68-24615

[KFK-704]

id particles suspended

23 p4043 N68-36062

onian fluids and

actitutive relation of order of the state of

SU

un [F

lo

PN.

唐

NICI

ES (E

Solid state diffu m nickel system sion in zirconium copper and zirconius, and study of intermetallic com-TH/68/28] 23 p4078 N68-36926

Anomalous surface pho ctric effect in nickel 23 p4157 N68-37281 e of nickel and cobalt single crystal 24 p4266 N68-37445

Active sites for catalytic decomposition of carbon amortide on nickel

24 p4330 N68-37553 Absolute neutron cross sections for nickel and silver 24 p4310 N68-37616

Diffusion kinetics of iron and nickel in single crystals magnesium oxide 24 p4212 N68-37625

Chemical reaction at solid nickel interface with moint lithium nitrate analyzed at 400 deg and 500 deg C 24 p4213 N68-37629

Temperature and glass substrate effects on according of nickel films deposited on glass plate 24 p4262 N68-37983

of hydrogen and deuteri-

24 p4217 N68-37984 Gas adsorption and thickness effects on ther-indynamic properties of thin nickel films exposed to

24 p4332 N68-37985 Operation of nickel skeletal catalyst based hydrogen

[NIC-TRANS-2617] 24 p4200 N68-38071 Electrical resistivity and photoelectric behavior of accoum-deposited nickel films measured after anneal-

24 p4333 N68-38119

NICKEL ALLOYS
NT HASTELLOY [TRADEMARK]
NT INCONEL [TRADEMARK]
NT KAMACTIE
NT MONEL [TRADEMARK]
NT NICHROME [TRADEMARK]

Effect of magnesium, cerium and zirconium residual dditives on nickel plasticity 01 p0075 N68-10332

Morphology, fine structure, and crystallography of arious martenaitic transformation products in iron-01 p0075 N68-10491

Proporation of irradiated high temperature service nickel base alloys for determination of microstructural relation to physical properties, testing criteria, radia-tion effects and history [BNWL-SA-1112] 01 p0077 N68-10698

Electron microscopic studies on nickel structures strengthened with thorium oxide [AFOSR-67-1577] 02 p0221 N68-11312

Local atomic arrangements and effects of cold work-ing on degree of short-range order in nickel-10 atomic percent tungsten alloy

02 p0223 N68-11803 Corrosion of nickel and nickel alloys by fluorine, uranium hexaftuoride, and selected votatile fission product fluorides at 500 deg C

ANIL-72411 03 p0311 N68-12163 lonic diffusion in so processes of nickel in a processes of nickel in a n in solid metal oxides, and diffusion kel in nickel oxide films and oxygen in ide and zirconium oxide 33] 04 p0466 N68-13251 AFOSR-67-2633)

es of spherical precipita-ckel silicon alloys 05 p0674 N68-14429 Optical dislocation analyses of tions in copper cohalt, and nickel si 18-TRANS-72]

Corrosion of sta alloys in high temp [EURAEC-1895] el and high nickel content perheated steam 05 p0675 N68-14480

Static corrosion (n nickel chromium alloys (EUR-3367.F)

05 p0678 N68-14780 iron alloy martemite process 06 p0852 N68-15048

al and physical propertie tanium alloys used in si-

06 p0853 N68-15309 electrolytic techniques for separating all in nickel alloys containing up to Molten salt ch nickel and cobalt

BM-RI-7082] 06 p0789 N68-15555 ation of nickel base alloy TAZ-ial for advanced gas turbine en-NASA-TN-D-43901

06 p0855 N68-15637

High temperature tensile properties of TD nickel ter mechanical working and recrystallization treat-

[NASA-CR-92510] oys tested for suitability as roine blades Oxidation resistant all

NASA-CR-930 08 pl185 N68-17591 ng and bonding of nickel stal sapphire 09 p1350 N68-18303 ditives effect on wettin

studies on unaltered, and INASA-CR-72367] 09 p1352 N68-18533

Stress-strain corrosion of nickel chromium alloy syste [COO-1319-57/Q-16/] n cracking mechanism in iron 09 p1353 N68-19073

Resistivity and specific heat of solid solutions of nickel in beryllium, and magnetic resonance of dilute alloys of copper-manganese

10 p1576 N68-19695 nts of band structure of m alloys oemission measures agnetic nickel alumi illoys 11 p1769 N68-20780

Effect of aluminum on a

11 p1769 N68-20782 Stacking faults measured in cold-worked filings of face centered cubic silver and nickel alloys [BARC-299] 11 p17[1 N68-20893 11 p1711 N68-20893

Epsilon and delta phases of alumi in liquid state [BARC-301] m-nickel systems

11 p1714 N68-21125 Hydrogen accumulation rates within thick walled tubes of iron chromium and iron chromium nickel al-loys exposed to high pH high temperature pressurized water containing disnolved budrogen water containing (WERL-1114-3) II p1714 N68-21195

Disk eractions in Iron nickel [COO-1676-1]

11 p1715 N68-21350 Crystallography of reverse marte itic transforma

12 p1886 N68-22170 tation process in gold 12 p1886 N68-22209

Carbonyl and evapo quilibria determination ration processes for phase of iron-nickel alloys at low mobility temperatu [MLM-1381/TR/] 12 p1838 N68-22624

e of nickel and nickel alloys to Corrosion resis 12 p1891 N68-22915

Experimental confirmation of particle coarsenitions whenever mickel base alloys ntion of Lifshitz-Wagner ng using data on precipitate [CALT-221-39] 12 p1893 N68-23005 Properties of electrical conduction in nickel-iron thin films

13 p2134 N68-23522

dynamic properties for 13 p2083 N68-23826

High temperature X ray dil structures in TINi intermetalli [AD-667398] fraction studies of phase compound 13 p2085 N68-24149

Corrosion problems in use of austenitic chrome-nickel-iron in nuclear reactors and irradiated fuel treatment plants (BNWL-TR-25) 14 p2271 N68-25079

ics of copper nickel al-14 p2272 N68-25109

ion resistant steels and nickel base alloys (D-MAT-144) 14 p2273 N68-25289

rous oxide to copper in vapor mixtures and ef-14 p2218 N68-25300

or nickel alloy Rene 41 and metallographic eval panel with beryllium inne [AMMRC-CR-66-02/7]

15 p2474 N68-26570 Selected papers from symposium on phase forma-ons and transitions of titanum-nickel and other as 16 p2676 N68-27267

[NOLTR-68-16]

16 p2676 N68-27269 ctron microscopy and X ray diffrac-se transformations in thin films of 16 p2676 N68-27270 Internal friction elastic moduli of titanium-nickel easured as temperature function 16 p2677 N68-27271

16 p2677 N68-27273 nickel determined by le tests 16 p2677 N68-27274

Magnetic permeability, Hall coefficient, electrical sistivity, and critical range of titanium-nickel transi-16 p2677 N68-27275

Soft X ray spectroscopy of titanium-nickel and nickel-alloy systems 16 p2677 N68-27278

rature transformation of remarteneitic structure 16 p2678 N68-27282

ility of nickel alloys to sap-16 p2678 N68-27319

Grinding aids for p with fine particles (AWRE-O-39/68) nickel-chromium alloys 16 p2684 N68-28164

Fabrication and testing nickel chromium riveted in [DAC-60787] 17 p2982 N68-29060

Bonding and surface re nickel alloy-sapphire reinf [AMMRC-CR-66-01/7] s effects on strength of 18 p3086 N68-29592

tion of single crystals of Allotropic phase tran cobalt-nickel alloy [AROD-4953-2-MC]

18 p3087 N68-29658 Radial distribution fundeposited nickel-phos on for amorphous elecalloy 18 p3092 N68-30426 (TR-[7]

Stability, surface hardnickel alloys exposed to m ss, aging, and weight loss of icrocavitation in impact ero-

(FTD-HT-23-651-67) 18 p3095 N68-30669 carbon steel and other water reactor loops 18 p3095 N68-30690 [AECL-2800]

cal composition of Fe. Ni, Co, and refractory [DMIC-MEMO-236] 18 p3096 N68-30800

Anomalous property cl loys studied by electri-attering, and field-ion m changes in nickel-molybdenum rical resistivity, X ray diffuse 19 p3290 N68-30957

ring at nickel alu-

19 p3349 N68-30981 improved short term

(FTD-HT-67-377) alloys 19 p3291 N68-31312

ce on saturation mag-ckel copper and nickel chromium alloys (RTS-43911 20 p3562 N68-32312

ning on properties of 20 p3497 N68-32590

allic compounds in haf-20 p3499 N68-32687

Correlations between flexural and direct stress low cycle fatigue tests on HY-100 and HY-140 steels, Monel-400, cast and wrought 70-30 cupronickel, and NiAl bronze [REPT.-2460] 20 p3504 N68-33274

nium-nickel alloy 20 p3505 N68-33348 Carbide analysis of cast chro Effects of lead and bore and mechanical pro-

purities on microstruc-of nickel-base alloys 20 p3505 N68-33357 Correlation between ele prosion rate, and compo sposed to ammonia soluti

21 p3701 N68-33611

Electrodeposition of palladium-nickel alloys for im-proving microhardness, and contact and wear re-21 p3701 N68-33618

th on creep rupture strength d nickel alloy composites 21 p3702 N68-33684 High temperature in of refractory metal fib [NASA-TN-D-4787] Fatigue tests on 18 po (HU-1071)

kel maraging steel 21 p3702 N68-33859 p rate and ductility of nickel-base materials [NAA-SR-MEMO-12554] 21 p3703 N68-34267

Kinetics and oxidation mechanics n of nickel- titani-[FTD-HT-67-265] 21 p3704 N68-34392 Determination of wave functions characterizing al-phys undergoing spiodal decomposition 22 p3947 N68-34904 Calculating thermo properties of nickel and [NASA-TT-F-11914] and thermodynamic 22 p3890 N68-35224 Correlation between ture, creep, and plastic deformation of n [FTD-MT-24-331-67] 22 p3890 N68-35313 Kerr magnetooptic s nickel iron tapes [TR-EE68-15] of domain patterns in 22 p3951 N68-35438 Cavitation damage as steel, nickel, and aluminum alloy in water [NASA-TM-X-1670] 23 p4074 N68-36076 Life capabilities of nickel cathode alloys with oxide cathodes and coated particle cathodes in test diode [NASA-CR-97194] 23 p4031 N68-36583 23 p4031 N68-36583 NICKEL CADMIUM BATTERIES Thermally sterilized nickel cadmium battery development [NASA-CR-90501] 02 p0163 N68-11804 trochemistry and intern [TG-942] 03 p0303 N68-12150 ty tests of nickel cadmium spacecraft cells [NASA-CR-91293] 04 p0447 N68-12944 Static and dynamic test data sion in nickel cadmium batteries [NASA-CR-72317] on cell core compres-04 p0447 N68-13010 bjected to life cycle Sealed nickel cadr idary spacecraft cells 04 p0448 N68-13061 [NASA-CR-91289] aming characteristics of al cell discharge cycle 04 p0449 N68-13611 Internal temperatures, nickel cadmium electroc [NASA-TM-X-63067] Life cycling test data for nickel cadmium batteries -INASA-CR-915631 04 p0450 N68-13748 Battery-powered air purifying respirator to provide protection factor of 1000 against particulates when used with half and full face masks, rigid helmets, and 05 p0617 N68-14989 Battery charge and discharge control system for ESRO 2 satelline [ESRO-TM-22] 06 p0767 N68-15183 Effect of heat sterili on electrochemistry of 06 p0768 N68-15505 mium secondary spacecraft cells [NASA-CR-92884] INASA-CR-925311 ation and control elec-nium cells 08 pl 120 N68-17741 Characterization of re trodes for spacecraft nickel es [NASA-CR-93244] Spacecraft electroc cell calorimetry [NASA-CR-93430] al cells - nickel cadmium 09 p1274 N68-18709 Oxygen signal and eveloped for charge con recombination electrodes of of spacecraft nickel cadmium tutteries [NASA-CR-93427] 09 p1275 N68-18826 ture nickel cadmium Design optimizaled cells and be [ECOM-02361-3] 11 p1626 N68-20745 on, porosity, and pore rilizable Ni-Cd battery 12 p1819 N68-22235 Microscopic, X ray size distribution data fo [NASA-CR-94315] overcharge control of ixiliary electrode si nickel cadmium batteri [NASA-TM-X-63177] 12 p1820 N68-22377 ium secondary cells Acceptance tests of si for spacecraft power supply [NASA-CR-94617] 13 p1996 N68-24162 Physical and electrical ch mium, cadmium-ailver oxid-teries and electrochemical c [ECOM-2949] teristics of nickel cad-16 p2591 N68-27109 Electrochemistry a mium batteries [NASA-CR-95252] ics of nickel cad-16 p2593 N68-27548 ally sealed silver oxide droxide cadmium cell 17 p2811 N68-28718 Comparative data on hermet

trage stability of silver cadmium batteries 17 p2811 N68-28720

power, and operating exprechargeable nickel cadmius timuous feed hydrogen oxygen [REPT.-526] (NASA-CR-96011) Solar cell and but [RAE-TR-68052] Design, develop cadmium battery a [ECOM-02512-F] [JUL-500-RX] (COO-582-14) Kinetics and med and Pd /II/ complex (AFOSR-68-1620) NICKEL PLUODIDES NICKEL OXIDES Elect

for Ariel 3 satellite 23 p3995 N68-37130 testing of vented nickel 24 p4201 N68-38133 Elution order of alip fonic resim by ammonia [COO-499-16] nes from nickel sul-05 p0623 N68-14424 of hydrogen adsorption Calorimetric measuren on thin nickel film surface 06 p0786 N68-15214 truction of neutron double 06 p0843 N68-15225 dence of Faraday rotation in 07 p1069 N68-16959 Spectral and magnetic properties of tetragonal macrocytic complexes of nickel/2/ 11 p1644 N68-20644 X ray diffraction analysis of structure effects upon echanical properties of beta-nickel aluminum 13 p2080 N68-23161 d cobalt in ammoniacal sol-ed nickel-cobalt ores 13 p2017 N68-23827 ts of tetrahedral nickel halides in 20 p3428 N68-32932 Nickel mercaptoamine alkyla ion with alkyl halides 22 p3820 N68-34936 ation coefficient of oxygen in nickel oxide using isotope exchar [AFML-TR-68-60] 22 p3825 N68-35402 of trifluorophosphine and platinum 23 p4005 N68-36173 Nucleation and growth of nickei and palladiu 23 p4009 N68-36502 of acid hydrolyses of Ni /II/ 24 p4214 N68-37707 Hartree-Fock molecular orbital self consistent approximation for nickel fluoride cluster 19 p3326 N68-31154 nickel oxide 13 p2015 N68-23687 16 p2611 N68-27894 irge, discharge and in film nickel oxide 17 p2810 N68-28717 and nickel powders from reduction of ad nickel oxides with magnesium, lithium, OF RODIUM VEDORS 18 p3089 N68-30066 Temperature and pre power and electrical res ductor NiO [AFOSR-68-0982] 18 p3048 N68-30636 Mousbauer effect of iron 57 in bulk and ultra-fine ckel oxide 19 p3347 N68-30916 of nickel oxide com-20 p3420 N68-32586 nt oxide optical and 23 p4154 N68-36827

NIGHT SKY intered plate nickel batte-of alkali buttery design 17 p2811 N68-28723 NICKEL PLATE Aluminum, nickel, and zinc coating corrosion prevention against sea water [MLM-1334] 03 pt Thin walled w odels manufactured by lumate bath 11 p1705 N68-21214 [DLR-FB-67-94] 17 p2812 N68-28727 OCKEL STEELS c-ailver and nickel-Metallurgical ar dysis of nickel maraging steel web ockets 19 p3202 N68-30961 (NWL-2114) 02 p0215 N68-11208 ta for a al properties, a workshillty of a r liquefied gas ste el cadmium batteries 19 p3204 N68-31473 (MTB-010053) 05 p0675 N68-14446 WCAP-3677-61 13 p2081 N68-23424 16 p2610 N68-27782 tigue damage in high 19 p3291 N68-31132 n metal by compressed air or nitro TRANS-68/127] 20 p3495 N68-32419 stress conditions (TRANS-68/67) etallurical study of possible mecu-ed zone hot cracking in 18-Ni maraging steel 20 p3497 N68-32575 20 p3497 N68-32579 olling of porous strip from a of chromium-nickel stain-20 p3504 N68-33340 ne nickel steel tubes Creep rupture stre filled with liquid sodi [ANL-TRANS-594] 22 p3892 N68-35724 24 p4269 N68-38094 NICOTINAMIDE ints of nicotinar 15 p2398 N68-26839 OGNT A abound carriers 02 p0235 N68-11346 landing high-INRL-6SELT of positive ion densi [NASA-CR-96379] 20 p3472 N68-33198 IGHT AIRGLOW U EREGION NIGHT SKY [NASA-CR-93157]

R67ELS-24

09 p1334 N68-18977

13 p2005 N68-23471

Cree Nimon variable

UH

NIMIROE

RHEL

RHEL

Enha produc RPP/F

BOBATI

Deve

miobate (NASA

AD-67

HUMON

Magr

(NASA

tion, yie um foil [TR-10

UCRL

Dyna of purit

TR-01:

TR-01:

venel si

Diffu

Chem netal p

EUR-3

Chron

[IS-T-11

Calcuin tantal [ANL-7

Mathe arbon a

[LA-374

Lange vapor pr (BM-RI-

cal them

Neutr [GA-813

Corros sodium f

Joining iess steel [NASA-

NASA-

Curren

um collection [NASA-4

24 p4297 N68-38006

Chen

Targ

NIGHT VISION rements of night sky brightness 14 p2345 N68-24846 tric mea [PUBL - (0) Electron image converters for studying infrared lu-inescence in twilight and night skies of upper at-[NASA-TT-F-11574] 14 p2260 N68-25395 Night sky brightness and polarization of zodiacal light measured by OSO-2 satellite and balloons 16 p2758 N68-27477 Pularization of sod n night sky 16 p2760 N68-27487 Nighttime behavior of it seric F region studied using incoherent scatter so [NASA-CR-95737] 17 p2878 N68-29076 from multispectral OGO-4 satellite 19 p3305 N68-32086 Meteorological re-photometry in airglow be [NASA-TM-X-63299] Feasibility of aerial rec sance photography at NIKE X SYSTEMS 20 p3482 N68-33406 Synthesis of high resolutione reconnaissance on television systems for 20 p3483 N68-33415 20 p3483 N68-33415 Morphology of auroral displays in vicinity of earth nidnight meridian 22 p3866 N68-35010 Measurement and analysis of night sky and low altitude aurocas in magnetic storm periods [NASA-CR-97165] 23 p4056 N68-36604 alloon-borne ultraviolet cameras for night sky 23 p4065 N68-37200 Sensory signal-brightness evaluation during nig flight by acoustic intunity matching as function of fla luminance, and duration (AM-67-16) 06 p0777 Non-153. 06 p0777 N68-15346 High sensitivity scan [WRE-TN-PAD-120] 07 p0996 N68-16466 of 407 works on visual de-id localization at low light HUMRRO-TR-68-21 13 p2007 N68-24057 Backscatter lie [RM-5442-PR] ctive night vision systems 13 p2111 N68-24274 Aircraft instrument or white light for opti ent and cockpit illumination by red optimum utilization of pilot visual (AGARD-CP-26) 17 p2831 N68-29237 Aircraft cockpit lighting requirements for safe low level night flying 17 p2831 N68-29238 Visual acuity and dark ada pilots tested for verification traviolet, red and white light tation recovery time of of adaptation to ul-[NASA-CR-91079] 17 p2832 N68-29243 Effect of red and white light night cockpit humanous on central and peripheral visual performance 17 p2833 N68-29247 NASA-CR-911381 Luminance measurements for red and white-lighted aircraft instruments used to assess effect of cockpit luminance on pilot vision [NASA-CR-92544] 17 p2833 N68-29248 NIGHTGLOW nghs from Gemini flights 04 p0506 N68-12920 Night airglow layer photogra d on alternating eference m interference monochromator based on afternating light for measuring twilight and nightglow [REPT_-17/1964] 05 p0657 N68-14005 PB-176215] s over equatorial regions Nightglow are m [NASA-CR-92669] by orbiting satellite [TR-0158/3260-10/-1] 05 p0655 N68-14857 ninimd grenade gl from 100 to 200 km WRE-HSA-23] 08 p1166 N68-17243 08 p1234 N68-18251 [NASA-CR-93351] ervations of atmospheric sulti-joule countr ray air 10 p1587 N68-19806

> of polarization in se to sirglow line emis-

15 p2558 N68-25872

ays in vicinity of earth

22 p3866 N68-35010

Nimbus satellite infrared r on atmospheric absorption be perature and moisture change [NASA-CR-94688] NIKE-APACHE BOCKET VEHICLE n used to study charged particles are event on 2 Sep 1966 01 p0130 N68-10375 Nike-Apache rockets used to stu emitted during solar flar [NASA-TM-X-63012] 14 p2283 N68-24432 Design and performance of system on Nimbus 2 spacecraft [NASA-CR-62045] of photovoltaic power Coast phase control system for reducing trajectory dispersion and shaping trajectories of Nike-Apache sounding rocket vehicle 14 p2190 N68-24455 Cumulus cloud and fog barvations using Nimbus 04 p0583 N68-13587 mk spectral reflectance ob-satellites and infrared Electrical impedance measurements of c nas on Nike-Apache rocket vehicle scale m [CM-R39-10.4] 10 p1507 ments of dipole anten-cle scale models 10 p1507 N68-20518 [NASA-TN-D-4552] 15 p2466 N68-25862 Performance test da system engineering mod bus ground stations [NASA-CR-95056] data on high data rate storage odels, and modifications to Nim-NIKE-CAJUN ROCKET VEHICLE Engineering aspects of instrumentation and circuitry for pitot-static probe payloads for Nike-Cajun rockets [NASA-CR-93251] 08 p1245 N68-17867 15 p2423 N68-25936 Operational utility evaluation of direct readout in-ared data based on data from Nimbus satellites limbus satellites 15 p2496 N68-26105 NIKE ROCKET VEHICLES

U NIKE-APACHE ROCKET VEHICLE

U NIKE-CAJUN ROCKET VEHICLE [TR-199] Corona induced failures in remova-corona induced failures in remova-unipment during ground testing 15 p2442 N68-26878 Nike X shock tube facility Power supply subsystems for use on Nimbus satellite 14 p2239 N68-25539 Program [NASA-TM-X-63245] NIMBOSTRATUS CLOUDS 16 p2594 N68-28033 Radiance and polarization of multiple scattered light from haze and clouds [NASA-CR-91139] 03 µ0338 N68-12030 Evaluation of Nimbus satellite ments and heat balance charts of es [NASA-TN-D-4589] 16 ite radiation measure-fearth atmosphere 16 p2657 N68-28222 03 p0338 N68-12030 NIMBUS CLOUDS
U NIMBOSTRATUS CLOUDS Multiple operating points, voltage regulator, and volt-ampere characteristics for photovoltaic power system for Nimbus B natellites [NASA-TM-X-63251] 17 p2810 N68-28709 NIMBUS SATELLITES 17 p2810 N68-28709 Evaluation of sea surface temperature as meas by Nimbus 1 satellite high resolution infrared radio Postflight analysis data on Nimbus 1 solar array drive motor failure [NASA-CR-95482] 17 p2815 N68-28825 01 p0087 N68-10222 [NASA-TN-D-4078] Detection of terrain featu-high resolution infrared radi ires from Nimbus I satellite iometer nighttime measure-Long period variations in eccentricity and perigee r Nimbus 2 explained in terms of earth zonal har-onic coefficents, plus first order earth oblateness per-[NASA-TN-D-4603] 17 p2877 N68-28872 Agricultural possibilities based on Nimbus 2 high re data for equivalent black b [NASA-TM-X-63268] [NASA-TM-X-63011] 01 p0135 N68-10357 of arid and sub-arid lands solution infrared radiometer Data reduction and magnetic ligital computers used with digition ic tape preparation for itized high resolution in-17 p2878 N68-29082 frared radiometer system [NASA-TM-X-60720] 03 p0412 N68-11952 Design and development of m frared radiation grading spectros nt of multiorder satellite in-spectrometer for Nimbus D Pressure distributions and teristics of Nimbus B fuel capsu [NASA-TM-X-1487] and aerodynamic charac-apsule in hypersonic flow 03 p0295 N68-11958 [PB-1781221 19 p3374 N68-32027 SNAP-19/Nimbus B [NASA-TM-X-63300] 19 p3374 N68-32087 Launch vehicle technical re-appased by Nimbus C spacect cal requirements and restraints pacecraft and adapter configue concepts, and Nimbus [NASA-TM-X-60722] 03 p0417 N68-12024 INASA-TM-X-633131 20 p3599 N68-33593 Operational, geographic, and time data for senso ad instruments of Nimbus 2 satellite during Augu Nimbus 2 and ESSA 3 satellite observation photographs of typhoon Marie [NASA-TN-D-4757] 24 p4280 N68-37869 [NASA-TM-X-607191 03 p0413 N68-12044 NIMBUS 1 SATELLITE us D infrared filter wedge Design criteria for Nimb Cumulus cloud and fog bank spectral reflectance ob-rvations using Nimbus satellites and infrared 03 p0342 N68-12139 Flight evaluation of power, control, thermal, and ulse code modulation signal subsystems during first rbit of Nimbus C satellite (NASA-TN-D-4552) 15 p2466 N68-25862 NIMBUS 2 SATELLITE 03 p0418 N68-12680 Cumulus cloud and fog bank spectral reflectance ob-ervations using Nimbus satellites and infrared Data analyses of Tiros and Nimbus radiometric ob-[NASA-TN-D-4552] 06 p0869 N68-15227 15 p2466 N68-25862 Stratospheric temperature patterns for period May 15 to July 29, 1966, derived from Nimbus 2 satellite Calibration, system, subsystemicrowave radiometer for Nimi (NASA-CR-92670) m, and components of ous satellite 07 p0994 N68-16117 [NASA-TM-X-60427] 21 p3684 N68-33864 Framework and packaging design optimization for infrared spectromater compatible with Nimbus satellite tography and data evalu-tuation during Nov. and 07 p1085 N68-16281 21 p3716 N68-33988 Microwave radiometer design criteria for Nimbus Global stratospheric sured by Nimbus 2 sate [NASA-TM-X-60413] radiation patterns mea-07 p0964 N68-16707 21 p3716 N68-34244 Nimbus satellite stabilization and control subsystems ed ocean currents ob-rith infrared detector 21 p3686 N68-34261 Sea surface tempera served from Nimbus 2 st [NASA-TM-X-60412] 08 p1199 N68-17417 Storage cells, machine tools for storage module achining, resistors, capacitors, semiconductors for ion during Sept. and Oct. imbus 2 and Essa 2 photogmachining, resistors, capacit Nimbus D solar conversion po [NASA-CR-93292] 08 pl 119 N68-17346 21 p3719 N68-34517 Design and function tests of rared radiometer pulse code mo to Nimbus C experiment NASA-CR-93509] Design, manufacture, and testing of Nimbus B PCM lemetry subsystem, bench test equipment, and NASA-CR-968921 09 p1305 N68-19208 22 p3833 N68-35147 Predictions of tropical cyclone development base on Nimbus 2 high resolution infrared radiometer mea-surements, and ESSA 3 photographic observations of Optimal processing of Nimbus of ocean surface temperature s 2 data for observation patterns and synoptic [NASA-CR-97280] 23 p4096 N68-36931 1966 typhoon [NASA-TM-X-63197] 13 p2098 N68-23592 Performance and reliab system for SNAP 19 with in [MND-3607-239-1, V. 1] lity testing of power supply terfaces for Nimbus B immersed thermistor

13 p2070 N68-24165

NASA-CR-877301

ight marific

NIMONIC ALLOYS

Creep deformation tests and theory for nickel and Nimonic 80 A under tensile stress and at constant and variable temperatures

15 p2481 N68-25956

NIMPHE (ENGINE)
U HYDRAZINE ENGINES MIMROD ACCELERATOR

Nimrod accele (RHEL/R-148) 01 p0091 N68-10447 Target mecha operation of Nim [RHEL/R-155] d proton beams, and

14 p2306 N68-24746 n-negative pion system n reaction 23 p4121 N68-36783

NIOBATES

containing sodium niobate dielectric ma [NASA-CR-65986] 09 pl314 N68-18502

mical reactions of chic es of alkali metals

13 p2022 N68-24083

Dielectric and structural investigations of sodium potassium and audium strontium cadmium niobates possessing defect structures [AD-671905] 20 p3581 N68-33033

MUIBOD

Magnitude of electrical potential-temperature curve etermined for tantalum, niobium, and magnesium during oxidation in air (NASA-TN-D-4240)

01 p0075 N68-10498 fisiocation density, distribu-of 125 micron thick niobi-

[TR-1001/2250-20/-6]

01 p0076 N68-10591 Environmental effects on decay constants of isomer-[UCRL-16910]

03 p0399 N68-12773 Dynamic tensile of purity and temp e stress-strain test to determine effect operature on dynamic microstrain of

[TR-0158/3250-10/-7]

04 p0520 N68-12961 Work-hardening model for effect of grain size on flow stress of nicotum strained by rolling [TR-0158/3250-20/-4]

04 p0521 N68-13126

nent in pressu 07 p1008 N68-16649

[RAI-385] and tantalum 08 pl 186 N68-17860

process for refractory niobium sandwi (EUR-3743.E) nic applications 09 pl296 N68-18962

um, tunes 11 p1650 N68-21068 [IS-T-113]

cs of oxygen solut 11 p1651 N68-21119 [ANL-7335]

ating niobium and carbide in terms of 11 p1652 N68-21210 (LA-3744)

nethod for determining a and liquid hafnium 11 p1634 N68-21426 Langmuir free evaporat vapor pressures of liquid ni (BM-RI-7125)

Electrical performa cal thermionic conver (NASA-TN-D-4533) um cvii 11 p1632 N68-21766

[GA-\$133] 12 p1933 N68-22648 on alloys by liquid

sodium flow IORNL-TR-18321 12 p1890 N68-22667

Joining bimetal to less stoel with inner I [NASA-CR-72353] 13 p2073 N68-23439

Effects of silicide a niobium and tantalum (NASA-CR-94582) 13 p2082 N68-23469 Current-voltage charact ermionic converter with es of variable spaced see emitter and slobi-

NASA-CR-1033] 13 p1993 N68-23476 bility of niobius sadium in magnesium ing and subsequent (UCRL-TRANS-10219)

14 p2217 N68-25138

livés 14 p2273 N68-25161

d crack propage

16 p2609 N68-27666 coatings of iridium on and tungation 17 p2900 N68-28655 [NASA-CR-95569]

Niobium-tin alloy plu etallographic hardness er heat treatment for ictural restgenography

NR-871/XIV/PS 17 p2902 N68-29435 oint defect model calc

41-115941 18 p3155 N68-30552 Niobium doping effect on cher natitution of titania powders

20 p3508 N64-32307 X ray and electron di processes in niobium [RTS-4263] alyses of oxide

20 p3428 N68-32926 Controlled add niobium in evacus [ORO-2570-12] all amounts of oxygen to r at 900 dog C 20 p3431 N64-33192

Sources of commelting of high puri (ORNL-TM-2208) uring electron beam

21 p3704 N68-34289 Low temperature el rivity of pure niobi-

23 p4149 N68-36220 n dependence of creep me alloys 23 p4080 N68-37153 Activation energy and st rate of niobium and tantalun [NASA-CR-97276]

olutions of carbon, (ORNL-TR-1942) and tantalum 24 p4354 N68-37960 NIORIEM ALLOYS

Heat treatment of ure of uranium alloys with law niobium of (ORNL-TR-1695) 01 p0077 N68-10778 ce cermit seal for

High strength, therm thermionic diode [NASA-TM-X-52373] 02 p0215 N68-11045 Lithium corrosion yttrium oxides at his NASA-CR-90513 a zirconium alloys and

02 p0222 N68-11617

BNWL-546] 05 p0672 N68-13977 um-tin system 07 p1070 N68-17027

AFML-TR-65-2, PT. 2, V. 17

09 p1351 N68-18394 of niobium and tantaium alloys [BM-RI-7116] 10 p1540 N68-20212

rs mechanical proper-n. molybdenum, and icobium-molybdenum ali (REPT.-68-9)7-119-R()

10 p1540 N68-20270 cting air Far infrared abs

11 p1767 N68-20709 Hydrogen effect on e 11 p1769 N68-20762

Creep behavior of alloy subjected to hig [BARC-308] 11 p1712 N68-20922

Effect of ternary perties of nichism a [UCRL-17982] 1 p1771 N68-20930 Operational chara-ing potentium system cycle test loop NASA-CR-93910) of two loop lithium boli-ium sirconium Kankino

11 p1679 N68-20943 Effects of neutron mealed, cold work shromium alloy m tensile properties of ched gironnium michi

IRARC-300) 11 p1712 N68-20962 m of nic sodium flow (ORNL-TR-1832)

12 p1890 N68-22667 Application of axial ment of induced and or pirconium wire in trans-[TR-0158/9230-01/-1]

13 p2137 N68-23879

solid in solution in minimum and hardson and hard on an (III.477/XIV/PS)

14 p2272 Nos-25150 um and tentaless alloys [NASA-TM-X-59596]

25 per cont min 14 p2274 1466-25400

dicide dutty apin for protection (15 p2479 N68-25722

reial medium and nor ribbon and Nb-Zr wire [NASA-TM-X-52319] 15 p2537 N68-26247

energy and volume for turn offers in police sole 15 p2486 N68-26826

ricution 17 p2990 N65-28640 Assolties for superloys for heat exchanger

LANE-TRANS-5981 17 a2959 N68-29116

18 p3094 N68-30369

USCRL-131761 8 p3155 N68-30648 curves of high purity

19 p3349 N6E-30962 of casego pie

20 p3494 N68-32241

ion chron (FTD-HT-67-130) 20 p3506 N68-33473

of superco MASA-CR-96610] 21 p3752 N68-33627

d V-Ge 23 p4154 N68-36885 Signer conductivity of Sign Nb-AL Nb-Ga, ONF-640310-11

ر ودادره مساول به رنگ هیشانند هستوری

[ABCL-2715] 24 p4270 N68-38344

vity and electrical resistance of sir-lobium, and taxalom carbides at ILA-TR-67-18) 01 p0152 N68-10777

Structure determinati thorhombic beta plan [LA-TR-67-73]

04 p0521 766-13459

NASA-CR-92723) 07 p1007 N68-16367 is properties of he

NASA-ER-ASIGNI 16 p2678 N68-27399 s of minimum carbid on of minimum for to

NASA-CR-93222) 16 p2680 N68-27531 eriod, spin cost, but

4-AC-1327 17 p2959 NGB-29258

turing of company 22 p3992 N68-3590

WANL-TME-1761)

NT NICHATES

[NASA-TT-F-11586]

Con and all [MIN] NITROB Lich NASA NITROB

NITROCI

NITROFA

Quan liquid e esters

NITROPO

Heat sublima nitrofor (TRAN

NT LI

EURA

Satelli

[NASA-

Vibrat

Nitrog

NASA-

Applic

levels [NRL-65

Conveide, nitro shock tul [NASA-1

Tempe emitted b [TR-1001

Nitroge irradiated [EURAE

Influen EURAE

Influen

EURAE

keV heliu

Fortran quations

mixtures of (BRL-R-1

Constantures oxyg nitrogen o [B3]

NASA-C

SUBJE

NITROA

Flotation characteristics of niobium tantalum 22 p3889 N68-35095 NIOBIUM ISOTOPES

10 p1483 N68-19785

Niobium 90 decay and transitions in internal conver-[UUIP-555] 12 p1928 N68-22435 sical environment effects on decay m 90, and gamma ray spectra of

Electrical, and calorimetric measurements on alternating current loss in niobium zirconium, niobium titamium, and niobium stannide superconductors [NASA-CR-61654] 69 p1410 N68-19140

Titanium impurity analysis in ferro-niobium by spec-

Kinetic study of reduction of niobium pentachloride by niobium metal using gas chromatograph [f8-1780] 15 p2403 N68-25662

Chemical or physical environstant of niobium 90, and olybdenum 90 16 p2718 N68-27098 Irradiated niobium isotopes used as neutron dosage

(FFN-74) 18 p3120 N68-30740

MOBIUM OXIDES

louic diffusion in solid metal oxides, and diffusion processes of nickel in nickel oxide films and oxygen in niobium pentoxide and zirconium oxide [AFOSR-67-2633] 04 p0466 N68-13251

Controlled addition of small amounts of oxygen to niobium in evacuated chamber at 900 deg C [ORO-2570-12] 20 p3431 N68-33192

NIOBIUM STANNIDES

Niobium stannide to obtain high Q factors for refrigerated-radio frequency preselector that reduces interference in radio communications

05 p0636 N68-14459

Hot press processing of niobiums, tin, and carbon owders to determine effects of microstructure on su-erconductive properties of niobium stamaide in niobipowders to determine effects of perconductive properties of niot um carbide matrices [UCRL-17826] 08 p1222 N68-17285

Electrical, and calorimetric measurements on alternating current loss in niobium zircomium, niobium titanium, and niobium stamide superconductors [NASA-CR-61654] 9 p1410 N68-19140

de superconductors 09 p1410 N68-19140 Critical surface between superconducting and no mal state determined for commercial niobium stannic ribbon and Nb-Zr wire [NASA-7M-X-52319] 15 p2537 N68-2624 15 p2537 N68-26247

NITRATE ESTERS

Sensitizing effect of liquid organic nitrates on high safety ammonium nitrate explosives 02 p0177 N68-11463

Combustion characteristics of nitrate ester monopropellants at ambient gas temperatures and

TM-705.9161-03] 19 p3357 N68-32077

NT AMMONIUM NITRATES NT CELLULOSE NITRATE NT HYDRAZINE NITRATE

NT INORGANIC NITRATES NT NITROFORMS

NITROGLYCERPA

NT PETN
NT POTASSIUM NITRATES
NT SILVER NITRATES
NT SODIUM NITRATES

Nitrate solution, anion excha rification and concentration of pi [LA-3499] nge technique for pu-03 p0319 N68-12791 ion in nitrates of alkali

Topography of defect form 04 p0591 N68-13834

Nuclear magnetic resonance and infrared spectra of dimethyl sulfoxide complexes of chromium, nan-gamese, iron, nickel, and copper nitrates, and magnesium and nickel perchlorates [NRL 4597, PT. 1] 08 p1145 N68-18171

Thermal decompo n of organic tin compounds 09 p1293 N68-18528

Equation for calculating duranum and plutonium bets acid and tributyl phosphate sy

12 p1837 N68-22623 n and uranium by ion

14 p2217 N68-25142 Distribution of metal nitrates in extraction system n/NO3/4-UO2/NO3/2-HNO3/TEP dodecane (FK-680) 19 p3223 N66-31253

Calculation of thermodynamic equilibrium relations in the uranium nitrate-water system
[AAEC/TM-447] 19 p3227 N68-31561

NITRATION

Kinetics and chemical peculiarities of slow nitration reaction between propane and nitrogen dioxide [TIL/T-5757] 19 p3231 N68-31918 NITKIC ACID

Explosive compound prepared from monomethyl urea by treatment with nitric acid and acetic anhydride [TIL/T-5722] 01 p0018 N68-10212

Oxidizing potential of trivulent and tetravalent ceri-um in solvent nitric acid, water, and tributyl phosphate 06 p0794 N68-15961

Potentiometric titration of free acid and plutonium in nitric acid plutonium solutions [KFK-622] 07 p0956 N68-16430

Plutonium /4/ oxidized into plutonium /6/ by means manganese dioxide in nitric acid medium of manyanes [KFK-621] 07 p0956 N68-16445

Rapid spectrometric determination of plusonium in sitric acid solutions by reduction of plusonium ions and measurement of resultant color at 567 nm 09 p1296 N68-18950

Kinetic study of hexavalent plutonium reduction by hydrogen peroxide in acid solutions [CEA-R-5168] 12 p1840 N68-22904 12 p1840 N68-22904

Separation of mercury from silver in nitric acid solu-[AERE-M-2008] 14 p2214 N68-24728

Electrolytic dissolution of pluts [RFP-1136] tonium in nitric acid 19 p3231 N68-31899

Decomposition kinetics of pho-potassium nitrate and nitric acid [RTS-4395] horite in solution of 20 p3418 N68-32509

Generation of gases by alpha radiolysis of plutonium and nitric acid [BNWL-751] 20 p3421 N68-32685

Solubility of six n oxide-plutonium oxide Solubility of sintered uranium oxide-plutonium oxide breeder reactor fuel in nitric acid [KFK-673] 21 p3725 N68-34404 Applicability of dilute nitric, sulfuric, and perchloric acids as solvents for spectrophotometry up to 250 deg

[ORNL-4279] 24 p4210 N68-37440

Phase equilibrium diagrams of trilaurylamine, odecane, nitric acid, and tetravalent plutonium [CEA-R-3478] 24 p4216 N68-37790

NITTRIC OXIDE

Air oxidation of methane to formaldehyde using gaseous nitric oxide catalyst with solid heated reaction heds - oxidation of methane with oxonized air over notamium tetrahorate hed

potamium tetraborate [NASA-CR-73070-5] 04 p0473 N68-13778 Ionization potential of first excited state of nitric

[AFCRL-68-0074] 11 p1657 N68-21734 Isotopic enrichment of nitrogen in photolysis of

15 p2407 N68-26074 Kinetic behavior of chemiluminescent reactions -pressure independence of nitric oxide emission in upper atmosphere

Photochemistry of ketene-nitric oxide-hydrogen

15 p2409 N68-26085

Photodissociation of nitrosyl chloride and nitric oxide in vacuum ultraviolet 15 p2409 N68-26086

Nitric oxide distributions and annual variations in mesosphere [NASA-TM-X-63286] 18 p3067 N68-29847 Infrared spectra and analysis of rare isotopic species nitrous oxide and nitric oxide

20 p3433 N68-33470

06 p0871 N68-15012

TRIDES

NT ALUMINUM NITRIDES

NT BORON NITRIDES

NT SILCON NITRIDES

NT TANTALUM NITRIDES

NT TITANIUM NITRIDES

Preparation and properties of mitrides and carbide itride mixtures of uranium and plutonium 01 p0025 N68-10790 [LA-TR-67-24]

Anomalous superconducting properties of refractory carbides and nitrides of Groups 4A and 5A elements [LA-DC-8022] 03 p0408 N68-12413 itride fuels for liquid

Electronic structure of carbides and nitrides of face entered cubic transition metals of sodium chloride

(ONERA-TP-540) 12 p1886 N68-22113 m nitrides as nuclear fuels for

15 p2502 N68-26436 Mixed uranium plutoniu thermal reactor applications [BMI-1826] carbonitride fuels for 16 p2703 N68-27225

Thermogravimetric study of formation reaction of lower nitride of chromium [ARL/MET-66] 16 p2615 N68-28190

Thermogravimetric techni um nitride reaction and disso (ARL/MET-69) ique for analyzing chromition temperature 16 p2616 N68-28263

Experimental determination of chromium-nitrogen alloy equilibria and lattice parameters of nitrides [ARL/MET-68] 16 p2616 N68-28306

Oxygen and nitrogen determi-bides, uranium nitrides, and som [JUL-517-RW] ination in uranium car-ne transition metals 17 p2899 N68-28552

Bonding, phase relationships, and electronic struc-ture of uranium nitride refractory metal (PEL-165) 18 p3027 N68-30412 High temperature reactions of tantalum carbide and ingsten with titunium, zirconium, and haftilum

(WRE-CPD-1411 19 p3223 N68-31200

Mixed crystal formation in bi m nitride and mononitrides of in binary systems of urani-es of titanium, hafnium, and

[KFK-721] 19 p3233 N68-31972 Superconducting proposities and nitrides [AFOSR-68-0265] erties of transition metal car-

20 p3574 N68-33367 Crystal formation and phase relationships of urani itride and carbonitride systems

[JUL-472-RW] 22 p3897 N68-35712 Preparation and properties of ultrafine carbides, itrides, and metals

nitrides, and meta (SC-T-68-1535) 23 p4006 N68-36204 Contribution to study of /U, Pu/C, N system [CEA-R-3536] 23 p4014 N68-37038

NITRIDING

Surface heat treatment of 20NiCrMo2 /SAE 8620/ el by carburizing and carbonitriding 20 p3486 N68-32547

Metallurgical aspects of reliability for small nitrided components in spacecraft drive systems [NASA-TM-X-59847] 21 p3697 N68-34248

NITRILES NT ACRYLONITRILES

Dielectric relaxation in chloroform and in binary dipolar militure of acetonirrile and bennonirile at microwave frequencies near room temperature (ORO-2840-6) 11 p1648 N68-21004

Dielectric relaxation in beaxonitrile and propionitrile, beaxonitrile and acctonitrile, and anline and anisole dipolar mixtures [ORO-2840-5] 12 p1934 N68-22675

Intermittent stress-celaration measurements on nitrile and neoprene rubber compounds - related with accelerated oven aging tests [RAE-TR-80116, PT. 2] 21 p3798 N68-34260

trile rubbers with sulfur dioxide and hydrogen sulfide introduced on zeolite [TRANS-1528] 22 p3896 N68-35675 Polymerization of alpha-phenylethyl isocyanide and entification of product

24 p4213 N68-37670

Kinetics of thermal dissociation of silver nitrite in vacuum and atmospheric co [NASA-TT-F-11732] 15 p2403 N68-25668 Organic nitrites deoxyge valent phosphorus reagents [NASA-CR-95937] ed in presence of ter-19 p3225 N68-31282

NITRO COMPOUNDS
NT NITROBENZENES
NT NITROGLYCERIN
NT NITROMETHANE
NT TRINITRO COMPOUNDS
NT TRINITROTOLUENE

Use of sulfur and aromatic nitro compounds as cathodes in liquid ammonia fuel cells [NOLC-738] 02 p0163 N68-11646 Preparation of bis/2-fluoro-2,2-dinitroethyl/ [REPT.-3466] 05 p0621 N68-14208

e spectra of aromatic nitro [PA-TR-3529] 08 p1143 N68-17966 NUTROAMINES

Condensation of di and alkylenediamines [MINTECH-T-5787] es with formaldehyde 24 p4219 N68-38302 NITROBACTER

Lichens and free-li peaks and their nitro [NASA-CR-92553] 06 p0840 N68-15809

NT TRINITROTOLUENE

s on nitrobenzene ction kinetics m lanions using elec 09 p1299 N68-19339

of selected aromatic solutions 10 p1487 N68-20037

U CELLULOSE NITRATE

NITROFI GORAMINES

Quantitative chen liquid chromatosra 20 p3432 N68-33420

ethane, and heats of ipy of formation of and fusion, and Heat of cor nitroform in ther (TRANS-2605) 18 p3029 N68-30560

NT LIQUID NITROGEN

Nitrogen content of a ted to stress corrosion tic stainless steels as re-[EURAEC-1902] 01 p0077 N68-10799 trogen gas molecule- solid

Satellite experiment fr surface interaction studi [NASA-CR-90101] 01 p0115 N68-10905 ibrational relaxation ic shock tube experie for nitrogen in hyper-

01 p0053 N68-10979

Nitrogen-carbs [RR-TR-67-11] 02 p0219 N68-11060 and nitrogen balance

Bone density, cales studies on Gemini pro [NASA-CR-90218] 02 p0166 N68-11380 cule of expression for coefficients, ionization

Application to nit loulating electron 02 p0220 N68-11389

Convective stagnation ide, nitrogen-argon gas shock tube tests [NASA-TN-D-4255] ufer of carbon diox-compared to air in 02 m0292 N68-11811

erature profiles of Lewis-Rayleigh afterglow emitted by active nitrogen (TR-1001/2240-20/-6, V. 1)

03 p0312 N68-12228 Nitrogen effect on m anical properties of neutron irradiated pure iron [EURAEC-1472]

03 p0352 N68-12469 Influence of nit neutron irradiation [EURAEC-1773] iron and steel under fast 03 p0353 N68-12571

Influence of nitro neutron irradiation [EURAEC-1919] ron and steel under fast 03 p0353 N68-12634

Nitrogen quenchi

04 p0561 N68-13700 Single and double electron keV helium 3 ions in nitrogen [UCRL-17756] uble electron capture by 7.7 to 166

05 p0710 N68-14343 Fortran computer program for equations pertaining to electro-mixtures of nitrogen and oxygen (BRL-R-1372) solving reaction rate irradiation of 4 to 1

06 p0792 N68-15749 stancy of dyna crygen nitrogen on oxygen mic viscosities of ternary gas mix-m carbon dioxide, and hydrogen

07 p0983 N68-16197 Critical mass flow b or of two phase choked

hydrogen and nitrogen syst [NASA-CR-92722] 07 p0984 N68-16447 Experimental determination of occusions are carbon-nitrogen radical violet system 07 p1051 N68-16847 n of oscillator strength of

Peculiarities of Mach reflection of shock waves mov-ing in carbon dioxide and nitrogen at supersunic speeds

07 p0987 N68-16862

07 p0940 N68-17029 ogen in argon with

loop Brayton cycle tur-

application to de [ANL-7167] of p1138 N68-17325 WERL-2823-281 08 p1139 N68-17328

08 m1199 N68-17418 ar reaction of curbon 12

08 p1214 N68-17645 excitation of 3914-ang-nitrogen first negative Cross sections for ele om /0,0/ band of p

[LA-3783] 08 p1215 N68-17784 ent of atomic photoionization ic hydrogen, oxygen, and

[NASA-CR-998] 08 p1216 N68-18118 rtion for Franck-Condon applied to first positive proximate nu

(AASU-274) 09 p1390 N68-18809 carbon dioxide nitrogen

tions 10 p1481 N68-19629 Solubility of helin en, and argon in liquid and nonsymmetrica temperatures and pres

[TR-0158/3210-10/-2] 10 p1583 N68-20087

Heat transfer correlation for electrically heated banks of w [NASA-TN-D-4514] or nitrogen flowing across ire meshes or tubes 10 p1615 N68-20374

ctra of free radicals con-10 p1494 N68-20523

Computed activation energies for reactions of oxygen, nitrogen, nitrogen oxides, carbon mononide, and carbon dioxide (TR-0158/9210-02/-2)

11 p1644 N68-20634 m effects in nitrogen,

11 p1708 N68-20705 y nitrogen washout by ne study of p hybrid computer [AMRL-TR-67-77] 11 p1639 N68-20795

n of nitrogen molecules ton sensitized mixture of en 14 and nitrogen 15 11 p1655 N68-21494

"Altitude distributions of certain oxygen and nitroge [NASA-CR-94130] nd airglow emissions by etastable constituents 11 p1694 N68-21736

12 p1861 N68-22255 ced cluster widths for nitrogen 14 and nitrogen 12 p1935 N68-22698 [JINR-P4-3681]

Mathematical models for curve during oxygen bread (SAM-TR-67-100) is for analyzing nitrogen wash 13 p1998 N68-23187

Performance of lacrated lubrication system for high temperature turbine engines [NSA-TM-X-61086] 13 p.2073 http://dx. ectrostatic probe for 13 p2126 N68-23719 INAL-TN-51

m in helium, ar-14 p2321 N68-24433

of high energy in, and argon 14 p2311 N68-25040

of oxygen, nitrogen, and on of resonances 14 p2311 N68-25047 Total neutron cross set beryllium 9 and energy re (CONF-680307-15) on test evaluation of Hydrazine and gre

NASA-CR-94765 14 p2265 N68-25107

Effects of two-particle teractions on oxygen 16 s

chaiques of operation of INASA-TM-X-596371 14 p2243 N68-25325 Transfer of excita from nin

(NASA-CR-87587) 15 p2515 N68-25985 Chemical, physical, and icroanalysis of chromiss anical properties from sel system in nitrogen

15 n2405 N68-25997

Carbon 13 used to investigate nitrogen 14 by helium 15 p2516 N68-36051

pressure of rarelle 15 p2453 N68-26227

gen-oxygen mixtures Principal reactions in a determined during and after p [BRL-R-1387] ed ionization 15 p2416 N68-26443

otoproduction of pion pairs and nitrogen in liq 15 p2521 N68-26517

of argon and nitrogen at low NASA-TM-X-60208) 15 p2512 N68-26928

Experimental determ alloy equilibria and lattic (ARL/MET-68)

oper stages of gas ceptance testing WRE-TN-DWD-10) 17 p2977 N68-29269

und coefficient from N-SiO gel 18 p3017 N68-29615

of N ice allowed with

18 p3128 N68-29760 en at microvieve frequencies and high po 18 p3020 N68-29853

nitrogen and hydrogen 18 p3027 N68-30429

its from acid, ratile, welding, and effects COA-MAT-4 18 p3093 N68-30510

AEDC TRAS 18 p3030 N68-30724

Second order con for sitrogen first pos for upper and lower (AASU-279) 18 p3138 N68-30790

c heat of sitrogen and ations of state 19 p3384 N68-31036

lography on sitro tion by activ (SC-R-68-1723) 20 p3421 N68-32682

mistry stud

20 p3429 N68-33045 Permention and diffusion rare gases through stainless of [LA-3909-MS] ent oxygen a 20 p3503 N68-33236

20 p3432 N68-33373 cometer and viscometr measurement of helic sure and cryogenic to

20 p3483 N68-33558

21 p3647 N68-33667 [NASA-CR-85116] d steel subjected to fast

M-5511 21 p3703 N68-34274 a mitrogen jote by elec-

NASA-TM-X-612201 21 p3681 N68-34297

Absolute cross section rays from nitregen 14 for [ORNL-TM-2267] r production of gamma 21 p3741 N68-34413

21 p3731 3448-34524 m nitrogen induced by [AEDC-TR-68-116]

22 p3819 N65-34880

Filli propel metric (TN-1)

Gro

TR-0

Dyna nitroge

(SAM-

Prei

Com tetroxi ide/mo charac [NAS/

Photused to nitroge [NASA

Cher

[NASA

(NASA

INASA

INASA

NASA

Elect

Jen 15

Parti of nitro [JINR-

Aton ratios ir

Two

CEA-

Direct and O I

TTROGE

Nucle of ener served i

NITROGE

NTTROM

Euler for calc

side rea (LA-37

Detor

NITROG Com reaction [UCRL

Smal

Corr

Theoretical description of the reaction rate of an ion-nolecule interchange reaction as a function of collision NASA-TM-X-63342] 22 p3829 N68-35747 m, nitrogen and oxygen content in upper atmosphere (BMWF-FB-W-68-54) 22 p3872 N68-35811 Low energy electron diffraction studies of oxygen, arbon monoxide and nitrogen adsorption on tungster /112/fa 23 p4005 No8-36165 Optical and microw plasma discharges in a [AASU-287] ts of 2450 MHz 23 p4139 N68-36259 Oxygen nitro catalyzed by car [AC-7-PU] tion reactions 23 p4007 N68-36297 Thermodynamic properties of helium, nitrogen, and helium-nitrogen mixtures from 240 to 950 deg R for prosoures between 14.696 and 3000 psis [BM-RJ-7190] 23 psis 186-86432 nd virial coefficients for rature and high pressure 23 p4047 N68-36357 Couplete system for shipboard chromatographic analysis of dissolved oxygen, argon, and nitrogen [AD-673426] 23 p4056 N68-36356 in nitrogen doped sil-Nuclear magnetic res icon carbide 23 p4152 N68-36628 se behavior and ther-ium-nitrogen system 23 p4189 N68-36876 modynamic properti [ORNL-TM-2106] Time reversal invariant easuring reaction 24 p4308 N68-37561 Adsorption of ni spersed polystyrene nd argon on highly 24 p4213 N68-37649 on from carbon 6 24 p4338 N68-37659 Th of solid solutions of carbon, nitrogen, and oxygen in (ORNL-TR-1942) 24 p4354 N68-37960 Fluorescence of air and nitrogen excited by energetic 24 p4253 N68-38150 Condensation and evaporation of carbon dioxid nitrogen, and argon at cryogenic temperatures usin molecular beam [AEDC-TR-68-110] 24 p4303 N68-3818 24 p4303 N68-38181 NITROGEN ATOMS n for high temperature in molecules of carb 07 p0959 N68-16840 nt couplings using nitrogen T-R-6151 13 p2122 N68-24216 and bremsstrahlung of ized oxygen and nitrogen 19 m3344 N68-32054

NITROGEN COMPOUNDS
NIT ALUMINUM NITRIDES
NIT AMMONIA
NITRIDES
NIT AZIDES [INORGANIC]
NIT AZIDES [INORGANIC]
NIT AZIDES [ONORGANIC]
NIT AZIDES [ONORGANIC]
NIT AZIDES [ONORGANIC]
NITRATES
NITRATE
NITRATE NT NT NT NT NT NT NT IMIDES
IMINES
IMONGANIC NITRATES
ISOCY ANATES
LIQUID AMMONIA
NICOTINAMIDE
NITRATE ESTERS
NITRATES
NITRATES
ACID NTNTNT NITRIC ACID NITRIC OXIDE NITRIDES

NITRITES NITRO COMPOUNDS NITROAMINES NITROBENZENES NITROFLUORAMINES NITROFLUORAMINES
NITROFORMS
NITROGLYCERIN
NITROGLYCERIN
NITROSHANE
NITROSO COMPOUNDS
NITROSO COMPOUNDS
NITROUS OXIDES
NITROUS OXIDES NITRYL CHLORIDES ORGANIC NITRATES PETN POLYIMIDES POTASSIUM NITRATES RDX SILICON NITRIDES SILVER NITRATES SODIUM NITRATES TANTALUM NITRIDES THIOUREAS THYMINE
TITANIUM NITRIDES
TRINITRO COMPOUNDS
TRINITROTOLUENE
UREAS

02 p0179 N68-11882

Empirical equations for care and velocity of carbon r calculating detonation pres-on hydrogen oxygen nitrogen [NOLTR-67-66] 04 p0466 N68-13075 m musculoskeletal Metabolic response of h stem to space flight condition 10 p1471 N68-20556

ry data on metals containing nitrogen, phosphorus, or sulfur [AFOSR-68-0343] 11 p1646 N68-20775

11 p1650 N68-21054 Chemical effects of nuclear reaction in vario

[COO-1620-2] 12 p1841 N68-22965 s of ligands containing

13 p2014 N68-23601 e of nitrogen radicals in

15 p2411 N68-26100 e crystal structure and

17 p2847 N68-29557 s studied for utilization of is and use in closed ecologi-

19 p3212 N68-32141 ocyclic comp after X ray irra ning nitrogen ob-secus solutions of

19 p3213 N68-32147 oscopic investigation of

20 p3414 N68-32265

stry of isomers of decahydroquia (RTS-4497) 20 p3422 N68-32691

rogenous organic com-Pounds in sea water [NASA-CR-96378] 20 p3473 N68-33243

Thermodynamic prompounds and heats eta tables for CHNOPS estion and formation for organic compounds [NASA-CR-96468] 20 p3432 N68-33427

NITROGEN DIOXIDE ced by m oxide and oxone 08 p1140 N68-17663

er for testing toxicity of a tetroxide in small 11 p1639 N68-20690 (SAM-TR-67-80)

niological resp sals exposed to ozone, carbon tetrafluoride [NASA-CR-95106] 15 p2398 N68-26728 Kinetics and che reaction between pr [TIL/T-5757] ities of slow nitration

trogen dioxide 19 p3231 N68-31918 Zeeman, and magnetic cide in near infrared 24 p4213 N68-37666 NITROGEN PLUORIDES

d nitrogen fluoride 30 effect on oction in rats 20 p3407 N68-33128 Sodium fluoride and ni growth and thyroid functio [AMRL-TR-67-189] NITROGEN HYDRIDES

Spin-apin and apin-orbit coupling, molecular war functions, and Hartree approximation for self co-nistent fields in zero field splitting in Nh ing in Nh 18 p3022 N68-30063

NITROGEN IONS

Shock tube spect d measurements of electron trogen and oxygen ions in far UV radiation range [NASA-CR-96235] 20 p3552 N68-32284 NITROGEN ISOTOPES

coupling in deute of B and N isotop [ORO-2972-47] 11 p1754 N68-21145

e of nitrogen 14, and pres-13 p2013 N68-23520

nt of nitrogen in photolysis of 15 p2407 N68-26074

frared spectra and analysis of rare isotopic species itrous oxide and nitric oxide 20 p3433 N68-33470 by chemical exchange

using complex format INIC-TRANS-26081 24 p4218 N68-38069 NITROGEN OXIDES NT NITRIC OXIDE NT NITROUS OXIDES

Investigation of tits oxide for lunar orbiter [NASA-CR-66524] im alloy fracture in nitrogen 05 p0676 N68-14506

ide concentration in gamma her as potential health hazard 05 p0645 N68-14743

Relative interaction radii for quenching of triplet ate molecules of oxygen, xenon, and nitrogen oxides manhthalene [TR-0158/3250-20/-3] 09 p1386 N68-18280

Computed activation energies for reactions of ox-gen, nitrogen, nitrogen oxides, carbon monoxide, and [TR-0158/9210-02/-2]

11 p1644 N68-20634

11 p1645 N68-20708

Temperature dependence of che terglow in nitric exide shock tube [TR-1001/2240-20/-6, V. 2] 11 p1646 N68-20728

Nickel 2 and cobalt 2 complexes of amine N-oxides 11 p1652 N68-21245

frared absorption of carbon and nitrogen oxides at cod temperature (SR-1) 11 p1656 N68-21605

tions involved in nitric oxide-atomic oxygen reaction [AFCRL-68-0137] 13 p2019 N68-23906

Photooxidation of butene-1 by nitrogen dioxide at short wavelengths [NRC-0000] 15 p2409 N68-26088

Reactions of methyl and acetyl radicals with oxides 15 p2411 N68-26096

Chemical properties and safety measures for dimethylhydrazime/nitrogen peroxide propellant com-bination for Europa 1 rocket [NASA-TT-F-11856] 17 p2961 N68-28629 NITROGEN POLYMERS

[NASA-CR-61548] trogen bonds 07 p0957 N68-16509

NITROGEN TETROXIDE Ablative material degra-rocket engine environme lation in liquid propellar at of nitrogen tetroxid [NASA-CR-72301] 01 p0147 N68-10031 bustion phenomena in propellant systems 01 p0153 N68-10946 Hypergolic ignition and AeroZINE 50 nitrogen tet [NASA-CR-65794]

Injector-element physical size effect on mixing and ombustion of nitrogen tetroxide-hydrazine propellants

[NASA-CR-91225] 03 p0426 N68-12437

(LA-3771)

Test evaluation of compulsion bladder for nitroge ant tank of lunar orbiter [NASA-CR-66535] posite Teffon-aluminum ex-en tetroxide oxidizer propel-NITROSAMINE High hydrostatic pressure effe-gamma uranium and noble metal [CEA-R-3316] cts on self diffe Mass spectrometric analysis of ionization potential id heat of formation of dimethylhydrazine and methylnitrosamine free radicals 12 p1892 N68-23002 05 p0732 N68-14858 Physical and mech technetium, hafnium, reviewed in terms of av (NASA-TM-X-61073) (RPE-TR-67/4) ctors for launch vehicle 10 p1493 N68-20494 Filling vanes and conne propellant tanks using nitro metrical dimethylhydrazine [TN-109/67-EP] NITTROSO COMPOUNDS 13 p2081 N68-23247 08 p1244 N68-17639 liphatic ionene synthesie, strain rate in deform lastomers, polymerization and structure of ni ber, crystallinity in polybutadienes, and dastic rubber binders irradiation effects and noble metals 22 p3950 N68-35188 Gross surface corrosion stainless steels, and titanium [TR-0158/3210-10/-4] on of magnesium, alumi 03 p0312 N68-12316 NOCTILUCENCE U LUMINESCENCE 09 p1412 N68-18305 of trimethylborane, and reac-szine with iron pentacarbonyl te with isobutylene - low tem-Dynamic flow gaming chan trogen dioxide and nitro ber for testing toxicity of gen tetroxide in small NOCTILUCENT CLOUDS survey of noctilucent perature reaction MRC-DA-144) (SAM-TR-67-80) 11 p1639 N68-20690 04 p0468 N68-13518 [NASA-TT-F-11529] 09 p1333 N68-18821 Preignition product formation is troxide-hydrazine system at sin n in hypergolic nitrogen simulated high altitude crowave spectra an Climatology, kines properties of sactiluc NASA-TT-F-11517] es, and chem 09 p1299 N68-19294 TR-0158/9210-02/-1] 09 p1337 N68-19359 11 p1776 N68-20732 Reactions of per phosphorus acid JFRS-44780) Structural formation (NASA-TT-F-11523) on noctificent clouds of p1339 N68-19491 Comparison, at simulated altitude, of nitrogen etroxide/monomethylhydrazine and hydrogen perox-de/monomethylhydrazine ignition pressure spiking haracteristics. 10 p1484 N68-19933 Statistical analysis on with synoptic meteorole tions in Siberia [NASA-TT-F-11525] noctilucent cloud occurrence rical and ienospheric condi-Synthesis of flu characteristics [NASA-CR-62071] copolymers, and terpolymers [TR-68-33-CM] 13 p2008 N68-23054 13 n2144 N68-23947 10 p1351 N68-19753 ological maps for noc-Reaction kinetics of electrop ated dienes, especially addition and nitroso compounds Photographs, thermocouples, and emission spectra used to study mixing and reaction of hydrazine and nitrogen tetroxide (NASA-TN-D-4467) 14 p2372 N68-24965 Analysis of synoptis tilucent clouds over we [NASA-TT-F-11524] 16 p2701 N68-28065 17 p2846 N68-29433 14 p2372 N68-24965 Spatial coordinates photographic measur reference star position (NASA-TT-F-11521) etilucent clouds from enation of secondary aring nitroso compounds Chemical reaction mechanism of stress corrosion cracking of titanism alloys exposed to liquid nitrogen tetroxide 16 p2701 N68-28066 19 p3226 N68-31437 [NASA-CR-95936] [NASA-CR-61824] 15 p2482 N68-26061 Observation of noct and from spacecraft (NASA-TT-F-11519) uds from earth surface Corrosion test of t m alloys with nitrogen NITROSVI, CHLORIDES Photodimociation of nitronyl chloride and nitric oxide in vacuum ultraviolet 16 p2701 N68-28095 15 p2483 N68-26196 (NASA-CR-61823) Noctifucent cloud Youth Astronomical O [NASA-TT-F-11526] tions at Novosibirsk ry in Soviet Union 16 p2657 N68-28226 15 p2409 N68-26086 Injector baffles for flam me stability in combustion setroxide and hydrazine mix-NITROUS OXIBES octilucent cloud projec-le photographs 16 p2638 N68-28253 tion in shock wave [NASA-TM-X-1595] Geographic coordinations on earth surface [NASA-TT-F-11522] 15 p2547 N68-26644 us oxide 03 p0425 N68-12253 Small uncooled co [CPD-114] n chamber tests of per-racteristics of nitrogen Light ray refraction tilscent clouds [NASA-TT-F-11518] Absorption and photoionization coefficients of itrous oxide measured by vacuum ultraviolet ion observed in m [NASA-TN-D-4776] 22 p3953 N68-35072 Mechanism and design para ixing and separation of nitro 17 p2875 N68-28368 meter effects in stream gen tetroxide-hydrazine TR-0158/9260-01/-3] 03 p0389 N68-12282 (NASA-TT-F-115271 17 p2876 N68-28560 [NASA-CR-72444] Shock wave reflect 24 p4335 N68-37831 ons in mixtures of argon and ed for studies of kinetics of NITROGEN 15 polar upper atmosphere (NASA-TM-X-63280) decomposition reaction (WRE-TN-CPD-114) Comparison of proton-tritium, and proton-helium 3 reactions with nitrogen 15, and carbon 13 targets [UCRL-17790] 05 p0717 N68-14720 18 p3066 N68-29770 08 p1255 N68-17321 Tabulated noctilu Alaska, Canada, G Hemisphere during p [UAG-R-191] data as observed from iceland, and Southern Computer calculations and equilibrit ick wave relaxation re-ir pure carbon dioxide - 1966 22 p3866 N68-34883 Electromagnetic tran ygen 15 nuclei [JINR-P4-3684] in nitrogen 15 and oxand nitrous oxide [ARC-R&M-3472] 11 p1686 N68-21707 12 p1937 N68-22794 cals prepared from pyron with hydrogen perus-Nitroxide-type stable bira lidinic amines using oxida Particle-hole approach to n of nitrogen 15 and oxygen 15 m [JINR-P4-3674] iclear photoproduction irror nuclei 14 p2317 N68-25350 12 p1837 N68-22613 ICEA-R-31761 24 p4342 N68-3 Atomic energy levels and electromagnetic branching ratios in N 15 from C 13/He 3,px/N 15 reaction 17 p2925 N68-28523 Microwave cavity resonator used in study of gaseous ectron attachment to carbon and sulfur fluorides and tross oxide h in Som 15 p2517 N68-26164 Two and three nucleon on nitrogen 15, and fluorine 19 reactions at 42 MeV dusterings in boron 11, using /alpha, lithium 7/ NITRYL CHLORIBES 24 p4252 N68-38040 Chemical reaction of chlorine atoms with nitryl chloride 20 p3540 N68-32240 NODES ISTANDING WAVES Spectrographic analysis method of determining nitrogen 15 used for isotopic labeling [CEA-R-3410] 22 p3829 N68-35725 20 p3432 N68-33390 ting functions 14 n2280 N68-24643 MULISON Tracer chemistry study of nobelium by ion exchand alpha half life Direct and inverse photo and O 15 nuclei [BNL-TR-218] lear reactions on N 15 [UCRL-17996] 16 p2612 N68-27984 24 p4315 N68-37886 n and decay, fission of lement 104 17 p2842 N68-29047 Nobelium inotope fermium 244, and re [UCRL-17907] 22 p3799 N68-34916 STEROGEN 16 Nuclear structure of nitrogen 16, and measurements of energy level widths and angular distributions ob-served in reactions Cross section a ternation during tom cyclotron surements of element 102 isotope ediation of Pu targets with O ions 24 p4238 N68-37590 19 p3324 N68-31065 ODULES. 19 p3320 N68-30870 Genchemical study of m [COO-1540-8] NITROGLYCERIN 14 p2211 N66-24563 in of rare outh abundances Detonation rates and combustion shock waves of nitroglycerin charges and mixtures NOBLE GASES 02 p0283 N68-11465 NOBLE METALS
NT COPPER
NT GOLD
NT GOLD ISOTOPES
NT GOLD 198
NT SILVER in manganese ([DSR-78841] 23 p4056 N68-36557 NITROMETHANE Calculated activation energy for shock wave detona-on criteria of liquid nitromethane huly of different techniques of analyz-measured by neutron counters 19 p3309 N46-31227 08 p1256 N68-17721 Eulerian, reactive, numerical, hydrodynamic code for calculating failure of nitromethane detonations resulting from side rarefaction cooling of explosives in-side reaction zones

s of noble metals, cuprous ha-

12 p1953 N68-22128

Hypothetical model for d-electron interactions, and showe energy of fcc and bcc structures of noble

06 p0892 N68-15118

lides, and alkali halid [NASA-CR-92571]

09 p1449 N68-18871

23 p4013 N68-36975

se, and TNT time dependent

AERODYNAMIC NOISE AIRCRAFT NOISE ENGINE NOISE JET AIRCRAFT NOISE

T

(INC

Po main [INC

Co reduc [INC

noine [INC

No engin

INC

Sociernal craft i (INC)

imp jet en INC

Tur

Ain

IINC/

Two

Ope

Sym

met (USA/

Systerence

(UCR)

(G368

IN.S.

reducti [NASA

NASA

Noise 124 ain [NASA

Perfo

reduce [NASA

Helic part of a ISVR-

NASA

Jet air

Acou noise re (NASA-

Turb

NASA-

Nois

Naci

noise stability and effici 04 p0478 N68-13309 ter simulation of tape Fourier series dig recording process - sign white Gaussian noise [NASA-CR-92576] 06 p0807 N68-15347 Detection of monaural signals as function or accordance ral noise correlation and signal frequency 13 p2004 N68-23389 Helicopter rotor blade r part of overall program of a [ISVR-TR-5] radiation analyzed as 17 p2921 N68-28970 Judgment tests conduct or loudness of tones plus to [NASA-CR-1117] determine noise levels 18 p3015 N68-30602 Sound transmissi multifamily buildin [AD-669933] es and noise reduction in 18 p3125 N68-30736 ission and propagation uted sources 18 p3125 N68-30802 Acoustics and sound to from volume and surface d [NRL-MEMO-1865] Distribution theory to ent stochastic modulation and noise processe [NASA-TM-X-61230] 21 p3660 N68-34322 rion for personnel ex-AD-6732231 22 p3812 N68-35507 U HAZARDS NOISE INTENSITY Procedures for d areas resulting fr (BBN-1511) in airport vicinity 01 g0003 N68-10027 Aircraft noise asts for Kennedy International Airport [FAA-DS-67-15] 01 p0003 N68-10088 in vicinity of airport (FAA-DS-67-14) 01 p0003 N68-10089 for Los Angeles Interand 1975 01 p0004 N68-10528 sed to deterr craft noise 01 p0029 N68-10530 g process, auditory dis-intensity, and pitch dis-04 p0462 N68-13474 ncy stability, and n power of klystron 07 p0978 N68-16940 del structures to mrand fields of variation (NASA-CR-66576) 11 p1794 N68-20995 Criteria for as g damage risk from im-TM-13-67] 11 p1636 N68-21368 in reaction time to range of roudy and re [AMRL-763] 11 p1640 N68-21485 Noise level of p aft as function of flight [NASA-TT-F-11741] 13 p1991 N68-23534 ents - March-May [ER-18] 13 p2061 N68-23698 Acoustic measurements of noise from freely flowing oud traffic and method for predicting traffic noise (NPL-AERO-AC-29) 14 p2298 N68-24777 heric noise field 14 p2251 N68-25212 ion of aircraft ground mis for new aircraft 14 p2188 N68-25618 ct of design and flight characteristics of jets [NASA-CR-1053] 15 p2388 N68-26930 on human performance ry, and dexterity 19 p3215 N&S-31190 High intensity soil in visual discrimination [AMRL-TR-67-119] High intensity and n for accountic tenting of 19 p3260 N68-32129 Fam and compresso mine reduction test de [D6-11226TN] ation sources and 20 p3395 N68-32194 ng maximum jet aircraft and static and flight condi-

and converting values to overall sound pressure NOISE METERS levels [D6-15082TN, REV. A] oratory test results for prototype Epcylon nois dose meter [AAEE/TECH/360/ENG] 20 p3396 N68-32197 16 p2664 N68-28114 d sound pressure levels NOISE PROPAGATION from jet aircraft exhaus (D6-2357TN, REV. A) Josephson junctions for use in millidegree noise ther-ometry 20 p3396 N68-32198 Computer program for sise intensity level at airport ning community 05 p0639 N68-14460 noise intensity [D6-4219TN] Excitation of cyclotron har nic noise in beam 20 p3397 N68-32202 Community noise intensity during takeoff and landing as [D6-9375TN] vels for various aircraft action of flight altitude 20 p3397 N68-32203 10 p1573 N68-19851 Long period noise sources and propagation at large aperture seismic array /LASA/ [ESD-TR-68-176] 20 p3471 N68-32774 trolled Boeing 727 noise data [D6-9815TN] OISE REDUCTION 20 p3397 N68-32204 erials for reduction of hipboard piping systems -terials in water 01 p0100 N68-10868 g community loca-Graphical me survey of dissipa [NSRDC-2450] 20 p3397 N68-32205 Human reaction scale for jet aircraft noise to deter-ine relative effects of noise reduction procedures on IAPGC-TR-67-1311 02 p0191 N68-11214 human com (D6-4348) stallation of ne ors in steel plant air in-20 p3397 N68-32206 take supply syste [TN-6704.288] Far field analysis of engir tion and sound propagation ([D6-4241] 02 p0195 N68-11778 inlet, and inlet attenu Octave band analy nd and acceleration of temical installations 20 p3397 N68-32207 02 p0196 N68-11780 the measurements of noise intensity and sound to levels during in flight and ground operations 320B model [TR-6705.289] Microwave analysis and a ducing antenna noise by measurements in study of refrigerating waveguides of 707-320 [T6-2418] 20 p3397 N68-32209 NASA-CR-905431 02 p0189 N68-11792 ers for community bofan and turbojet Noise, traffic control, instrument flight, and other problems related to V/STOL aircraft [NASA-TM-X-60770] 04 p0439 N68-12964 engine cycles a [D6-8147] 20 p3398 N68-32211 d noise intensity levels and aerodynamic ce data on flyover noise during DC-9-30 VTOL aircraft noise as rela various lifting systems ted to size and power of 04 p0439 N68-13018 takeoff and las (DAC-337531 20 p3399 N68-32221 Siting and design criteria for airports, highway, and rail installations to reduce community noise intrusion arising from transportation facili m of measured noise in-red by turbofan engines tensity levels of DC-8-62 p with long fan discharge duc [DAC-33676] ty operations 05 p0698 N68-14189 20 p3399 N68-32222 Signal to noise ratio an coherent phase detectors reduction study [NASA-CR-80890] lysis at outputs of three or radio noise threshold Data acquisition and reduction moise intensity levels of DC-8 por gines with short fan discharge dus [DAC-33523] on of measured flyover owered by turbolan en-05 p0630 N68-14275 cts 20 p3399 N68-32223 reduction by absorpsured flyover noise id by turbofan engin neity levels of DC-8 th short fan discharge 05 p0732 N68-14808 ducts and prote [DAC-33524] Solid and air-b rge duct suppressors 20 p3399 N68-32224 c pressure waves mea-tion qualities of shielded (TR-R-549) oise intensity levels and aerodynamic sta on DC-8-55 and DC-8-61 aircraft REV.] 20 p3399 N68-32225 06 p0880 N68-15549 DAC-33379, REV. J arge tube design and charac-(REPT.-114) Lighthill meth ting turbojet aircraft 07 p0972 N68-16125 DAC-334811 tracteristics of radio-Structure a bernetic sys 20 p3400 N68-32226 t aircraft noise during takeoff and rela-tise intensity levels and aircraft design 20 p3400 N68-32227 noise reduction (JPRS-44470) 07 p0963 N68-16524 (DAC-33359) rating frequency, and Pump source effect on oise limitations in gas filled with JT3D-1 turbofan and inder flight path of DC-8-50 gine during takeoff and land-07 p0978 N68-16939 etical evaluations of ppression in rocket en-(LB-30637) 20 p3400 N68-32228 er flight path of DC-8 with ring takeoff, and selection Noise intensity levels a JT3C-6 turbofan engine NASA-TN-D-44421 08 p1233 N68-18249 Internal noise reduction in inf
[ASR-2] JT3C-6 turbofan engine during takeoff, and selection of runway lengths and engine power reduction [8M-23641, REV.] 20 p3400 N68-32229 rared detectors 09 p1406 N68-18400 Noise intensity levels during takeoff under flight path of DC-8 with JT4A-9 turbofan engines and Daisy-Ejec-[NASA-TM-X-57689] 09 p1271 N68-19212 Partial choking and application of acoustic materials to vanes, struts, and duct walls to reduce jet engine (512) 777 20 p3400 N68-32230 rmining noise intensity turbulent jets 20 p3400 N68-32231 SM-23246] (DS-68-7) 11 p1744 N68-20873 ucer with electric and ires for measuring cur-Statistical transient behavior of phase-locked loops due to abrupt changes in carrier wave signal and noise levels mall organisms 14 p2206 N68-25060 (NASA-TN-D-4590) 21 p3657 N68-33967 n of noise level ficting shock wave d for pred 14 p2185 N68-25217 22 p3804 N68-34923 e applied to anning sonic boom waveforms 14 p2185 N68-25287 [NASA-CR-1192] Metropolitan a noise effects on p [INC/C2/P3] ng for reducing aircraft 22 p3810 N68-35103 n in subsonic wind tun-ments on bodies in flow 22 p3801 N68-35997 14 p2185 N68-25292 easures during main-Aircraft noi (INC/C6/P5) Near field noise of F-89 sircraft [SC-DR-67-803] 14 p2186 N68-25322 23 p3991 N68-36925 reduction studies for U ACOUSTIC MEASUREMENTS 14 p2186 N68-25361

es to reduce aircraft Takeoff and landing proce noise levels
[INC/C3/P3] 14 p2187 N68-25362 increased distance between maintenance area and opulation center for ground aircraft test noise reducpopulation ce tion (INC/C6/P9) 14 p2187 N68-25363 Portable suppressors ne engine ground [INC/C6/P7] 14 p2187 N68-25386 Operations res craft noise [INC/C2/P5] thods for reducing air-14 p2188 N68-25552 Longitudinal tubes, retractable silencers, and central last pipes for reducing jet noise of Concorde super-[INC/C1/P17] 14 p2188 N68-25599 Cost estimates and allocat educe aircraft noise ns for techniques used to [INC/C2/P4] 14 p2188 N68-25610 ion of aircraft ground ents for new aircraft 14 p2188 N68-25618 Noise reduction problems of jet engines and turbojet (INC/C1/P6) 14 p2189 N68-25621 Noise insulation and noise level reduction methods for houses in airport vicinity [INC/CS/P3] 14 p2378 N68-25625 14 p2378 N68-25625 Socio-psychological surveys as basis for making in-ernational political and technical decisions on jet air-raft noise reduction procedures craft noise re-14 p2189 N68-25629 parations of measures to reduce ground running jet engine noise at civil airports [INC/C6/P8] Turbojet airo 14 p2189 N68-25636 Aircraft noise a erational methods and engineering sol (INC/C1/P161 14 p2189 N68-25641 Two segment noi (INC/C3/P5) approach to landing 14 p2189 N68-25642 Operational noise abstern ing reduction in safety margi [INC/C3/P8] dures and resi 14 p2190 N68-25643 federal aircraft noise Symmary status re salement program 15 p2385 N68-26019 tics of protective hel-15 p2401 N68-26382 (USAARU-68-61 ng electromagnetic inter-amociated with electronic (OCRL-181111 15 p2427 N68-26399 old detector for radio recep-[G3681.02.05A] 15 p2468 N68-26456 Nacelle design for turbofan e suppression on Douglas DC-8 at [NASA-CR-1056] 15 p2547 N68-26771 Inlet guide vane spac reduction in turbojet es [NASA-TM-X-59214] ng effects on compressor noise 16 p2751 N68-27443 NASA research of ion of aircraft noise 16 p2589 N68-27695 Summary informat steepened flight paths 6 [NASA-TM-X-59217] ise reduction duri off and landing of Tu-124 aircraft (NASA-TT-F-11557) 16 p2590 N68-28020 nd economic costs to ersonic transport 17 p2805 N68-28831 Performance requireduce cruise sonic bo [NASA-TN-D-4677] Helicopter rotor blade part of overall program of [ISVR-TR-5] radiation analyzed as 17 p2921 N68-28970 at city center terminals, for and engine noise 17 p2808 N68-28990 VTOL noise level pro d techniques for reduc Inlet guide vane choking n compressors [NASA-TN-D-4682] e reduction in axial flow 17 p2809 N68-29406 Jet aircraft engine noi [D6-20609] 18 p3001 N68-29873 et engine intake system noise reduction suppr [NASA-TN-D-4639] 1 p3001 N68-29887 on by increasing intake Turbojet engine noi system guide vane-rote [NASA-TN-D-4690] D6-8087] 18 p3157 N68-30040

Structural acoustics sonic civil aircraft deve (85T/8748-7/2966)

s in Concorde super-18 p3002 N68-30370

176-31731 T6-31601 [D6-9045] of 707-320 1T6-24181 0.000

busic and I gines in 720 [T6-2111] multifamily be [AD-6699331 18 p3125 N68-30736 roblems, and proposed noise suppression 19 p3197 N68-30949 inlet duct nt techniques, air to roblems, and aircraft 19 p3359 N68-31513 noise reduction in turbob [D6-17100, V. 1] Comments ng materials for fan 20 p3395 N68-32190 [D2-2463] Computer program on ducted flow exp materials for fan noise [D6-17100, V. 2] alating acoustical data and evaluating lining in turbofan engines 20 p3395 N66-32191 D6-21201 Acoustic near and far field data and thrust charac-ristics on nozzle configurations to reduce jet aircra ID6-15071, V. 21 20 n3395 N68-32192 method for ejector jet rws, and shroud length Far field acoustic 20 p3395 N68-32193 Fan and compresso tion sources and (D6-11226TN) 20 p3395 N68-32194 ducts for jet engine on 20 p3396 N68-32195 Mean velocity an rations for jet aircra [D6-15071, V. 1] ns on nozzie config ction 20 p3396 N68-32196 maximum jet airces static and flight cond overall sound pressu [D6-15082TN, REV. A] 20 p3396 N68-32197 sound pressure levels from jet aircraft exhaus (D6-2357TN, REV, A) 20 p3396 N68-32198 Fan discharge noise i treated high velocity duct [T6-3166] on test on acoustically of turbofan engine 20 p3396 N68-32199 J-75 engine inlet noise spersonic inlet design w ion test using simulated induble spike 20 p3396 N68-32200 er and exhaust deflector 20 p3396 N68-32201 11.3-306371 Computer program for a noise intensity level at airport (D6-4219TN) mining common 20 p3397 N68-32202 levels for various aircraft function of flight altitude 20 p3397 N68-32203 Reducing effects trolled Boeing 727 s (D6-9815TN) 20 p3397 N68-32204 Graphical meth tion of peak noise [D6-9582TN] our lines 20 p3397 N68-32205 uman reaction scale for jet aircraft noise to deter-e relative effects of noise reduction procedures on 20 p3397 N68-32206 let, and inlet atten Far field analysis of engin tion and sound propagation of [D6-4241] 20 p3397 N68-32207 arbofan engine design simulating exhaust flow 20 p3397 N68-32208 one intensity and sound and ground operation 20 p3397 N68-32309 of jet engine noise contain-conents in presence of ren-20 p3397 N68-32210 eters for community proofen and turbuic 20 p3398 N68-32211

ed transmission in ab-ofan engine rotational

20 p3396 N68-32212 ne for field noise spec-

20 p3399 N68-32213

of JT3D-1 turbules of 20 p3398 N68-32214 20 p3398 N68-32215 20 p3398 N64-32216 n of model air jet 20 p3398 N64-32217 20 p3399 N68-32218 na aerodynamic li used as noise mes IDAC-33722] 20 p3399 N68-32219 mestic foligue strength lication to reduce fan 20 p3399 N68-32220 vels and serodynamic naise during DC-9-30 20 p3399 N68-32221 of measured noise in-20 p3399 N68-32222 Data acquisition and reduc one intensity levels of DC-8 n of measured Syrves wered by turboliss engines with short DAC-335231 20 p3399 N64-32223 neity levels of DC-8 ith short fan discharge 20 p3390 N68-32224 eveh and nerodynamic and DC-8-41 niveralt 20 p3399 N68-32225 DC.8.55 Lighthill met DAC-334811 20 p3400 N68-32226 buring takeoff and sele-te and aircraft design 20 p3400 N68-32227 DAC-33359) flight path of DC-8-50 Juring takent and land Noise intensity leve th JT3D-1 turbules 20 p3400 N68-32228 light path of DC-8 with takeoff, and extention Noise intensity leve JT9C-6 turbolus engi SM-23641, REV. keriff under flight publisher und Dairy-Ejec of DC-4 with JT4A-9 turbolu (SM-23787) 20 p3400 N68-32230 Similarity the propagation in st metaliset jete 20 p3400 N66-32231 ating performance of cylinter of cylinter of cylinter of cylin 20 p3401 N68-32232 Working charts t drical and conical a [LB-25320] \$34-14385, REV.) 20 p3401 N68-32233 20 p3392 N68-33010 Noise reduction in of physiological and p [NASA-CE-1155] PR-1783-51 21 p3623 N68-33 IASA-SP-18

Oper prototy radiogra (NASA

Fatig

Feani

dreign, (NASA

Feasi

NASA

TRG-1

Ultra tions to (NEL-2

Ultra

Ultra

TN-66

TN-66

Ultras type AS TN-66

Ultra

Liter

There and cor

(PB-174

Gam

charges (RT/IN

ANL-7

Eddy tion of E [ANL-7

Acousting of BNWL

Cryog

N/GA

Ultras of high to (AERE-

Effect

destruct [NELC-

Prepa [A8]

NASA-

methods (EUR-3

Deiny

ILA-374

Nonde tion of w [NASA-

Ultra

Ultra

ic design theory for 22 p3804 N68-34920 of aerodynamic body in 22 p3855 N68-34921 atmospheric effects on mic boom reduction 22 p3804 N68-34922 rge current noise reductive fo (NASA-CR-1173) 22 p3886 N68-35099 ce - problems of elec-identifying, measuring teduction or and u and reducing nois (CONF-480303) 22 p3915 N68-35118 n in Zener diodes 22 p3846 N68-35122 principles - impedance rtic fields 22 p3915 N68-35124 protection as aspect of procedures, and hardm - crit 22 p3916 N68-35127 22 p3916 N68-35129 22 p3916 N68-35130 o in low level data 22 p3874 N68-35134 ectrical noise pickup in 22 p3816 N68-35135 of noise filters 22 p3846 N68-35137 Noise problems in reactor i rument systems 22 p3875 N68-35138 n in powering systems 22 p3807 N68-35139 sed for certifying air-[FAA-68-34] 23 p3987 N68-36068 Review of blade sk for determining noise in [NASA-CR-1221] 24 p4197 N68-37932 WORSE SPECTRA Data processing proce (LYCEN-6716) 03 p0391 N68-12482 Field effect to ture and frequen (BNL-11783) action of tempera-05 p0638 N68-14593 ction and refracorms of jet noises 05 p0702 N68-14627 curements of neutron ctors, and analog com-05 p0664 N68-14897 [FAA-DS-47-21] 07 p0950 N68-16677 ity laws for co c of near el line en NASA-CR-93434 10 p1559 N68-20094 for signal processing NOLTR-67-197 11 p1659 N68-20657 or of hot plasma SC-RR-67-2964) 11 p1660 N68-21033 11 p1740 N68-21143 PED-TR-47-995 11 p1747 N68-21518 in metal oxide semicon 11 p1675 N68-21804 density of low frequency

14 g2297 N68-24544

[NASA-TM-X-63216] etospheric radio noise 14 p2344 N68-24733 Calculating maxin re spectrum of jet [INC/C1/P18] 14 p2189 N68-25628 Noise transport of crossed field space charge flow in electron guns 15 p2452 N68-26182 (AFCRL-68-0115) 16 p2711 N68-26985 Engine noise spectra and hot and cold flow model jets [D6-20601TN] acoustic scaling between 18 p3057 N68-29590 lyzing and evaluating Computer program for ctra and loudness of soni 18 p3003 N68-30587 Theoretical and experiment plex signal reflections on acturbojet engines al data on effects of com-ustic pressure spectra of 19 p3197 N68-30932 Pressure gage for measuring electrical noise environmen me-varying pressures typical of capacitor discharge systems (TR-0138/3240-10/-9) 19 p3276 N68-31237 g static turbofan engine far field noise spec-nd pressure levels 20 p3398 N68-32213 Measurement of noise factor in high frequency trans-20 p3448 N68-32386 Long period noise sources and propagation at large aperture seismic array /LASA/ [ESD-TR-68-176] 20 p3471 N68-32774 20 p3471 N68-32774 Measuring axial and radial acceleration to determine site spectra of tapered roller bearings rarings 21 p3695 N68-33695

NOISE STORMS Solar radio noise and optical sunspot phenomena [AFCRL-67-0508] 01 p0 130 N68-10352 NOISE THRESHOLD Investigation of signal to nois mission efficiency for space con [NASA-CR-90095] on pooso N68-10729

[TM-10-67] 01 p0017 N68-10825 Signal to noise r coherent phase det reduction study [NASA-CR-80890] analysis at outputs of three is for radio noise threshold 05 p0630 N68-14275

in man and audi prolonged exposure [NASA-TT-F-11396] 07 p0942 N68-16130

08 p1132 N68-17757 11 p1672 N68-20792

sporary threshold shift ness shift 13 p1997 N68-23160

phase locked to frequency modular NASA-CR-94775) 14 p2226 N68-25366

19 p3218 N68-31925 engine, turboprop, and

Human evaluati turbojet aircraft sc (FAX-NO-68-35) 21 p3619 N68-33633 ed approximation ford Jevel m mula for acoustic perc [NASA-TT-F-11926]

23 p4001 N68-36316 ISE TOLERANCE

[TM-12-67] 01 p0017 N68-10776 O p1286 N68-18329 [FAA-D8-67-22]

and bibl [NASA-TM-X-60904] 09 p1383 N68-18952 maintenance area sho reraft test noise reduc

14 p2187 N68-25363

could narrow band noises to white noises for subjective response to aircraft noise
[INC/C4/P20] 14 p2187 N68-25435 on efforts of individual and ([INC/C4/P9] u to aircraft noise 14 p2188 N68-25522

recordings of stress effects ctions to noise tolerance 17 p2819 N68-28513

Awakening and startle effects of simulated sonic [NASA-CR-1193] 20 p3407 N68-33005

Statistical analysis of ethods for predicting aco of aircraft noise measuring acoustic intensity and tolerand [FAA-NO-68-33] 21 p3619 N68-33632

NOMENCLATURES Notation and no clature for equations of motion of aircraft dynamics [RAE-TR-66200, PT. 3]

04 p0433 N68-13058

titude angles, direction systems for aircraft dyna (RAE-TR-60200, PT. 2) 04 p0433 N68-13059

04 p0433 N68-13135 ion data for aircraft ics and associat and symbols system [RAE-TR-66200, PT. 5]

04 p0438 N68-13891 c basic definitions, is, and relations, expe

cluding aerodynamic coe sions, and derivatives of f [RAE-TR-66200, PT. 4] 04 p0438 N68-13895

Formal analysis of ch otation systems 13 p2178 N68-24109

U APPROXIMATION NOMOGRAMS U NOMOGRAPHS

NOMOGRAPHS Nomographic rep [TR-2] of geoids 01 p0059 N68-10678 weather patterns frequen-[TR-68-40-ES] 15 p2460 N68-26297

ONADIABATIC CONDITIONS

U ADIABATIC CONDITIONS

NONADIABATIC THEORY Motion of single charged partic mirrors and detection articles in trup with mag-of nonadiabatic electron [UCRL-TRANS-1358] 07 p1044 N68-16513

16 p2794 N68-27578

electron motion in axi-[NASA-TT-F-11653] 16 p2728 N68-28056 to mesic and hydrogen Oppenheimer approxi-

22 p3926 N68-35034

ONAXISYMMETRY U ASYMMETRY

NONCONDENSIBLE GASES

Noncondensible gas conce see of cold horizontal wat ash distillation allic interfaces 01 p0150 N68-10416 [TAE-60]

ONCONDUCTORS
U ELECTRICAL INSULATION **IONCONSERVATIVE FORCES**

15 p2521 N68-26518

21 p3787 N68-33945 ONDESTRUCTIVE TESTS NT PRELAUNCH TESTS NT STATIC FIRING

cting lack of penetra-01 p0067 N68-10131

A-816

Literature survey and fea liquid crystals as nondestruc-aircraft structures and assemb [NAEC-AML-2634] subility study for use of ctive inspection tools for 01 p0024 N68-10770 Operating and ma rototype in-space e procedures manual for tructive ultrasonic and raciographic test uni [NASA-CR-90043] 01 p0070 N68-10792 Fatigue crack growth ventel steel [KAPL-P-3362] es for unirradiated pressure 01 p0078 N68-10897 Fessibility of nor vironment - environ-design, manufacture. [NASA-CR-90042] ve testing in space en-ting, prototype hardware 01 p0071 N68-10953 Feasibility of nor vironment - propos nondestructive test u [NASA-CR-90044] uctive testing in space en-ght hardware for prototype 01 p0071 N68-10958 or reactor fuel element [TRG-1427/S/] 02 p0237 N68-11184 vibrator and applica-02 p0213 N68-11788 Ultrasonic ins sure pump KRS [TN-6607.256] n of 8182 cylinders of high pres-02 p0218 N68-11815 n of 8182 cylinders of KRS high Ultrasonic inspecti TN-6607.2571 02 p0218 N68-11816 Ultrasonic impection of 8182 cylinders of KRS high pressure pump cast from parts
[TN-6607.258] 02 p0218 N68-11817 Ultrasonic inspection of L and T welds in CCN-012 -Mario D'Almeida ship [TN-6702.284] 02 p0218 N68-11822 Ultraconic inspection of special quality steel plates type ASTM A-204 Gr B [TN-6610.271] 02 p0219 N68-11823 Ultrasonic inspection of h plates - procedures and equi [TN-6608.263-A] n of high quality steel sheets and 02 p0219 N68-11824 Literature survey of ultra [AMRA-MS-67-06] 03 ±0347 N64-12272 ers of lithium borate mental mechanics and and vibration 04 p0599 N68-13068 Thermoluminescent dosing and common areas of expendestructive testing in shoce PB-174978] il mechanics and non-ibration 04 p0587 N68-13070 Gamma scanning and cob destructive evaluation of bu-charges of nuclear fuel sample [RT/ING/67/14] alt monitoring for non-m up in two irradiated 04 p0538 N68-13377 detection of defects in ANL-7352] 05 p0679 N68-13937 nondestructive impec-05 p0665 N68-13938 ning of metals NWL-SA-1262] 05 p0666 N68-14190 Cryogenic proof to tect small defects in tankage, and crack propagation charact (NASA-CR-65811) 05 p0676 N68-14576 Ultrasonic pulse met of high tension insulator (AERE-TRANS-1077) destructive testing 05 p0668 N68-14811 red mapping and non-diability acrossing 06 p0816 N68-15692 on of indigenous dye AS 07 p1002 N68-16235 Fabrication, nendestructive pressure testing of 260 SL-1 cs [NASA-CR-54871] testing, and hydrostatic 07 p1073 N68-16477 Working procedure methods in steel foundr (EUR-3645.F) isotopic measuring 07 p1004 N68-17126 Delayed neutron ki estructive detection, ponse methods for son-tion, and analysis of fis-[LA-3741] 08 p1212 N68-17437 ting for rapid impec-alloys 09 p1347 N68-18625 Nondestructive ution of weld defects (NASA-CR-61583) External visual insp iteria for aemico [NASA-TM-X-60946] 10 p1505 Nas-19589

res evaluated for use in electromagnetic testin [AMMRC-TR-67-06] 10 p1505 N68-19885 Double sampling table tistical quality control BRL-R-1382] 10 p1534 N68-20101 Annotated hibliographic testing [AMMRC-MS-67-03] 10 p1535 N68-20334 **Eddy current testi** [JEN-179-DME/I-15] 17 p1702 N68-20601 Ultrasonic method for a destructively detect Reds BNWL-SA-1467] 11 p1703 N68-20950 Post-irradiation examples from Car CVTR/ [WCAP-3850-1] 11 p1742 N68-21272 es for nonde determination of we [NASA-CR-73207] electronic circuits 11 p1708 N68-21683 Selected abstrac evaluating strength of [NASA-CR-61747] tallic materials 12 p1882 N68-22766 Bibliographic list on ing strength of bonded [NASA-CR-61748] ctive tests for evaluat-12 p1882 N68-22767 destructive test of ruby crystal imperfections by APCRL-67-0648 13 p2131 N68-23136 Nondestructive tests ing techniques for alum (NASA-CR-72288) chanics, and weld-13 p2084 N68-23923 r lunar landing site and for th laboratory Rock testing techniques funar tamples returned to et NASA-CR-61201) 13 p2154 N68-24196 Acoustic energy emissic related to nondestructive (UCRL-70750) from plastic deformations 14 p2266 N68-25456 Calibrated reference estructive materials test cks for ultrasonic non-[A14] 15 p2472 N68-25811 Ultrasonic radiography for w butt joints of Saturn 5 S-1C stage [NASA-TM-X-53700] r weld flaw detection in 15 p2472 N68-25831 reraft structures, design 16 p2782 N68-27849 Nondestructive testing programmed instruction text on forging, casting, extrusion, welding, and processing discontinuities [NASA-CR-61204] 17 p2890 N68-28776 ng textbook on liquid Programmed instru Penetrant nondestru-NASA-CR-61205] 17 p2891 N68-28777 ook on noo magnetic particle ter [NASA-CR-61206] 17 p2891 N68-28778 book on principles of ructive testing 17 p2891 N68-28779 Equipment, methorents in nondestruction textbook [NASA-CR-61208] tions for eddy cur-17 p2891 N68-28780 Basic theory and pri ondestructive testing [NASA-CR-61209] 17 p2891 N68-28781 Test equipment as testing - programme destructive testing [NASA-CR-61210] ries used in ultrasome or textbook on non-17 p2891 N68-28782 Selection of test ethods for ultrason tion textbook on not NASA-CR-612111 17 p2892 N68-28783 Origin and nat and scattering - progress to troting using real NASA-CR-612121 17 p2892 N68-28784 NASA-CR-612131 ook on X ray genera

NASA-CR-61215) 17 p2892 N68-28787 handling related to g - programmed instruction textbook [NASA-CR-61216] 17 p2092 N68-28788 Classroom training for use in tes NASA-CR-61227] 17 p2892 N68-28789 m tri INASA-CR-612281 17 p2893 N68-28790 y of surface discour 17 p2893 N68-28791 Eddy current pri ing reviewed in char room training textle 17 p2893 N68-28792 festructive testing 17 p2893 N68-28793 methods and equipment [NASA-CR-61231] continuent 17 p2895 N68-29311 procedure for BNWL-6491 diagraphy method of (DOUGLAS PAPER-4740) 18 p3152 N68-30057 ive tests of organic EUR-3929.E1 18 p3116 NSS-30289 metal fatigue and crack AFO52-68-11621 18 p3180 1468-304 cerunic facts 19 p3232 1008-31945 Nondestructive oxygen ratios in (RT/ING/67/7) ese 196-31945 rgical delects in [FTD-MT-66-45] 19 p3286 N68-31985 Flaw d (FTD-HTT-23-252-67) 20 p3484 N68-32388 [FA-M68-16-1] 20 p3543 Nua-32597 20 p3533 N64-33316 [CVNA-289] at, and critical ang [BNWL-SA-1395] lyser for non-21 p3694 1468-34712 cting defects in NASA-CR-6[952] 22 p3894 NAS-33646 stigue of abuninum al-series (MAS-22 p3891 NAS-35652 team of Sandin thick 6/E/111 Stress core NASA-TM-X-53772) 23 p4083 N68-34650 and the same of 4 p0027 1460-136 00 p1431 N68-19331

SUBJ

and h

(BNI

Connonlin citati [NAS

Nu ters of (IBK-

No

REP

deten [NAS

Her (TR-5

Les linear variat

Mer compr spectr (NAS

Qui

Ger

AP

(FID

Non

Nur elliptic theory [NAS

Non gradie NAS

Rote

[NAS

Com crete t [NAS/

Interferometric study of nonequilibrium sho reflection process and thermal conductivity in ioniz Thermal insulation, and fire protecting properties of andidate space suit materials 09 p1288 N68-18752 [NASA-CR-97252] 23 p4143 N68-37052 16 p2648 N68-27820 Flame protection afforded mice by noncombustible Transport equations for partially and fully ionized onequilibrium gases imental simulation to establish accuracy of librium flow model with system simulating during ablation garments in pure oxygen atmo [SAM-TR-67-91] 11 p1642 N68-21752 charring during ablatinASA-CR-66646] 24 p4323 N68-37454 Acceptability of polyamide fire resistant flight 17 p2988 N68-29476 Slender two dimensional t NONEQUILIBRIUM DRAG al bodies of minimum wave sersonic flow [NADC-AC-6809] 13 p2006 N68-23969 drag in nonequilibrium [NASA-TT-F-11803] Mathematical model for gration waves along alternate s uiding and forming detona-surfaces of explosives and NONEQUILIBRIUM FLOW 18 p2998 N68-30388 Aerothermochemistry re with vibrational relaxation, pansion, flow field character research programs dealing on, thermal stability, wave ex-teristics, and other aspects of ear small perturbation theory for [REPT.-12/66] 18 n3189 N68-30396 (IA-1351 Test data analysis of combustion, and fla terior materials 19 p3265 N68-31688 FORTRAN 4 programs for dimensional and axisymmetr flow fields and improving delivered specific impulse ming rate, ignition time, heat ability index of aircraft cabin nonequilibrium nozzle fi [AGARD-CP-12, V. 2] ms for calculating inviscid, one-nmetric nonequilibrium nozzle ving analytical predictions of 01 p0048 N68-10107 [NA-68-30] Vibrational relaxation in supersonic nozzle flows, nonequilibrium airflow over flat plate with large-angle wedge leading edge, and flow fields about blunt bodies at arbitrary augle of attack 19 p3297 N68-31041 IONGRAY ATMOSPHERES delivered specific is [NASA-CR-1123] 20 p3577 N68-32793 Approximate expres n for nongray temperature NONEQUILIBRIUM IONIZATION 01 p0048 N68-10108 05 p0739 N68-14917 Screened Coulomb formulation of ionization equilibrium equation [NRL-6594] 02 p0242 N68-11162 nt of nonequilibrium flow Differential approximations used to determine effects of nongray gas behavior and nonequilibrium ionization in radiating hypersonic shock layers [NASA-CR-92990] 07 p0983 N68-16368 01 p0049 N68-10111 densation of vapor and vapor-gas mixtures in allibrium supersonic nozzle flows 01 p0049 N68-10113 in potassium gas mag-[AI-67-138] 03 p0400 N68-11928 [NASA-CR-95734] 17 p2972 N68-29431 Differential approximation fects of nongray gas beha-ionization in radiating hypers [NASA-CR-92990] adden freezing approxima-equilibrium nozzle flows 01 p0049 N68-10115 used to determine ef-ior and nonequilibrium Temperature structure of nongrey planetary atc shock layers 07 p0983 N68-16368 19 p3363 N68-31183 en-freezing criteria and numerical procedures dicting nonequilibrium flow properties and impulse performance of rocket expansion noz-NONHOLONOMIC EQUATIONS Magnetohydrodynamic boundary layers studied with existing difference in electron and heavy particle tem-Equations of motion and influ ters in dynamics of nonholonomi nce of small parameic systems 24 p4301 N68-37802 NASA-CR-94537] 13 p2124 N68-23191 01 p0147 N68-10116 Effect of disturbances in Langmuir layer of cathode on ionization rate in arc discharges [FEI-96] 19 p3341 N68-31585 ifferential equa ent flow in che sundary layer NONHOMOGENEITY U INHOMOGENEITY m for describing gas com-moquilibrium gas mixture NONISOTHERMAL PROCESSES
U ISOTHERMAL PROCESSES 01 p0052 N68-10619 em radiation and ionization in shock Calculations of diatomic gas flow beyond equilibrium around dihedral configuration in hypersonic shock take NONISOTROPIC PLATES
U ANISOTROPIC PLATES 22 p3927 N68-35166 Electron temperature and nonequ of plasma in nonseeded argon mag working medium [TH/68-E-02] 22 equilibrium ionizati agnetohydrodynan NONISOTROPY U ANISOTROPY 01 p0053 N68-10981 Computer program details and operating procedur for computations of nonequilibrium flow of viscos radiating fluid about blunt axisymmetric body [CAL-Abl-2113-Y-1, V-2] 22 p3945 N68-35781 NONLIFTING VEHICLES
U BALLISTIC VEHICLES NONEQUILIBRIUM PLASMAS NONLINEAR EQUATIONS
NT CUBIC EQUATIONS
NT DUFFING DIFFERENTIAL EQUATION Energy convection effects on a 02 p0199 N68-11360 [R67SD61] 02 p0252 N68-11221 Fortran 4 computer program for calculating onequilibrium flow of viscous, radiating fluid about that an investment is honor. NT MONGE-AMPERE EQUATION NT QUADRATIC EQUATIONS librium plasmas in blunt axisymmetric body (CAL-AM-2113-Y-1, V. 1) Asymptotic formulas for initial value problems of onlinear differential equations with small parameter 06 p0894 N68-15600 [D1-82-0650] 02 p0158 N68-11375 Solution of Boltzmann, electronic states in rate equations for bour nonequilibrium ma Digital computer assisted computers of inviscid, reacting gas over an lower body many method of charact tation of supersonic sooth, three dimen-01 p0084 N68-10472 Computer programs to plot curves and/or solve non-linear algebraic equations [KAPL-M-6709] 01 p0084 N68-10473 netohydrodynamic plast [NASA-TM-X-52190] 09 p1403 N68-19141 04 p0495 N68-13303 ing heat transfer in theorems for nonlinear LGI-67/18] on of oxygen 04 p0396 N68-13441 10 p1575 N68-20460 Dirichlet 01 p0086 N68-10859

sional body using meth [CAL-AM-1800-Y-4] Catalytic flat plate for [CAL-AF-1905-A-3] Hydrodynamic equations tropic nonequilibrium gas fo by friction and heat exchang s for colculating nonisen-low through nozzle induced NASA-TM-X-52291]

07 p0986 N68-16856 Similarity of n air expansions in hyper-(FDM-TM-67-1) 09 p1325 N68-18411

opersonic nozzle distomic lects in high enthalpy air-lat plates, and reentry Vibrational relaxation in a gas flow, nonequilibrium eff flow over thick wedge f nonequilibrium flow fields [NASA-CR-74170] 09 p1329 N68-19190

flow fields [NASA-CR-92057] 12 p1832 N68-22014

calculating vibrational dimensional convergent-Computer program emoquilibrium flow in 12 p1845 N68-22155

dy of effect of finite homogeneous as transfer in turbulent tube flow 13 p2166 N68-23192 Experimental stu reaction rates on her [NASA-CR-94538] Theoretical and exp

[AFOSR-68-0240] 13 p2054 N68-24044 ry layer on blunt nosed

DOC.488D2271 15 p2380 N68-25861 Application of methods of nonequilibria [NASA-TT-F-11691] 15 p2380 N68-25883

Radioactive nonequ JEN-167-SIG/I-51 21 p3738 N68-34033 equilibrium radiation and ic nization in shock 22 p3927 N68-35166

14 p2326 N68-25246

21 p3751 N68-34524

cy argon plasma 24 p4323 N68-37487

thermodynamic

NONEUCLIDIAN GEOMETRY
U DIFFERENTIAL GEOMETRY NONFLAMMABLE MATERIALS

NONEQUELIBRIUM RADIATION

[AEDC-TR-68-116]

Polyamide fiber material tested for use as protective clothing in industrial hazardous thermal environment [LD-17-67] 09 p1287 N68-18477

Development of fire extinguishing systems, and pre-tactive clothing for oxygen enriched atmospheres human nafety, space environment simulation chamber and accident prevention [AMD-TR-67-2] 09 p1287 N68-1874 09 p1287 N68-18744

Materials, and fire control methods for enhanced ersonnel survival in oxygen enriched atmosphere 09 p1288 N68-18746

Fire safety measures for hyperbaric diving simulators 09 p1288 N68-18749 General nonlis near operator equation for flat shell

(FTD-HT-66-745) 02 p0274 N68-11171 Singular point of Briot-Bouqu ordinary nonlinear differential ed [MRC-TSR-760] uet type for system of 02 p0227 N68-11204

ns for nonlinear operator scretization algorithms 02 p0229 N68-11502 Iterated deferred corre equations - convergence of dir [MRC-TSR-763]

Electric network for solving nonlinear diffusion puation with diffusion coefficient depending on characteristic funct (ONERA-TP-508) 03 p0331 N68-12130 Stability constraints for two general forms of coupled stems of second order nonlinear differential equa-

[NASA-CR-91108] 03 p0331 N68-12179 Downwash angles of flow be of low aspect ratio at subsonic ehind rectangular wings velocities calculated ac-

cording to nonlinear equat [RAE-LIB-TRANS-1247] 03 p0299 N68-12792

near invariants of Lebesgue space automor-04 p0530 N68-13327

Nonlinear equations of isotropic elastic spherical (AFOSR-67-2254) 04 p0589 N68-13385

inlinear hyperbolic equa-nd circular cylinder 04 p0436 N68-13458 Approximate se tions for superson [DLR-FB-67-34] Numerical solutions for systems of ordinary and non-sear partial differential equations for simultaneous

quasi-linear problems

(NASA-CR-91802)

chemical reaction and convective diffusion of steam and hydrogen through graphite (K-1724) 05 p0619 N68-14118

ear Dirichlet problem with application to

tational techniques for identifying linear and mechanical systems subject to random ex-

Numerical method for calculating criticality parameters of two zone reflected reactor with flat central zone [IBK-466] 08 pl 205 N68-17661

05 p0683 N68-14318

06 p0862 N68-15427

06 p0924 N68-16093

as theorem for solving Cauchy systems using two quasi-linear

EX

t of

752

752

ght

969

396

eat bin

141

ure

117

ef-um

168

131

at-

183

102

172

on-

473

ear

859

bell

171

of

204

stor

502

ion

130

led ua-

179

792

or-

327

ical

185

pa-

458

OR-

riding and requestial interpolating fil-

05 p0640 N68-14905

06 p1155 N68-17653

for Saturn 5 attitude con-

11 p1665 N68-21789

14 p2231 N68-24470

NONLINEAR FILTERS

trol in S-IC boost ph [NASA-CR-61549]

es for stress relaxation at wave Nonlinear equations fronts in viscoelastic rod [REPT.-23] 09 p1440 N68-18626 ear and nonlinear elliptic od order 09 p1361 N68-18632 Least squares method curve fitting, data smoot determined sets of equati [NASA-TM-X-63127] seory and application to ag, and solution of over-09 p1363 N68-19109 Iterative method for solving n onlinear equations 09 p1366 N68-19458 Least squares method for fitting second order non-linear equation to straight line approximation of state variables 10 p1544 N68-19598 Approximate solution to time dependent multigroup neutron diffusion equations using restricted variational principle 10 p1555 N68-19668 Methods for solving nonlinear algebraic equations in omputer programs for nuclear magnetic resonance (NASA-CR-93822) 10 p1490 N68-20194 Quadratically convergent method for solving simul-neous nonlinear equations 10 p1550 N68-20537 11 p1722 N68-20615 Approximate methods linear differential equation (FTD-MT-64-322) solving linear and non-11 p1726 N68-20901 ation for describing oscil-11 p1728 N68-20916 Existence and properties of integral manifold for nonlinear delay differential equations with variable coefficients 11 p1728 N68-20917 on nonlinear equation for Successive approximations of mass-energy relation to gravita 11 p1746 N68-21311 New approach to nonlinequations involving appropriate of first and second of chemical reaction rate nations to solution of er chemical reaction rate 12 p1833 N68-22081 Numerical methods for solving degenerate nonlinear liptic equations arising in optimal stochastic control [NASA-CR-94427] 12 p1854 N68-22812 ear theory of e 12 p1979 N68-22984 NASA-CR-94408) theorem of Krasnosele variants of f skii and applications to m [MRC-TSR-772] clution of scalinear equa-(MRC-TSR-774) 13 p2090 N68-23123 for nonlinear differential 13 p2093 N68-23442 algorithm for wonlinear regression and equal [NASA-CR-61780] 13 p2097 N68-24322 ve replacement method for 14 p2240 N68-24436 Computational aigns crete two point bounds [NASA-CR-87789] n for solving nonlinear disvalue problem 15 p2439 N68-25932 ng in deferred correction of 15 p2493 N68-26474

devices for systems of non tack control devices differential equations 15 p2442 N68-26663 [MRC-TSR-844] rical solution of hyper-tions by method of (NOLTR-68-7) 15 p2495 N68-26769 and convergence theory nlinear equations 16 p2699 N68-28252 Perturbed Galerkin m [NASA-TT-F-11376] ms and contin 17 p2905 N68-28555 of discretization al-ear operator equations -17 p2905 N68-28683 grating nonlinear dif-eigenvalues 17 p2905 N68-29275 Numerical methods for int ferential equations with parasiti (NASA-TN-D-4703) theorem for solving nonlinear shallow symmetrically 18 p3175 N68-29727 Nonlinear equations of thin si on basis of Kirchhoff-Love hype programming s of thin shell theory constructed Love hypothesis in quadratic ap 18 p3178 N68-30237 18 p3106 N68-30532 Joint nonlinear of for autonomous line ments containing no of state and parameters based on finite measure-19 p3255 N68-31179 s to system of dispersive ntions 19 p3342 N68-31682 Methods of nonlinear or Newtons method, steepest with respect to parameter [TR-68-75] 19 p3301 N68-31755 Extending direct method of Liapunov, and stability outlitions for certain differential and nonlinear coun-21 p3712 N68-33929 of constitutive coefficients for mix (AM-68-4) ions for determination ixture of two solids 22 p3972 N68-35330 Approximate solu N unknowns [NASA-CR-97073] car equations in 22 p3901 N68-35730 rical solution of noeli Error indicators for r (RISO-177) 22 p3937 N68-35865 ons of third order non-Qualitative behavior of solu near ordinary differential equ 23 p4086 N68-36026 Two dimensional Taylor ins had of solving systems of cendental equations. 23 p4087 N68-36152 Generalized iterative meth Bibliography on nonlin Integral equations (DEC-TAS-68-20, V. 1) 23 p4087 N68-36196 FORTRAN computer program for numerically solving nonlinear equations that describe diffusion and themical reactions of release of contaminants into WRE-TN-HSA-1291 23 p4008 N68-36381 tion of strong electrost (MPI-PAE/PL-6/68)

bility density function 21 p3722 N66-33829 (NASA-CR-96579) Design and functioning pensator compared with a [NASA-CR-96880] g of split path nonli diffusion processes with ap-ring and detection theories 23 p4106 N68-36294 pression, and predict NASA-CR-971971 23 p4021 N68-36729 NONLINEAR PROGRAMMING Circuit design proble ed into no 02 p0191 N68-11130 d for nonlinear programming linear restraints 02 p0228 N68-11320 Decomposition methor problems with structural [MRC-TSR-786] Some extensions of Kuhn-Tucker results in concave NASA-CR-910761 03 p0358 N68-11932 Modified sequential a (RAC-TP-277) 04 p0528 N68-13078 urvey on development of unconstrained molying mathematical programming problems 08 pl 94 1058-19053 for solving mathe (RAC-TF-267) Digital computer analysis of systems with no 10 p1545 N68-19684 nming proble MRC-TSR-819 11 p1736 N68-20822 ation technique for mathematics IRAC-TP-2961 11 p1728 N68-20933 n method of solving non-11 p1729 N68-21107 13 p2092 N68-23226 ar objective function and 13 p2092 N68-23290 (RR-121) Upper and lower bounds from nonlinear pro-ramming for limit analysis of rotationally symmetric 15 p2569 N68-26223 AD-668494) 15 p2493 N68-26427 Risk av 16 p2602 N68-27027 ns of hyperbolic systems of [RR-122] is of electrical lines 23 p4088 N68-36452 or velocity distribution func-collinionism shock wave 24 p4324 N68-38128 18 p3049 N68-29731 portion of nonlinear op d for solving ougineering NONLINEAR PEEDBACK ability criteria developed for agic memoryless time varying path by means of Lisponev Frequency domain state dynamic systems with sing nonlinearity in feedback 13.7241 19 p3301 N68-31752 21 p3661 N62-34471 01 p0040 N68-10125 CT-131 of makipis response op-ny algorithm for requiremin 21 p3714 N42-345 (18-1) 06 p0782 N68-15917 or reactors with feed-21 p3674 N68-34520

16 p2714 N68-27668

18 p3102 N68-29824

18 p3050 N68-29923

18 p3102 N68-29935

astic approxis

s of nonlinear systems

- methods for controlling

Numerical solution for elastic-plastic torsion of mul-tiply connected cylinders using quadratic programming Search algorithms for multivariate optimization surametrically defined syste [NASA-CR-73200] ms for computer programming of eization techniques for nonlinear, 21 p3790 N68-34588 09 p1363 N68-19041 IDOMITT-1-371 Geometric inequality used to extend refined duality theory for polynomial geometric programa [TR-1968-2] 21 p3715 N68-34708 Numerical solution for problem with inequality co ear optimization nts 09 p1424 N68-19119 mmaries and abstracts on theory, design, op-ation, and stability problems of nonlinear control Convergence co fitions for nonlinear programming (WP-197) 22 p3899 N68-35340 [NASA-CR-76591] 09 p1321 N68-19260 NONLINEAR SYSTEMS near study of beam p Statistical optimization of nunlinear pulse automatic na amplification 09 p1404 N68-19280 anotrol systems Stability behavior of diffe 01 p0043 N68-10318 near systems (TR-11) Ultimate boundedness form of stability for nonlinear pulse modulation systems 09 p1366 N68-19459 01 p0043 N68-10319 Analysis of nonlinear irregular n 10 p1510 N68-20145 Periodic and random perturbations effects on non-Kalman filters used to estimate linearized states of two different state variable representations of one non-linear system [TN-1967-6] 10 p1501 N68-20323 [FTI-102/T-035] 01 p0107 N68-10477 ar thermodynamic theories of rods, plates, 01 p0145 N68-10833 Nonlinear system identification in terms of Weiner Stability of time varying feedb [ESD-TR-67-480] 01 p0045 N68-10923 Collective compact sets for apruximating nonlinear operators of eigenvalue-eigenvector problems [MRC-TSR-758] 02 p0227 N68-11222 Modified point transformation self vibration of second order no [FTD-HT-67-244] on method for analysis of conlinear pulse systems 02 p0192 N68-11411 Time varying bound on non änear system trans Extensions and simplification roofs of relaxation methods for no [NASA-CR-91042] 03 p0331 N68-12138 CS-88] Control and nonlinear estimation techniques applied to optimal guidance of low thrust spacecraft, planetary ooft landings, and feedback systems design [NASA-CR-91441] 04 p0487 N68-12992 wave equations [REPT.-67-6] FORTRAN comp Liapunov functions for determining stability bounda-es of nonlinear control systems systems of equation [MRC-TSR-790] [RAE-TR-67148] 04 p0488 N68-13028 Liapunov functions for nonlinear systems of dif-[NASA-CR-61437] 05 p0683 N68-14402 lity of particle motions through tructures containing lumped non-Long term stabiliteriodic focusing stre [SC-TM-67-2977] (UCRL-17795) 05 p0715 N68-14573 ualog computer 05 p0634 N68-14995 [FTD-MT-66-54] Wiener theory of optimal linear rathesis of nonlinear control system put signals CDC 6600 digital comp nonlinear problems of b foundation and subjected to 06 p0817 N68-15023 Nonlinear thory of bending and buckling of Love-Kirchhoff plates and shells [TR-0158/3305/-3] 06 p0918 N68-15145 Motion division for synthesis, and analysis of non-near automatic systems 06 p0820 N68-15593 Frequency separation of control processes in non-sear automatic system us periodic up 06 p0820 N68-15594 [AMRL-TR-67-54] ns, machine vibration, 06 p0923 N68-15991 national algorithm on for m m supercavitating, con-es with finite cavities 06 p0831 N68-16064 crete two point bound: [NASA-CR-87789] (NASA-CR-61444) Reciprocity and quetwork problems [NASA-CR-92836] ty in solving nonlinear 07 p0976 N68-16268

th special cases of Cos-t plate

07 p1091 N68-16810

iter for bounded input-sive lumped RC net-

08 p1156 N68-17772 ns research on systems s, Liapunov functions,

gral equations 09 pf320 N68-18811

09 p1371 N68-18984

and differential equa-

capability of space puncy functions for

Estimation and identification of nonlinear sampled data systems 11 p1724 N68-20686 11 p1676 N68-20704 Differential equations for describing effect of ran-dom processes on nonlinear oscillating systems liating systems 11 p1745 N68-20907 Nonlinear system of partial differential equations for determining dynamic stability of plate
11 p1794 N68-20918 ns for convergence nonlinear systems 11 p1728 N68-20933 11 p1747 N68-21362 m for solving nonlinear ion method 11 p1732 N68-21572 nic systems with inverse quadratic 12 p1916 N68-22244 Computer programs for dynamic response of par-12 p1846 N68-22433 Mathematical model of nonlinear pulse system and predicting system stability
[JPRS-45244] 12 p1853 N68-22758 Nonlinear attitude control system design for space wehicle 13 p2155 N68-23421 outer program for solution of ockling of plates on elastic to compressive forces 13 p2160 N68-23494 Nonlinear spectral model of convection in fluid evenly heated 13 p2168 N68-23509 Iterative finite difference method for calculating 13 p2110 N68-24007 Dynamic response of nonlinear two degree of reedom system 14 p2299 N68-25066 for solving nonlinear dis-15 p2439 N68-25932 dysis of control systems 15 p2439 N68-25982 lity analysis of no nar systems by Liapunov 15 p2439 N68-25983 athematical analysis of cleronomic systems 15 p2492 N68-26379 Calculus of variations and a mple trajectories in nonlinear (TR-0158/3306/-1) 15 p2441 N68-26385 on nonlinear flexural vibrations of thin wa cylinders 16 p2776 N68-27211 Functional analys near longitudinal dynamic stability in pita [NASA-TM-X-59120] nent calculation 16 p2584 N68-27411 disearity effects on attitude gyros for Ap [NASA-TM-X-60126] 16 p2661 N68-27460

Modeling and compensating problems in design of onlinear dynamic systems Nonlinear control sy (AD-669523) Volterra functional : with deterministic and st Functional polynomials tion procedure for identific stability analysis of nonl [REPT.-68-2]

am systems 18 p3103 N68-30015 Nonlinear combined system stability and suppression of self oscillations [FTD-MT-24-102-67] 18 p3051 N68-30099 Synthesis of nonlinear self adaptive spacecraft controi system [FTD-MT-24-132-67] 18 p3052 N68-30105 Design of nonlinear control systems using state varia-ble feedback 18 p3052 N68-30157 Liapunov method for estimating acceptable motion of dynamical systems 18 p3123 N68-30158 Input and output stability of continuous and discrete ne nonlinear control systems 18 p3052 N68-30242 Nonlinear scale period meter for compromising shut-wn delay and fluctuation in nuclear reactor opera-[NSJ-TR-101] 18 p3117 N68-30472 Self oscillation analyses for nonli near cubic regulato-18 p3053 N68-30550 ent gain function and stocms-sampled-data control system 19 p3255 N68-31089 ntrol theory used to study linear pulsed con-digital controlled systems trolled and digital co [FTD-HT-67-356] 19 p3256 N68-31617 Methods of nonlinear equations solutions based on ewtons method, steepest descent, and differentiation with respect to para [TR-68-75] 19 p3301 N68-31755 netohydrodynamic equa-providing mechanism for or plasma penetration of tion of two fluid mag as nonlinear ionic waves pr ic rays generation and for (NASA-CR-96276) 20 p3558 N68-33252 Parameter plane analysis of forced oscillations and jump resonance phen [NASA-CR-89189] 21 p3671 N68-33685 Algorithm for nonlinear memory system with input or output noise 21 p3663 N68-33761 Feedback system concepts [WAPD-TM-724] 21 p3675 N68-34636 ear problems in un steady radiation gas dyna [MIT-DSR-76052] 21 p3796 N68-34715 Nonlinear vibratio restrained by springs article in planar motion and 22 p3970 N68-35028 Bogoliubov theory for constructing approximate solutions to nonlinear differential equations describing periodic phenomena 22 p3914 N68-35051 inear inelastic material with temperature dependence and rate sensitive plastics with temperature dependence and yeld point [REPT.-34] 22 p3972 N68-35432 Expansion of duffing equi tion for computerized ic oscillators driven by [AD-673235] 22 p3852 N68-35723 Reponse in dynam Markov process ar system represented by 23 p4037 N68-36678 Fokker-Planck equation (excited nonlinear systems n for approximative solution [RS-33-OE] 23 p4039 N68-37362 Time optimal and systems of the system of the systems of the systems of the system of the systems of the system of the sy al control of linear and 24 p4237 N68-37459 systems, and literature survey on using Liapunov func-tions for problem solutions 24 p4300 N68-37796

[ARL NONLIN NAS/ nonlin (ONE) NAS/ Non quani-i ters for Com of she NAS. App proble TG-2 Asse used in pensal Digi (NAS/ AM-6 bility [NAS/ Stab Non INAS/ Qua sionalit (SR-79 Noni

Feed using a tustor ([GGC/

Mati

Volten (NASA

SUBJE

Gen of line

Electron (ARP)

Alte

General and linear terat surface and ela [AM-67-11]

stability, invariance princip and Volterra and functional [NASA-CR-61632]

work [R-369]

SUBJECT INDEX (ARPA-E58) Alternate derivation of equa Kraichnan on dynamics of nonline [ARL-68-0075] NONLINEARITY Mathematical models of su nonlinear short wave theory [ONERA-TP-521] Invariant imbedd ters for nonlinear processes [RM-5507-PR] NASA-CR-92642] TG-230-T532) Oscill Digital computer programs an applied to nonlinear feedback co (NASA-CR-73183) INASA-CR-93155] Applicability of function systems for gain insens (NASA-CR-93412) difficulties of dynami ar lifting surface theo [TR-48] Feedback force-balancing pos-using nonlinear neuron-like elec-tuator control model [OGC/EE/67-9]

Uning range, azimut [NASA-CR-1040]

12

4

13

5

9

5

oralized Linpunov functions for mo-and nonlinear systems with time in 24 p4302 N68-37805 Shock response characteristics of cantilever bear with attached tip mass and nonlinear material proper 12 p1976 N68-22237 uring electrical properties Nonlinearity effects in optic FORTRAN program for and spectroscopic photographic pla [NASA-CR-94405] cal data processing, and lyzing nonlinearities in 24 p4258 N68-38098 12 n1917 N68-22945 rization method applied to computation of 24 p4240 N68-38125 13 p2041 N68-23071 ations developed by ear stochastic systems entations of SU/2/ group 13 p2122 N68-24239 Nonlinear repr [JINR-P2-3648] 24 p4277 N68-38269 reduce for solving op-onlinear problems by KWADRACIKI - ALGOL pro-mization and minimization of n nast squares method on GIER co least squares me (IBJ-856/I/PL) died to optimal control imputer 13 p2097 N68-24260 problem computations - reentry trajectories [NASA-CR-90749] 02 p0193 N68-11870 or expansion and evalua-ind integrals 14 p2280 N68-24587 Nonlinear transformations fo tion of infinite series and first ki [G3681.21.01B] personic boom based on 03 p0302 N68-12694 nearity parameters Ultrasonic measurem of copper single crystals 14 p2332 N68-25115 ear behavior of inflata merical analysis of nonli Nonlinear Dirichlet problem with application to quasi-linear problems (BNL-11811) 05 p0683 N68-14318 (NASA-CR-84721) 14 p2359 N68-25331 inlinearity of hydrodyna ed by interaction of harmon unic beam instability nic on quasilinear relaxng and sequential interpolating füation [JINR-P9-3690] 14 p2317 N68-25351 05 p0640 N68-14905 Nonlinearity and anisotropy in tuned gas laser am-ifiers with axial magnetic field and two polarized opti-al frequency signals Computer programs for linear and nonlinear analysis of shells of revolution with symmetrical stiffness pro-[AFOSR-68-0671] 15 p2476 N68-25667 06 p0919 N68-15245 Nonlinear theory of so tor and tunnel diode r solving boundary value c systems 06 p0861 N68-15294 16 p2634 N68-27627 Network and topological form nonlinear space frames [NASA-CII-75506] ulation of analyses of tem with one degree of 16 p2782 N68-27745 06 p0880 N68-15605 d steady shock waves in ent of frequency and time domain methods lyzing human control responses during com-17 p2920 N68-28673 is of stress and buckling Apolio spacecraft 17 p2980 N68-28681 06 p0780 N68-15910 pressures of aft heat al NASA-CR-954901 and algebraic techniques control systems 07 p1013 N68-16232 me domain analysis to crator/pilot/ 17 p2830 N68-28920 problem of modeling hu NASA-TM-X-609961 Nonlinear theory of elastic-plastic continua in presence of simple force and stress dipoles [AM-67-12] 07 p1090 N68-16458 cts of intense monochromatic silver and cesium antimonide Macroscopic quasilinear theory of garden hose insta-17 p2897 N68-28953 08 p1217 N68-17428 rvational study of a ow in the atmospher on arouth of har nonlinear aspects of large re and effects of nonlinear onal analysis in approximating dinal stability ability 08 pl 105 N68-17446 REPT.-08759-1-T) 17 p2878 N68-29064 ility problems due to nonlinear and transient ons conference mbedding, dynamic programming, as tion methods for solving brachistochron 08 p1248 N68-17507 TR-6] 17 p2921 N68-29264 onlinear steering oscillation -nalog computer techniques 08 p1208 N68-17510 d theorems in theory of Nonlinear representat continuous Lie group G [JINR-P2-3725] 17 p2939 N68-29272 Nonlinear inversion method for formulating wave propagation theory of radiative heat transfer 08 p1259 N68-18095 Nonlinear combustion instability in liquid propellar rocket motors, and research on damping devices, resc tim kisetics, and cold flow tests [NASA-CR-72426] 18 p3186 N68-29981 Intentional nonlinearity in state variable feedback 18 p3186 N68-29983 09 p1316 N68-18350 Sonic boom origin bas shock waves NASA-TT-F-11474) d on nonlinear theory of short te for reduction of dimen-ic programming 09 p1366 N68-19462 18 p3003 N68-30792 ar continuum theory of ry for low aspect ratio 10 p1514 N68-19545 19 p3350 N68-31029 tric stress-strain state of inforcement ring 19 p3378 N68-31712 ition control actuator sents in opposing acts in plants sheath sur-10 p1510 N68-20083 Mathematical model of nonlinear, time invariant processes with switched two level inputs and finite ECOM-2976) 20 p3553 N68-32305 Nonlinear dyna vier of buckled elastic circu-10 p1510 N68-20177 pical dyna ied to nanli OTY APP design for nonlinear variational calculus 21 p3711 N66-33702 Volterra equations [NASA-CR-94107] 11 p1731 N68-21400 21 p3671 N68-33740 11 p1733 N68-21790 d for orbit determination ation data 12 p1964 N68-21864

ear wind compe Technique for predicting a ion of bullistic musile system SC-R-67-1232] 23 p4098 N69-36595 Methods for solving ferential equations of jet (FTD-HT-23-496-67) egral and dif-23 p4049 NAS-36664 correct for non [BNL-12622] 24 p4314 N68-37860 NEWTONIAN FLOW mamer P2SO polyscryte 13 p2087 N68-23264 14 p2242 N68-25028 19 p3260 N68-30874 low flow of no double perturb uid part droplet studi se and matched seem 22 p3855 N68-35002 NONNEWTONIAN FLUIDS Friction and pressure the flow with polymer additive [USL-881] 13 p2051 N68-23256 16 p2647 N68-27686 16 p2691 N68-27828 Rheology and velocity pr id flow through small tubes logical properties of solid liquid suspensions 19 p3261 N68-30935 ic fluids in in an and vi 19 p3262 N68-31013 Velocity profiles in nonNe a fluid in he 20 p3462 N68-32791 21 p3678 N68-33636 Perturbation analytonian fluids [NASA-CR-96547] 21 p3680 N68-34017 NONPARAMETRIC STATISTICS 04 p0502 N68-13596 pattern recognition 07 p0971 N68-17018 TR-151 09 p1308 N68-18472 quals causing arbitrary tackgrounds 13 p2027 N68-23628 16 p2669 N68-27725 tests in detection of NONPOLAR GASES ntermolecular interaction for polar and nonpolar locales correlated with thermodynamic and trans-t properties of games 13 p2165 N68-2307 hermodynamic and transport properties of water or and mixtures of water vapor and nemption game 18 p3021 1468-2997 ONREPLECTION
U ENERGY ABSORPTION
ONRELATIVISTIC MECRANICS a of Diric Hi visitic app Systematic search fr manical symmetries (IC-47-8)

21 p3768 N68-34214

12 a1934 N68-32220

Daily emisph

Northern [NASA-

Synop

ground, tral Eu Decemb

tral Eu

June 196 [QR-2]

sphere d

M-720

relation [M-7203

Atmor moupher [M-7346

Northern (M-736)

Descr sure fiel [M-720

Vertice in chan

physico-sphere (M-720)

Zonal

Norther [M-736

Meter

[QR-1]

Tabul Alaska,

(UAG-

Dynaming in N

Atmo Norther [M-739

Daily

OTSR-

Press

Polarity NASA

Catal actudia areme

Distri

numeric AFCR

NONRIGIDITY framework of nonrelativistic quantum mechanics [BMWF-FBK-67-82] 12 p1931 N68-22595 um rules from causality Derivation of ne [LPTHE-TH-219] 13 p2113 N68-23114 ics for particle inder gi rces 15 p2306 N68-25725 (NTH-68/2) Simplified integrelativistic quantum (SLAC-79) ns for solving non-three body problem 16 p2719 N68-27137 Current and den (AD-671202) 19 p3333 N68-31699 Comparison of nonrelativistions for fluorine, neon, chlo ic Hartree-Fock calcula-rine, argon and bromine (ORNL-TM-2251) 22 p3935 N68-35830 NONRIGIDITY FLEXIBILITY NONSTABILIZED OSCILLATION orage rings 01 p0113 N68-10794 Nonlinear control systems - methods for controlling [AD-669523] 18 p3102 N68-29824 NONSYNCHRONIZATION Interference current and brush friction loss in alter-nating current commutator 15 p2440 N68-26037 Memory tubes with barrier grids for shielding radar from nonsynchronous pu [JPRS-45950] 19 p3241 N68-31599 NONUNIFORM FLOW Analysis of separated, nonuniform, axisymmetric up-stream flow in propulsion nozzles [ONERA-TP-506] 03 p0335 N68-12132 ormity investigated ven in wind tunnels 06 p0824 N68-15198 [ARC-29271] ation between cut-off, and frequency mode in iform waveguides 07 p0965 N68-16933 Numerical analysis of nonst gular wing of low aspect ratio [NASA-TT-F-11823] mary flow past rectan-18 p3000 N68-30828 orm flows in distributed outflow ady non 21 p3681 N68-34144 aviscid chemicar sa shock wave librium flow behind moving normal shock (PIBAL-68-18) 22 p3860 N68-35400 **CONUNIFORM MAGNETIC FIELDS** Penning discharge in inhorar field for collisionless plan [NP-16005] production 03 p0401 N68-12501 Statistical theory of charged particle transport in dis-ordered magnetic fields 10 p1572 N68-19735 iform mag tic field effect on ferromagnetic colloidal solutions (NASA-TN-D-4676) 18 p3022 N68-30044 NONUNIFORM PLASMAS High frequency breakds quattally varying fields [TR-0[58/3240-20/-5] n of nonuniform gases in 09 p1399 N68-18322 waves in nonuniform CLM-R-75] 11 p1761 N68-20982

um plasma studied by traviolet spectroscopy, ticle detection 12 p1952 N68-22998 Ruby laser product nematography, visib CEA-R-3296 Velocity de potential in a [AS-48-3] nest of induced flow 20 p3557 N68-33003 Role of universal in auroral phenomena 23 p4058 N68-37129 NONUNIFORMITY conduction in mag-Nonuniform el [NASA-CR-91557] 04 p0553 N68-13288

peandom mimbers

11 p1734 N68-21843

NORD 1500 AIRCRAFT ibility criterion for rolling-pitching coupling of on aircraft /Nord 1500/ NOREPINEPHRINE Norepinephrine and ser-ess, and temperature regnis of epinephrine and norepinephrene in urine [AMRL-TR-67-96] 16 p2595 N68-26960 NORMAL DENSITY FUNCTIONS Probability distribution functions for sums of certain andom variables compared to Gaussian approximation [SC-RR-67-799] Probability distribution of estimators for power den-sity functions of Gaussian multidimensional stationary random processes based on finite, discrete time sam-Methodology use [NASA-CR-1016]

ed in guidance system performance 11 p1783 N68-21442 Methods of solving sp dicting satellite position [MDC-TR-68-12] rical error probability in pre-13 p2025 N68-23137 Stability of assumptions used to determine auto-elation and spectral density functions of nonlin devices or filters [RR-68-1] 14 p2231 N68-24470 ent magnetization curves of

(RAE-LIB-TRANS-1289) 14 p2297 N68-24552 Distributions of q dratic forms in central normal density functions - ta [AFOSR-68-0849] 15 p2495 N68-26767 ol for variances of normal

TR-421 16 p2693 N68-27153 Probability tables for determining integral of variate normal density function for arbitrary elliptical [CAL-XM-2464-G-1, V. 1]

17 p2907 N68-29541 Probability tables permit tegral of bivariate Gaussian bitrary elliptical region [CAL-XM-2464-G-1, V. 2]

17 p2907 N68-29542 lence limits from nd using approximations 19 p3263 N68-31072 [TR-128]

NORMAL FORCE DISTRIBUTION U FORCE DISTRIBUTION

NORMAL SHOCK WAVES Normal ionizing shock wave propagation in coaxial electromagnetic shock tube [AFOSR-68-0023] 06 p0891 N68-16079

Magnetohydrodynamic wave mode behind ionizing 14 p2325 N68-25035

mustion and dispersion m and flow of gas solid I shock in nozzles of sound in condensing d mixture downstream of 15 p2508 N68-26118

nce method of solving normal shock traction problem for ideal and real gas wave-ophere interaction flow fields [NASA-TM-X-60415] 15 p2456 N68-26830 NORMALITY

Computer program for Kolmogoroff goodsess of fit test for normality [NWL-K-2/68] 10 p1547 N68-19796 NORMALIZING (STATISTICS)

Aziomatic theory of nonrenormalized interactions regulated with respect to weakened locality condi-(JINR-P2-3085) 03 p0394 N68-12620 Norm reduction theorem for developing eigenvec-ers of real matrix from complex matrix IS-T-207) 09 p1359 N66-18529

Renormalization and classical electromagnetic one body problem for extended body [EPNO/TH-92] 11 p1747 N68-21453 Solutions to restricted three and four body problems y normalization of Hamiltonian systems with equilibri-

(NASA-CR-95107)

16 p2756 N68-27197

15 p2389 N68-26951

in primates 14 p2198 N68-24867

08 p1192 N68-17234

11 p1746 N68-21215

ation of estimators for power den-esian multidimensional stationary

netric analy-

nin effects on sleep, alert-

re for flu

Norms of linear Sturm-Li ors in connection with prob-ion of continuous function 06 p0865 N68-15608

vector spaces 07 p1013 N68-16178 CS-75

Dry ice seeding no stratus clouds and fogs (JPRS-45891) scattering supercooled 18 p3109 N68-30171 es of dual Banach spaces computed

21 p3711 N68-33709

NORTH AMERICA Osonesonde observations over North America [AFCRL-64-30, V. 4] 11 p1693 N68-21653 Harmonic analysis of monthly precipitation over North America [ECOM-2893] 13 p2098 N68-23257 activity map for North America at 10 Electrical con 14 p2250 N68-25197

over North America 18 p3108 N68-29811 [AFCRL-68-0232]

NORTH AMERICAN AIRCRAFT U B-70 AIRCRAFT U F-100 AIRCRAFT U X-15 AIRCRAFT

NORTH AMERICAN MILITARY AIRCRAFT
U MILITARY AIRCRAFT NORTH ATLANTIC TREATY ORGANIZATION [NATO]

NATO AGARD information bulletin summarizing research activities, lecture series, publications, projected meetings, and punel reports for 1968 [AGARD-IB-68/1] 13 p2174 N68-23457 n of Advisory Group for elopment /NATO/ 20 p3615 N68-33590 Operation and organization Aerospace Research and Develo [AGARD-GJ-1968]

NATO advisory group for aerospace research and development information bulletin [AGARD-IB-68/12] 24 p4357 N68-37999 24 p4357 N68-37999

Simultaneous dust and out and Central America [NASA-CR-90427] endings over North 02 p0206 N68-11414 Atmospheric and groun-emisphere for July, 1967 ther charts of Northern 03 p0362 N68-11947

World weather summary eteorological charts of nort at 1967 daily, and monthly 06 p0868 N68-15017

y and monthly meteorological charts of ern Hemisphere for period Jul. 1 - Sep. 30, 1966 06 p0868 N68-13018

Articles on arctic ice phenon and meteorological charts for Go Hemisphere during September 19 menu, and summa termany and North 08 p1195 N68-17343

Duily and mean ground and 850-mb meteorological harts of Northern Hemisphere for October 1967 08 p1195 N68-17344

and meteorological charts for Germany and ern Hemisphere during October 1967

arts for ground, and 850 millibarn are over Northern Hemisphere during

08 pl197 N68-17695 harts for 100 millibarn level of at-Northern Hemisphere during fourth 08 pl197 N68-17696

gical charts for 50 millibarn, and 100 mil-els of atmosphere over Northern Hemisphere et quarter of 1967 08 pl 197 N68-17697

Synoptic meteorological weather charts for ground el, 300 milliburn, and 500 milliburn levels of at-aphere over Northern Hemisphere during August, 08 p1198 Nes-18030

nts, and precipitation of p1338 N68-19406

n events, geomagnetic storms, and microwave radio bursts in 11 p1780 N68-21771

hods for gen

U TURBULENT FLOW

[NASA-CR-62051]

SUBJECT INDEX World weather summary and daily 850 mb and ground level charts of Northern Hemisphere for November 1967 12 p1900 N68-22576 Duily and monthly mean 50-mb charts of Northern emisphere for last quarter of 1966 12 p1901 N68-23018 Auroral radar echoes and connection with geomag-etic field and ionospheric currents studied in Northern Hemisphere [NASA-TT-F-11650] 14 p2244 N68-24394 Synoptic meteorological data and daily charts of round, 500 mb, and 300 mb levels for Germany, cen-al Europe, and Northern Hemisphere during tral Europe, an December 1967 14 p2284 N68-25127 Synoptic meteorological data and daily charts of ground, 500 mb, and 300 mb levels for Germany, central Europe, and Northern Hemisphere during November 1967 14 p2284 N68-25128 Daily and monthly mean 100 mb and 50 mb level charts of Northern Hemisphere during April, May, and June 1967 [QR-2] 14 p2284 N68-25129 World weather review and daily and monthly mean arts of ground and 850 mb levels of Northern Hemi-here during December 1967 14 p2284 N68-25130 Meteorological weather maps for Northern Hemi-sphere during third quarter of 1967 [QR-3, PT. 3] 16 p2700 N68-27265 Zonal circulation of atmosphere over Northern [M-7204] 20 p3519 N68-32445 Precipitation anomalies for Northern Hemisphere in relation to basic atmospheric circulation types [M-7203] 20 p3519 N68-32475 Atmospheric temperature distribution in earth atmosphere over Northern Hemisphere [M-7346] 20 p3519 N68-32482 Mean monthly air temperature anomalies over Northern Hemisphere over extended time periods [M-7368] 20 p3520 N68-32600

Descriptive material for atlas of climatological pres-sure field charts in Northern Hemisphere troposphere [M-7200] 20 p3520 N68-32617 [M-7200] 20 p3520 N68-32017 Vertical temperature correlations and applicability in characterizing temperature distributions in large physico-geographical regions and Northern Hemi-sphere [M-7207] 20 p3470 N68-32668

Zonal circulation intensity variations at 500 mb over Northern Hemisphere [M-7366] 20 p3525 N68-33518 Meteorological surface and 850 mb charts of orthern Hemisphere for first quarter 1968 DR-11 21 p3718 N68-34383 [QR-1]

Tabulated noctilucent cloud data as observed from Alaska, Canada, Greenland, Iceland, and Southern Hemisphere during period 1885 - 1966 [UAG-R.-191] 22 p3866 N68-3483 Dynamic characteristics of 1958 stratospheric heating in Northern Hemisphere

22 p3902 N68-35000 Atmospheric circulation a Northern Hemisphere during sa [M-7390] and storm activity in summer 1967 22 p3905 N68-35297

Daily and monthly Northern Hemisphere 10-mil-libar synoptic weather charts - Apr.-Jun. 1967 [QTSR-2] 23 p4093 N68-36407 Pressure and temperature effects on stratospheric circulation in Northern Hemisphere during cold

23 p4093 N68-36425 Geomagnetic asymmetric response as function of polarity pattern of interplanetary magnetic field [NASA-CR-97262] 23 p4060 N68-37390

Catalog of 549 stars in regions G226 through G235, chuding & white dwarf suspects, found by direct mea-ersment of proper motions in Northern Hemisphere 23 p4174 No8-37391

Distribution of land and see in Northern Hemisphere and effects of topography and heating considered in numerical study of atmospheric circulation [AFCRL-68-0291] 24 p4282 N68-38138

(AFCRL-98-4291)
Synoptic-geographic distribution of tropospheric cold and warm air fronts and resulting ground level pressure changes in Northern Hemisphere 24 94282 N68-38147

Aerological charts for Northern Hemisphere winter, 1967 [QR-4] 24 54282 N48.38176 NORTHROP AIRCRAFT

Conceptual design of Northrop V/STOL Jet opera-tions research supersonic aircraft [NASA-CR-66416] 05 p0604 N68-14046 NORTHROP MILITARY AIRCRAFT U MILITARY AIRCRAFT

NORWAY

Reactor physics and technology /survey/ [KR-116] 12 p1911 N68-22839 Launching buse organization in Norway
19 p3260 N68-32119

NOSE [ANATOMY]

Effects of nasal occlusion, consonant context, and tering on perception of nasalization
15 p2403 N68-26922

NOSE CONES

NT ABLATIVE NOSE CONES

NT ROCKET NOSE CONES

Optical measurement technique for nozzle contour supersonic wind tunnel, entry dynamics of spinning hicle, wake surveys on free falling cone, and base at transfer telemetry 03 p0333 N68-12314

Nose bluntness, cone angle, and Mach number effects on stability characteristics in pitch of blunt [ARL-67-0185] 04 p0432 N68-13007 Approximate method for determining distances stween how wave fronts and body noses in supersonic

[FTD-HT-23-837-67] 06 p0763 N68-15713

Flow around blunt, slender cones performing trching oscillations analyzed by means of Chernyys ast wave piston analogy 07 p0933 N68-16385

Thermal insulation materials for rocket nozzles and INAL-TR-145] 10 p1541 N68-19566

Wind tunnel investigation of pressure distribution on blanted 15 deg half-cone wedge lifting-entry body [NASA-TN-D-4494] 11 p1621 N68-21681

Static aerodynamic characteristics of blunted cones in Mach number range 2.2 to 9.5 [NASA-CR-94553] 13 p1987 N68-23313 Temperature and flow around nose of blunt radome during aerodynamic heating [TG-981] 15 p2382 N68-26575

Wave drag of blunt body of revolution with conical if section in symmetric hypersonic flow 18 p2994 N68-29884

Base pressure fluctuations behind pointed cones at Mach numbers 2 to 3.8 measured by year discharge 18 p2994 N68-29891

Secondary shock wave formation in hypersonic flow around blunt none cone [FTD-HT-67-460] 22 p3864 N68-35930

Numerical solutions for axisymmetric flow equations over slender sharp nose comes at zero angle of attack [PIBAL-68-17] 24 p4194 N68-38027

NOSES [POREBODIES]
NT ABLATIVE NOSE CONES
NT NOSE CONES
NT ROCKET NOSE CONES

Windshield and nose geometry effects on supersonic aerodynamic characteristics of tactical fighter model [NASA-TM-X-1664] 23 p3991 N68-37066

NOTATION U CODING

NOTCH SENSITIVITY
Statistical analysis of notch effects on feligue strength of aluminum alloy sheet (APOSR-67-2837) 11 p1711 N68-20801 11 p1711 N68-20801

Dynamic strain concentration factor for natch in annealed aluminum rod subjected to impact loads
[AFOSR-68-0827] 18 p3179 N68-30269

Effects of symmetrical lar bars under axial loadi [PB-178127] 19 p3380 N68-31742

Fatigue tests on notched and unnotched aluminus alloy samples to determine variations in fatigue proper ties between batches [ARL/SM-321] 19 p3295 N68-3198 19 p3295 N68-31987. Effects of notch geometry, temperature, and diffuses of stress state on notch sensitivity of heat resistant al-

(RTS-4406) 20 p3599 N68-32347 and burn after prestressing, and tests to fract NYO-2394-32) 22 p3971 N68-35223

Effect of sharp notches on strength of cross rolled syllium inget and powder sheet 23 p4080 N68-37405 NOTCH STRENGTH

Fixings life of seached members pro-smooth specimen fatigue data | 01 p0143 N66-10577 [NAEC-ASL-1114] | 01 p0143 N66-10577 03 p0422 N68-12390

nation alloys in distilled subject temperatures onrest corrosion tests of ti equeous selt solutions at a ploying single edge a 03 p0352 N68-12544

Low cycle load tests to determine fatigue life of otched and unsocched high strength seed 12 p1886 N68-22080

Impurity effects upon notch templates and operties of high purity iron weld 13 p2000 N68-23162

Construction and operation of notch impact apparatus for strength tests on irradiated ampies.

[SGAE-M-15/1968] 16 p2704 M68-28008

Fracture mechanics applied to evaluate effects of racks on fracture strength of metched gluony plantics and vinyl commounts. and vinyl compour 17 p2904 N68-29464

Determination of notched metal fatigue strength at [AFML-TR-68-20] 19 p3381 N68-31811

PM-2A reactor pressure vessel matility and tensile property evaluation (NRL-6739) 23 p sterial notch duc-23 p4104 N68-37339

Airy stress functions for determining elastic stress fields and stress intensity factors for finite budies with single edge cracks and socches 24 p4346 N68-37522

NOTCH TESTS NT CHARPY IMPACT TEST

Effects of internal and external cyclic pressurization on low-cycle fatigue behavior of Hy-80 steel determined with double box tests [NSRDC-2568] 06 p0921 N68-15497

Equations for solving initial and boundary value roblems in clastoplastic flow in longitudinally recent, azinymmetric notched rods NASA-CR-66552] 06 p0921 N68-15561 stressed, axisymmetr [NASA-CR-66552]

Tortional prestrain effects on embrittlement of low carbon in 37 notched steel specimens tested to failure [AD-664598] 09 p1439 N68-18369

Analysis of flow and fracture proposity of steel steel using photoelastic model 11 p1792 N68-20706

fitth-irwin equation approximation for plane fracture toughness of noticined specimens 1665/C/] 19 p3378 N68-31679 Griffith-Irwin eq strain fracture tough [TRG-1665/C/]

Ultrasonic detection and measurement of fining-crack propagation in notched specimens of aluminum, titanium, and otheir alloys and marraging steels [NASA-TN-D-4782] 22 p3970 N66-35071

NOTCHED METALS
U NOTCH TESTS U NOTCH TESTS
U STEELS

NOTCHES

Analysis of notches and cracks - correlation between actic work hardening plastic continuum theory and INASA-CR-665701 08 p1254 N68-18183 Drag forces of two ansonic and superso nai V-shaped notches in lest flow 18 p.2996 3668-29991

NOVAE NT HERCULES NOVA

Binary star properties, effects of rotation and mag-tic fields on formation of single and multiple stars, ission and sovue, and other aspects of stallar evolu-

05 p0738 N68-14694 hable X my emission from Continues controlle Nova model of Contaurus XR-2 21 p3770 NSS-34268

Theoretical models of novae 22 p3957 N68-34823

NOXIOUS MATERIALS U CONTAMINANTS NOZZLE DESIGN

Comparative analysis of advanced thrust vactor con-trol systems designed for large, solid propolium bunch 03 p0411 N68-12382

SUBJ

Me Opt CE-T Gas FTD Effi lapsib (NAS

> Cor [NAS AH Ma INAS NOZZL Vie

Cor

FID

NOZZL

Cor NGT HOZZL

(ONE

Ski bulen nozzle (NAS Tes BL U N OX R

Per [NAS for NI [NAS

2222222222

Variational approach applied to optimum profiling of supersonic section in maximum thrust socie [FTD-HT-66-801] 03 p0298 N68-12575 Ship hull geometry, chneider propeller blade ale design, and Voith-Schneider prope [REPT.-2469] ment 04 p0585 N68-12807

Fortran 4 program for computerized design of two 05 p0603 N68-14747 [NASA-TM-X-1502] bly of sozzle and exit

Design, fabrication, cone for rocket engine [NASA-CR-72283] 06 p0899 N68-16024 d jacketed nozzle for 156 ropellant rocket engines 07 p1073 N68-16479 Tape wrapped abl and 200 inch diamete [NASA-CR-34870]

Performance tests, en scale model for nucleur e [NASA-CR-91275] velocity, and design of 98 pl 202 N68-17289

Submerged nozzle de propellant rucket engines [NASA-TM-X-1546] for SL-3 260-inch solid 10 p1586 N68-20186 erespanded rocket noz-

[NASA-TN-D-4471] 11 p1795 N68-21099 Material selection, a hybrid nozzles for ope sign and evaluation of in FLOX lithium base

NASA-CR-66566) 11 p1779 N68-21740 zele design criteria for jet lift systems for V/STOL

12 p1813 N68-22497 Design and test perform applications technological [NASA-CR-94619] e of apogne motor nozzle 13 p2145 N68-24008

nozzle geometry and nic nozzles tatic pressure di la for optimization [FTD-HT-23-1079-67] 18 p2993 N68-29623 Design of axial turbi nbly with movable

[FTD-HT-66-668] 18 p2997 N68-30175 Streams and loads on ra findrical shells to study i radial nozzles in spherical and reinforcement of openings in

NASA-CR-95896] 18 p3181 N68-30578

it, two phase flow of Behavior of single cam and water dropi 20 p3464 N68-33072

technique used in con-ethod of flow field to 21 p3758 N68-33954

NOZZLE EFFICIENCY

ous hydrogen-liquid OF PRES [NASA-TM-X-52360] 02 p0261 N68-11043 nut for V/STOL

04 p0443 N68-13308 model internal expan-ratios up to 4 04 p0567 N68-13633 ARCHAM-1477)

Performance evaluation-in-deflection nozzles in ular plug and expan-external flow effects of transcnic Mach me (NASA-TN-D-4462) 10 p1456 N68-20330

zile capture off d effect machin 14 p2187 N68-25490

mber length effects on ion coefficient 17 p2871 N68-28525 ejection officiency for zer (NASA-TT-F-11739) Thermodynamic cy tage injection for

(ALTRANS-263) 19 p3342 N68-31667 U GAS EXPANSION

OZZIE FLOW

AGARD-CP-12, V. 2) 01 p0048 N68-10107

neic nortle flows, te with large-angle

01 p0048 N68-10108 od vapor gar mixtures in uzie flows 01 p0049 N68-10113

Relaxation effects in nozzle flow of hot combustion ares measured by shock tube techniques 01 p0148 N68-10117

nic flow of ideal the d from nozzle into st Supersonic flo gas expelled from [TG-230-T526] ermodynamically perfect stationary medium 01 p0052 N68-10838

Finite difference method for calculational and axisymmetric stationary gas in divergent nozzle section calculating one dimen-try currents of inviscid

02 p0200 N68-11570 cons in nozzle flows
[RM-388] deionization reac-

02 p0285 N68-11618 Rate constants for haust flow fields [NASA-CR-90528] nts for calculating nozzle and rocket ex-

02 p0292 N68-11782 c gas jet from conical nozzles

03 p0334 N68-11957 [TR-45] Analysis of separastream flow in prop [ONERA-TP-506] rm, axisymmetric up-

03 p0335 N68-12132 Base bleed effect on shrouded and unshrouded [ARC-CP-962] pressure measured on ozzles at Mach 1.96 04 p0434 N68-13155

Stress concentration in and boundary layer reaction conical nozzle [FTD-HT-66-464] etals at low temperatures, with hypersonic stream in 04 p0544 N68-13320

boundary layer reaction with Integral equations for be hypersonic stream in conics 04 p0435 N68-13322

sonic jet flow 06 p0897 N68-15039

Turbine stage chi in terms of two dimen-(FTD-HT-66-537) 06 p0898 N68-15417

fied gas from sozzles 06 p0828 N68-15711 [FTD-MT-67-22] for calculating nonisen-ow through nozzle induced

07 p0986 N68-16856 oxygen, nitrogen, and car personic nozzles

07 p0987 N68-16857

tics of gaseous secondary in-ol in overexpanded primary jection thrust vector cos nozzies under sea level o [NASA-CR-66533]

07 p1074 N68-17081 of low density hypersonic nozzle flow with v

07 p0989 N68-17217 Small amplitude line bility with finite Mach n [NASA-TM-X-52412] is of combustion insta-low and acoustic liners 08 p1260 N68-18115

09 p1329 N68-19190 INASA-CR-741701

mmer phenomena and m formation 09 p1330 N68-19205 effect on high energy no [NASA-CR-77847]

on parameters for flu ptimize static char-11 p1682 N68-20730

rmal jet flows in nozzle [APL-TG-230-T537] 11 p1684 N68-21009

nisymmetric two-phase zzie flows analysis 12 p1858 N68-21867 NASA-CR-92058 flow fields [NASA-CR-92057]

12 p1832 N68-22014 lating vibrational (ARC-29246) 12 p1845 N68-22155

imensional equilibrium mmetrical nozzles 12 p1863 N68-22733

ency of organic liquid 13 p2055 N68-24121

il theory for flow in air-air ejec-13 p2055 N68-24143 Cavitation performance of ratios of nozzle to throat area [NASA-TN-D-4592] e of jet pumps having low 14 p2190 N68-24461

Velocity and press 14 p2242 N68-24940

Attenuation and dispersion of sound in condensing edium and flow of gas solid mixture downstream of rmal shock in nozzles 15 p2508 N68-26118

Mass flow rate and static pressure of rarefled nitrogen gas flow through nozzles, and nozzle geometry effects 15 p2453 N68-26227

Triple-jet gas ejector for impr oved rocket motor nozzle flow efficiency [FTD-MT-24-164-67] 15 p2546 N68-26488

Calculation method for isymmetric nozzle with ur outlet r equilibrium gas flow in ax-uniform and parallel flow at (FID-67-29) 16 p2642 N68-27112

Acceleration of liqu [NASA-CR-95146] phase flow nozzles 16 p2734 N68-27202 Radiant heat flow of gas arameter distribution outside me with arbitrary

16 p2793 N68-27252 Design and performance zie for hot gas flow up to 13 [DLR-MITT.-68-06] variable convergent nozeg C 16 p2650 N68-28228

ce molecular beams 17 p2924 N68-28419 Field ionization in noz

Asymptotic analysis of t flow in supercritical sozzle [AGARDOGRAPH-117] ional oscillatory 17 p2872 N68-28848 Anode nozzle effects on bulk properties of arc

heated argon gas [AEDC-TR-68-106] 19 p3385 N68-31449 Experimental and theoretical analyses of high speed minar boundary layer in nozzle of arc heated wind

19 p3267 N68-32092 INASA-CR-96152]

FORTRAN 4 program dimensional and axisys flow fields and impro-delivered specific impul is for calculating inviscid, or metric nonequilibrium nozz ing analytical predictions delivered specific is [NASA-CR-1123] 20 p3577 N68-32793

Gas flow with particle outed by method of cha ional approximation cles in axisymmetric nozzles com haracteristics and by one-dimen 21 p3683 N68-34624

roximative calculations for plasma expansions in [DLR-FB-68-36, PT. 2]

22 p3941 N68-35112

velocity [FTD-HT-67-302] 22 p3861 N68-35443 Theoretical study of swirling nviscid nozzle flows 23 p4047 N68-36372

ng stage efficiency of gas ottling characteristics of Selected articles on inci-jector and calculation of gas injector with negati [FTD-MT-24-185-67] n coefficients 23 p4047 N68-36380

of diatomic gases cal-as discharging from su-FTD-HT-23-692-67] 23 p4050 N68-36897

23 p4145 N68-37410

Correction for effect of boun personic sozzles with broken ge [FTD-HT-67-91] tary layer on flow in su-neratrix 24 p4247 N68-38114 NOZZLE GEOMETRY

Nozzie geometry affects o combustion chamber designs [NASA-TT-F-10716] 01 p0127 N68-10176 Effects of nozzie go etry on supersonic jet flow

06 p0897 N68-15039 Design and man oxygen thrust cham [ELDO/SP/67/5] re of liquid hydrogen/liquid 06 p0897 N68-15158

tions for transonic flo nal nozzle with arbitr (ARC-R&M-3481) 06 p0829 N68-15759

for transonic flow in throat ith arbitrary amouth profile 06 p0829 N68-15760 Approximate soli region of annular no (ARC-R&M-3480)

X

1 10 Mg of 8 day 77 2- 8 1-11 2

SUBJECT INDEX	
lants	nisms in two low area ratio nights of 7.25 diameters 08 p1182 N68-17564 aracteristics of liquid film le contours, liquid propel- dignition of solid propel-
[NASA-CR-94386] Mass flow rate and stat mitrogen gas flow through not effects	12 p1962 N68-22683 tic pressure of rarefled zles, and nozzle geometry 15 p2453 N68-26227
teristics on nozzle configurati noise [D6-15071, V. 2]	data and thrust charac- ions to reduce jet aircraft 20 p3395 N68-32192
Mean velocity and shear parations for jet aircraft noise re [D6-15071, V. 1] Optimum nozzle angle dete	duction 20 p3396 N68-32196 rmined for multistage tur-
[CE-TRANS-4755] Supersonic and hypersonic bie plate and axisymmetric loop air compressor plants	20 p3392 N68-32712 wind tunnels using flexi- nozzles with two closed
(BRL-TN-1694) Gas dynamics of supersoninetohydrodynamic generators (FTD-MT-24-208-67)	21 p3677 N68-34743 c radial nozzles for mag- 22 p3945 N68-35663
Effects of shroud geometry lapsible plug nozzle at Mach n [NASA-TM-X-1657] Correction for effect of bou	on performance of col- umbers from 0 to 2.0 23 p3983 N68-36132 indary layer on flow in su- peneratrix
(FTD-HT-67-91) NOZZLE INSERTS Composite material deve	24 p4247 N63-38114 lopment and structural
design of improved throat is chambers [NASA-CR-54984] Ablative materials performs also amplications	16 p2750 N68-27334
In applications [NASA-CR-72429] Manufacture and firing test type solid rocket motor [NASA-TM-X-61238]	19 p3360 N68-31937 t results for large proto- 21 p3760 N68-34725
NOZZLE THRUST CORFFICII Virial and viscosity effects surements using sonic throat, a thrust	on mass flow rate mea- and virial effect on nozzle
[ONERA-TP-528] Base bleed effects on plug as [ARC-R&M-3466] Convergent nozzle for stan	03 p0335 N68-12037 ozzles 03 p0411 N68-12655 dardization of thrust rig
NOZZLE WALLS	14 p2236 N68-24947 region of upherical shells
[TID-24103] Skin friction and heat transf bulent boundary layer flow o nozzle walls	EMERICAN STREET
[NASA-CR-82425] Temperature rise measuremengine testing [DLR-FB-68-30]	16 p2644 N68-27527 sents in wind tunnels for 21 p3794 N68-34090
NRX-A REACTOR U NRX REACTORS U NUCLEAR ENGINE FOR	R ROCKET VEHICLES
Performance evaluation for mentation kit [NASA-CR-91273]	NRX-A2 reactor instru- 08 p1203 N68-17296
Inmersion type copper-cor for NERVA [NASA-CR-91271] Application of two dimens method to NRX reactor radiati	08 p1203 N68-17313 ional S sub n tramport on analysis 17 p2937 N68-29218
NUCLEAR AUXILIARY POWE NT SNAP NT SNAP 2 NT SNAP 8 NT SNAP 9A NT SNAP 10A	R UNITS ACCUMENTS OF THE PARTY
NT SNAP 19	LACTORS (AMERICAN)

	NUCLEAR DEFORMATION
Design and implementation of radioisotope ther- moticatic generators providing electric power to Voyager spacecraft bus	Swimming pool reactor for gamma my production by
Voyager queceraft bes [NASA-CR-89995] 01 p0139 N68-10371	[IEA-133] 17 p2912 N64-28355 Prompt multiple neutron capture experiments and
Requirements and state of art review of thermoelec- tric power generation and materials for space applica-	synthesis of heavy almosts 19 p3319 N66-30867
02 p0164 N68-11891	Gamma ray spectra from resonance neutron capture in Ba 135 and Pr 141 [ANL-TRANS-605] 19 p3327 N48-31187
Research, production, and potential applications of thermoelectric and thermionic power conversion [AD-661455] 04 µ0449 N68-13221	Muce capture in nuclear shell model
Evaluation of nuclear reactor, and radioisotope	21 p3734 N66-33745 Mathematical models of stellar evolution through
(Al-MEMO-7385) 07 p1034 N68-17191 Solar cells, radioinctone generators, fusion electric	nuclear fusion detailing neutron production and cap- ture
Solar cells, radioinotope generators, fusion electric cells, and thermionic converters considered for Jupiter spacecraft mission	Capture of fast neutrons by assortions isotope
NUCLEAR BINDING ENERGY	[JINR-P15-3618] 23 p4129 N66-37050 NUCLEAR CHEMISTRY
Effect of scaling in calculation of cohesive energy, lattice distance, compressibility, and elastic constants of sodium fluoride	Nuclear chemistry and geochemical research in
[UUIP-337] 04 p0362 N68-13868	Mossbauer spectroscopy, terrestrial occurrence of in- duced sucteur reactions in natural unterials and meteoritic composition
Activation resonance integers, and neutron self shielding correction for various nuclides (JUL-503-RX) 06 p0882 N68-15038	[NYO-844-71] 03 p0315 N68-12554 Soviet research in plasma chemistry, nuclear chemis
Pairing energy calculations for spherical and deformed suclei using superfluid nucleus model	Soviet research in plasma chemistry, nuclear chemistry, radiochemistry, photochemistry, and chemistry of ionosphere and shock waves
[JINR-P4-3384] O9 p1389 Nos-18893	launerium in barium 125
nuclear many body problem [IC-67-14] 10 p1571 N68-20440	09 p1391 N66-18888 Summaries of studies in nuclear chemistry and
Diffusion data correlation with nuclear binding ener-	physics, reactor physics, radiochemistry, radio physics, electronics, and mathematics [HMI-8-50] 09 p1383 M48-19043
[BARC-302] 11 p1647 N68-20921 Matrix elements for approximating tensor and spin	Nuclear fusion studies on uranism 238, believe ion induced fusion of rhenium, intellum, and thelium, and
(IC-67-26) 12 p1923 N68-22196	(COO-1716-4) 11 p1649 N68-21029
Parameters of particle structure in neutron force function of medium and heavy suclei [BNL-TR-189] 12 p1929 N68-22512	Energy dependence of high energy & conversion, Van de Granff accelerator, statistical properties of
Approximation method for calculating binding energy of three nucleon system	nuclear states and transitions, and autologization of hydrogen
[fTF-67-12] 12 p1942 N68-22942	Nuclear chemistry research projects on recoils from
Mathematical methods to define nuclear states and nuclear reactions in refined cluster model [BMWF-FBK-67-93] 16 p2730 N68-28119	[NYO-2771-25] 13 p2118 N66-23671
Energy spectrum of tin 116 and effective nuclear forces derived from realistic nucleon-nucleon potentials of Yale and Tabakin	Browine and indine reactions in gameus, liquid, and solid hydrocarbon systems [COO-1617-10] 13 p2018 N68-23850
[IC-08-4] [7 p4948 P08-48040	Summary information on AEC off-site chemistry
Sum rules to study effect of correlations between nuclear binding energy in bremsstrahlung cross section	[TID-4005, Fr. 2A, 3 ED.] 15 p2414 N68-26239
[NP-17346] 17 p2934 N68-29046 Binding energy of lambda particle in success matter [IC-67-49] 18 p3126 N68-29652	Nuclear, chemical, and physical properties of nine, radioactive inotopes - associated bibliography
[IC-67-49] 18 p3126 N68-29652 Model studies and calculations for structures and	(NASA-SP-7031) 18 p302) Net-29939 Short residence extractors for decreasing residelytical degradation of solvent during chemical processing of
deformations of transuranium nuclear shells 19 e3320 N68-36869	irradiated sector fuels
Nuclear binding energy in many body problem with Gaussian potential [ITF-67-46] 19 p3328 N68-31246	Corrosion and radiation degradation of HIFAR ion
Mass law based on liquid drop model and tabulated	[AAEC/TM-428] 19 p3228 N68-31582
[LA-3751] 22 p3929 N68-35474	Electrochemistry of uranium, ulutonium, vesnelium, zirconium, and beryllium nuclear fuels [ANL-TRANS-610] 22 p3831 N66-36009
Lambda-hyperon binding energy in nuclear emul- sions 23 p4116 N68-36360	Foreign literature on millimeter band reseasters, Lunit 10 measurements, terrany systems for punitue-
Nuclear RPA force determination using Bruekser	ductor materials, nucleur chemistry, and Vosus protest
[JINR-P4-3849] 23 p4136 N68-37371 NUCLEAR CAPTURE	Tochnical progress report on nuclear clamintry research [COO-1167-3] 23 p4010 MM-36635
NT ELECTRON CAPTURE Research activities on collective effects in radiative	Progress in motion and radiochemistry, meclaar
(COO.1672-5) 05 o0718 N68-1474)	physics and instope separation and recovery [MLM-1494] 24 p4211 N68-37536 NUCLEAR REPORMATION
Optical model computer program for nuclear reac- tion particle stripping and capture [TID-24250] 13 p2114 N68-23301	Computer program for calculating single particle
Radiative neutron capture in synthesis of heavy	[JINR-P4-3326] 01 y0104 N08-10359
[FEI-64] 14 p2301 N68-24363	(JINR-P4-3432) 01 p0104 N69-10372
Capture effect in resonances of neutron-gamma reaction, measured with film-type scintillation counter [IAE-1349] 14 p2318 N68-25417	One particle states of deformed sucht in final poten-
Optical model transmission coefficients and cross	(JINR-P4-3451) 01 p0110 Non-10252 Parameter solution for sucher deformation in pair
(UCRL-50359) 15 u2512 N68-25692	[TR-29] 02 perset Heb-11352
Determining parity-noncommercing section force by capture of polarized thermal 5-courtress [RISO-167] 15 p2521 N64-26518	Theoretical studies of nuclear structure and truss-
(RISO-167) 15 p2521 Nes-26518	(UCB-34P141-8) 02 pa246 P468-11532

Electric quadrupole moments of first two plus states [FF-67-14] 05 p0706 N68-14121

Conversion and mudification of deformed nucleus optical model computer code 2 Plus used for analysis of acutering cross sections for heavy even-even nuclides Fortran 2 to Fortran H INAA-SR-MEMO-125321 05 p0714 N68-14542

Method for calculating one-particle states of illusion potential 05 p0715 N68-14598 deformed nuclei (JINR-E4-3453)

m 4 deformations in rare Determination of yttri earth region by inelastic alph [UCRL-17547/EXP/] 07 p1053 N68-17059

Spin quadrupole forces and collective states in eformed nuclei effects on tramition probability tion probability 10 p1562 N68-19586 [JINR-E4-3134] Nuclear deform ation in even ven-even nuclei, and use of in to find nuclear energy as

rtree-Fock approxis 10 p1565 N68-19726 nce on quadrupole

Nuclear potential energy de and octupole deformation for [JINR-E4-3629] 13 p2112 N68-23048

Deformed nucleus optical model for calculating autron wave strength functions of heavy even even [NAA-SR-MEMO-12538] 14 p2302 N68-24384

Mechanical damage by nuclear excursion in fast iteam-cooled reactor [FOA-2-A-2498-44] 14 p2288 N68-24429

Stability calculations for superheavy suclei from deformation energies and shell currections [JINR-P7-3733] 15 p2520 N68-26467

of ground and excited

16 p2726 N68-27952 Kinetic energy spectra and wave functions to con-ect individual and collective particle features of nuclei uring deformation for two body interactions 17 p2924 No8-28456

ar elastic and inelastic scattering, exchange is, proton scattering, and nuclear deformation

17 m2928 N68-28653 Model studies and calculations for structures and formations of transuranium nuclear shells

clear shells 19 p3320 N68-30869 Effect of nucleus deform on on neutron resonance

(JINR-P4-3925) 23 p4127 N68-37002

NUCLEAR-ELECTRIC MOMENTS
U ELECTRIC MOMENTS

NUCLEAR ELECTRIC POWER GENERATION NT THERMONUCLEAR POWER GENERATION

Design study of electrical component technology for 0.25 to 10.0 megawait space power systems [SAN-679-3] 01 p0006 N68-10967

Preliminary systems design of Autogenetically Con-rolled Cesium /or colloid/ Electro-Nuclear Throat ACCENT (NASA-CR-93255) 08 p1231 N68-17669

Peaceful application of nuclear et [TID-24102] op p1374 N68-18384

Reactivity effects ca in gas cooled, furt-spec [NASA-TN-D-4459] by radial power flattening 10 p1555 N68-19925

nuclear energy system 13 p1996 N68-24189 Thermoelectric conv (BMWF-FB-W-68-10)

nories on direct conversion al, or solar energy into electrical or mechanical (FTD-MT-64-355) 15 p2390 N68-26786

tric switch development Circuit breakers and el-or future nuclear electric

INASA-CR-1026 17 p2816 N68-29460 Conceptual design system suclear electric [UCRL-50382] of 10 MWe nuclear Rankine

ic space power 18 p3007 N68-30760 Parametric design data on canned ac induction mo-tion for space nucleur electric power systems [SAN-679-5] 19 p3205 N68-31544

WAED-47-45E) 20 m3402 N68-32748

SNAP 8 35 kW mucle (NASA-TM-X-61161) 20 p3532 N68-33238 Analytical conceptual designs on electrical power store components in advanced high temperature.

potassium, Rankine nuclear space power systems for 0.25 to 10.0 megawatt range [SAN-679-8] 24 p4198 N68-37438 24 p4198 N68-37438

cal level and pro Technologi duction of atomic indus-Technological level and production of atomic indus-try in U.S.S.R. and other nations (NIC-TRANS-2653) 24 p4320 N68-38243 NUCLEAR ELECTRIC PROPULSION

Nuclear electric and nuclear thermal propulsion stems for manned space flights and interplanetary

03 p0370 N68-12185

Nuclear reactor aspects of nuclear thermal propul-ion systems, and flight dynamics of nuclear electric repulsion systems 03 p0370 N68-12186

Relative payload capabilit propulsion systems compar nuclear electric, and chemica ies of radioactive isotope ad with nuclear reactor, ol propulaion systems 03 p0371 N68-12187

n of nuclear electric metary flight 14 p2337 N68-24688 BMWF-FB-W-68-14)

Computing optimal payload for near earth parking orbit to sys nuclear electric propulsion system [DLR-FB-67-86] ad for orbit transfer from to synchronous orbit by 16 p2770 N68-28279

Research and advanced development data on uclear electric propulsion, spacecraft design and stems engineering, electronics systems, and chemical NASA-CR-95761] 17 p2972 N68-29415

NUCLEAR EMULSIONS

Orthogonal mechanical scanner with electronic pulse length discrimination for automatic evaluation of nuclear track and solid detector plates [ANL-TRANS-509] 91 p0066 N68-10873

Design and operation of emulsion chambers exposed atmospheric radiation in Bolivia and Japan 01 p0115 N68-10930

Energy dependence of fragmentation parameters and interaction mean free paths in nuclear emulsion for heavy counic ray nuclei (CR-104) 02 e0262 N68-11349

Energy estimation in collision pions with suclei of photographi [INR-828/VI/PH] ons of very high energy c emulsion 02 p0245 N68-11443 Nuclear emulsion radiation detectors onboard emini spacecraft for measuring galactic heavy prima-

[NASA-CR-90107] 02 p0263 N68-11830 ns analyzed by means of Nucleon-nucleon i REPT.-813/6/PHI

04 p0546 N68-12852 elementary particle in-remulsions 04 p0547 N68-12904 Angular distributions teractions registered in a [REPT.-794/6/PH]

Charge determination sy particles from part on of heavy, multicharged coumic nuclear emulsion sta [NASA-CR-92750] 07 p1039 N68-16188 Nucleon interacti on nuclei in large

emulsion stacks (INR-813/VI/PH) 07 p1054 N68-17121 om using nuclear

emulsions in stro (JINR-P1-3563) 09 p1388 N68-18575 Finion like disinte duced by proton int nuclei in low sensitiv [INR-P-827/VI/PH]

09 p1392 N68-18938 of 16.2 BeV negative multions 09 p1395 N68-19215

on in cosmic rays 09 p1398 N6E-19358 Upper limit of ant [NASA-CR-93476]

in peripheral nucleus Excited baryon productions in a 12 p1937 N68-22789 [DIR-P-816/VI/PH] criticality studies with

CEA-R-3367 12 p1913 N68-23017 ont films type 508 and 510 for beta **Calibrating Dup** [EA-141] 14 p2206 N68-25068

High energy into nuclei of emulsions [JEN-174-DF/8-52] s of protons with heavy 17 p2926 N68-28563 nuon decays in nuclear

21 p3737 N68-34006 sclear photographic emul-[PTD-MT-66-74] 22 p3930 N68-35528 Nuclear interactions between nucleons of energies higher than 10 eV-12 and emulsion nuclei [ORNL-TR-1956] 22 p3931 N68-35577 Lambda-hyperon binding energy in nuclear emul-

23 p4116 N68-36360 Investigation of ionization coefficients, fading and distortion of charged particles in nuclear emulsions [JEN-194-IFIC/I-38] 23 p4129 N68-37071

Heavy hypernuclei pro 10 MeV/c kaon in nucl ed by incident radiation of (JEN-193-DF/I-57) 23 p4129 N68-37077

NUCLEAR ENERGY

Bibliography and indexes on experimental an theoretical high energy physics [AED-C-23-14] 02 p0246 N68-1153 02 p0246 N68-11530 Bibliography and inde-ecretical high energy phyon experimental and

(AED-C-23-15) 02 p0248 N68-11579 Relative displacement damage rates in differing reac-

(TRG-1561/D/) 07 p1034 N68-17184

el for atom energy, and evels by electrons 09 p1390 N68-18835 ntum mech sequential filling of qua [NASA-TT-F-1]496] tron and ga ama ray production cross section

[GA-7829, PT. 2] 11 p1753 N68-21023

Transfer functi eactivity pulses generated by regulating rod (APDA-NTS-14) 12 p1907 N68-22593

facilities within European 13 p2050 N68-24235

Comparison of power profile calculations with ex-eriment in ultra high temperature nuclear reactors re nuclear reactors 16 p2708 N68-28146 LA-DC-94271 Calculated and exp tribution in ultrahigh to [LA-DC-9511] ntal flux and energy dis-

16 p2708 N68-28147 Production of tritium from helium irradiated by high nergy protons

20 p3540 N68-32254 **Atomic Energy Commission computer information** [LA-3930] 21 p3664 N68-34146

Research activities at Ato nic Energy Commission computer information meeting [CONF-680511, SUP.] 21 p3664 N68-34153

Radial pulsation model for helium-burning main sequence star [NASA-TM-X-61283] 23 p4166 N68-36287

UCLEAR ENERGY LABORATORIES U LABORATORIES

NUCLEAR ENGINE FOR ROCKET VEHICLES

Systems engineering and analyses, ground support ment, test facilities, and management of NERVA development program [NASA-CR-91051] 03 p0368 N68-11960

Nuclear rocket engines to for extended-stay missions, performance data based on graphite reactors , and NERVA design and 03 p0371 N68-12189

of cryogenic insulation materials for spacecraft cryoger (NASA-TM-X-53670) os po750 N68-14651 clear ground test module -

05 p0750 N68-14657

IBM 7094 digital computer program for simulating steady state operation of NERVA hot-bleed engines over full chamber pressure and temperature operational ranges (NASA-CR-91269) 08 p1202 N68-17267 IBM 7094 transient engine simulation program for NERVA [NASA-CR-91272] 08 p1302 N68-17271

Performance evalu-mentation kit [NASA-CR-91273] on for NRX-A2 reactor instru-

08 p1203 N68-17296 Immersion type copper-constantan thermocouples for NERVA NASA-CR-91271] 06 p1203 N68-17313

Predicted full scale exha al radiation flux at proet plume length and ther-mate surfaces from scale model data [NASA-CR-91270]

06 p1203 N68-17314 Reactor design and development, interactions we nouzle and turbopump during integrated testing, a fabrication and safety efforts related to NERVA pr NASA-TM-X-60977] 11 p1743 N68-21402

A-826

NAS Sca nuclei (BNW High steppi Nucle VA/ [NAS Per loop p

SUBJ

Pre

NUCLE Nun TDC Met ments (CAL-

Mea radion (BNW Labo NUCLEA NT T

from O

Simu SC-RI Dete port co Seise muclear events, NP-16

charges nuclear (SC-RF RM-50 Signa TN-19

Crate

Nuck conduct (SR-52 subjects (LNESC

[LA-37 Select

(ESD-TR-67-597)

Attenuation by earth a om underground nuclea Bibliographic review of low energy nuclear fluid

Predicting heat transfer coefficients in cooling passages of Nerva and Phoebus-2 rucket nozzles [NASA-TM-X-52437] 13 p2171 N68-23862 explosions bus gle station - us tral ratio [TN-1968-8] Scale corrosion by untreated water in exhaust duct of nuclear engine for rocket vehicle ETS-1 [BNWL-632] 15 p2502 N68-26438 13 p2056 N68-23093 mputer program capable of simulating sliding or of boxlike structures caused by nucleur blast High speed flueric logic circuitry for pneumatic stepping motor actuator control system for use in Nuclear Engine for Rocket Vehicle Application /NER-14 p2367 N68-25546 VA/ [NASA-TM-X-59868] concepts for multistury og equipment, and person-16 p2592 N68-27449 Performance testing of NERVA XE-1 control drum actuator to determine its ability to function in closed loop positioning system [NASA-TM-X-32465] 18 p3114 N68-29973 14 p2367 N68-25548 d scientic data compila-burst detonation 15 p2462 N68-26493 rd mark (ECOM-5162) NUCLEAR EXPLOSION EFFECT Numerical and graphical analyses of hit chances and amage prediction in nuclear attacks on area and point cupture experiments and Prompt multiple neutro nthesis of heavy elements 19 p3319 N68-30867 (TDCK-49652) 07 p1104 N68-17214 Neutron flight transit tis ments using nuclear detonal [LA-3478, FT. 1] me cross section measure-tion as neutron source 21 p3742 N68-34445 Methods of evaluating capabilities of civil defense communication systems to meet operational requirements during and after nuclear attack [CAL-VP-2269-H-5] 08 pl 147 N68-17859 Flush blindness indoctrination and training device for pilots operating in nuclear combat zones 21 p3643 N68-34540 Amotated bibliographies of radiation effects on ectronic components and apparatus, and nuclear ex-osion effects on radio communication, radar, and Electromagnetic interference protection as aspect of noise reduction - criteria, design procedures, and hard-ware specifications (TDCK-49707) 13 p2040 N68-23846 22 p3916 N68-35127 arement and behavior of airborne lides at different latitudes since 1962 SA-1739] 17 p2880 N68-29317 al radiation hydrodys ics in high temperature air from nuclear explo (LMSC-3-27-67-1, V. 5) Rate of emission of thermal radiation from nuclear weapon detonated at low altitude, and relationship to flash blindness 22 p3978 N68-35338 Transient phenomena occurring in ventilation stem of EUREX nuclear fuel reprocessing plant after 21 p3643 N68-34536 Laboratory studies of flash blindness parameters and quantitative methods for predicting effects on visual aculty of pilots of high performance aircraft 21 p3643 N68-34537 m explosion [RT/PROT/68/8] 22 p3827 N68-35606 n in long pipes by obstacles to Shock wave attenuation in k amess nuclear blast protection [ORNL-4288] 22 p3974 N68-35681 NUCLEAR EXPLOSIONS

NT THERMONUCLEAR EXPLOSIONS Scattering of gamma rays in earth atmosphere fol-lowing high altitude nuclear explosion [LA-3944] 22 p3933 N68-35690 Measured decay of Starfish electron radia from October 1963 to October 1966 [NASA-CR-90542] 02 p0263 No on in high energy hadron interactions 23 p4132 N68-37167 [INR-P-915] 02 p0263 N68-11826 Inner zone proton flu tion belt - decay lifetime [TR-0158/3260-20/-1] luses and spectra of earth radia-tes for Starfish electrons **NUCLEAR FISSION** Effect of physical parameters on shape of neutron spectrum fission peak in hydrogen moderated reactors [KAPL-M-6714] 01 p0089 N66-10124 03 p0412 N68-12089 onimetry facility at National Nuclear Energy Instal-n in Rome Simulated small scale overburden stripping by nuclear explosions in open pit mining of oil shale [SC-RR-66-477] 03 p0430 N68-12754 [RT/PROT/67/12] 01 p0048 N68-10990 Detector angle integration program designed for uclear detonation neutron gamma Monte Carlo transcorrelation for angular by neutrons 09 p1393 N68-19054 Simple semiempirical anisotropy of nuclear fimi [ANL-TKANS-548] port code [NDL-TM-37] 03 p0399 N68-12799 Seismic spectra and high pass filtered seismograms, nuclear explosion detection in presence of natural events, and data processing in large aperture seismic serge studies. lear flasion reactions, in-10 p1565 N68-19725 uranium 238, helium-ion utetium, and thulium, and (ESD-TR-67-615) 05 p0653 N68-14650 Helicopter-based detection of nuclear explosion ground radiation [NP-16766] 05 p0653 N68-14706 11 p1649 N68-21029 (COO-1716-4) s dealing with gaseous elec-nt electrons, laser radiation. Crater, ejecta, and air-blasts from five high explosive charges in horizontal square array for simulating nuclear explosions for peaceful applications (SC-RR-66-480) 6 p0838 N68-15491 11 p1765 N68-21812 pture, and fission in-Cross sections, resonal tegrals of long lived americ (BNL-TR-175) 12 p1933 N68-22646 Progress results for studiend earthquakes and explosio (AD-663219) lies in seismic phenomena (JINR-P7-3617) 07 p0992 N68-16878 12 p1909 N68-22748 Equation of state of water for predicting motions and pressures following underwater nuclear explosion [RM-5050-PR] 08 p116f N68-17655 Thermomechanics [ANL-TRANS-558] fool element burnup 12 p1912 N68-22960 affect of finite material (DP-1121) Signal processing experie obtained by large aperture a [TN-1967-30] on long period data ulating critical nucle ic array 08 pt 169 N68-17769 13 p2105 N68-23113 here with finite electric form magnetic field 09 pt 399 N68-18284 eter of nuclear finion, from californium 252 13 p2114 N68-23164 Testing quasi-statisti and calculating mass di (IAE-1389) [SR-52] subjected to large amounts of radiation
[LMSC-3-27-67-1, V. 4] Low energy pamma products of californium [SGAE-PH-39/1967] e from nuclear fluides 14 p2302 N68-24385 ntification and yield of palledium 117 in thermal on fusion of uranium 235 RDL-TR-68-25] 15 p2520 N68-26446 Lightning efficients (LA-3755) explosion detection and 10 p1558 N68-19816

NP-17325)

LILL-CONF-1, SUP.)

10 p1523 N68-20239

of compression waves

12 p1967 N68-22238

radiation distila, and related sociour finding, about triety, and neutron removal data 17 p2933 N68-28982 17 p2939 N68-29230 delayed gamma rayo for m 239 and urunium 235 18 p3133 N66-302 ergy spectrum of d ron flation of phitonius [GA-7348] Plasma exaction kinetics, and electron energy and ensity in plasma studied for direct convention of discretic matter finites energy in plasma discretications. In page 18 page GMR-7671 counter for nuclear r [CONF-661020-18] 18 p3118 N48-30 Mass balance es in nuclear reactor [AECL-3109] ergy released per flusion 18 p3119 N66-30717 Nuclear reactions /d_p/ and /d_f/ lending to spontane-ously fissionable americism isotopes [JINR-P6-3744] Nuclear fusion of us ad fast neutrons to d m 235 by thermal noutrons nine kinetic energy of flui [ANL-TRANS-606] 19 p3332 N68-31577 e in florion tra Single particle states id on nucleus uranism-235 20 p3544 N68-32789 Atomic energy levels determion excitation states, and investmental (NYO-3938-1) sined from nucleur fis-tigation of odd A macket 22 p3933 N68-35742 n thermocouples for 1DO-172681 22 p3937 N68-35910 ower reactor core reactivity most during rise in power 23 p4104 Nb0-37187 Photofusion fragment distribution of integic planting, therium, and armium at beautiful (ANL-TRANS-639) 124 p4309 N68-37576 Low energy alpha particle pectrum measurements armium 235 24 p4313 2008-37779 from thermal s (INR-P-911) Average burnup determinen dioxide fuel rodo folio on for Zirculoy-2 clad-ing irradiation 24 p4295 Not-37846 (GEAP-3398) Excitation energy effects of uranium 238 finism on fragment man and kinetic energies [LA-TR-68-21] 24 p4316 7688-379[5 NUCLEAR FUEL ELEMENTS Selection of optimum fuel of liquid metal cooled reactors [UCID-15168] 01 p0089 N68-10217 ber plate effic -(EUR-3615.D, V. 1) OL p0091 N68-10446 internal heat flow equal tures of various shaped rai [ORNL-P-3189] for maximum tempers Stock OI p0092 Nes-1046 deposition from gas phase for [KFK-335] 01 p0024 N68-10734 es of Budgies on marriady in ds for reactor find sh (TRG-1427/5/1 02 p0237 HAB-11184 ren at a large and built-TOTAL ST 92 p0238 NAS-11529 02 90178 3468-11757 a of nuclei with high energy Purtable passes spectrometer for subgraving to 15 p2524 N68-26757 03 p0342 N68-13053 (ACNP-67516) 03 p0370 N68-12123 17 p2933 N68-28980

FRG

IRT/IN

Theoreticality of with two [RISO-

Four ment lif [ANL-I

Constanalysis cal reac [NASA

Cracl

Then

WAPE

Neuti

BNWI fuel ele tor /HW (DP-99

Proce with me [SGAE

Parai

nuclear ISGAE

Radio mined loss on finic (SGAE

Then cooled [BNW]

Com

Critic ture res (LA-D

NASA

peratur JUL-5

Com

Oxide a

Hydr

Com

[NAA-

tered p

Corn of class cooled [ANL-

Prep traps fo

(LA-3

Com

[IN-11

Spec

RITMO

Fuel

Then harges

(AECL

Computer programs and tape controlled drilling achine for production of fuel assembly cluster plates for zero energy reactors [AEEW-M-699] 03 p0347 N68-12162 Development and operation on of pressurized water (WAPD-MRP-120) 03 p0372 N68-12259 Zirconium alloy for cladding of nuclear fuel rods [GEAP-5424] 03 p0373 N68-12358 us p0373 N68-12358 means in reactor research, and engineering develop-[ANL-7286] Research and developmentide fuel element fabrica [WCAP-3791-4] nt of uranium photonium 03 p0373 N68-12424 Various research activities for suclear reactor [ANL-7357] 03 p0376 N68-12532 Uranium oxide and pherimental boiling water oxide fuel rods for ex-BNWL-SA-1139/REV.A/] 03 p0376 N68-12539 Cost estimates for preparation and fabrication of solid-gel metal-clad uranium and plutonium oxide fuel 03 p0376 N68-12553 [ORNL-TM-1979] Characterization and cladding-fuel evaluation of tainless steel uranium oxide fuel elements for nuclear ORNL-TM-1676) 03 p0377 N68-12610 Preparation and producton of fast reactor fuel ele-[KFK-564] 03 p0379 N68-12676 Cylindrical fuel element flow stab (APDA-181) 03 stability program 03 p0380 N68-12707 Thermal expansion characteristics of column of ranium oxide fuel pellets under radial temperature GEAP-52841 03 p0381 N68-12733 Fluidized bed coating of uranium monocarbide with (TRG-1544/S/) 04 p0466 N68-13038 Gamma scanning and cobalt monitoring for non-lestructive evaluation of burn up in two irradiated charges of nuclear fuel samples charges of nuclear (RT/ING/67/14) 04 p0538 N68-13377 Magnetic pulse forming used as a fastening chilique for fabricating CP-5 fuel elements ANL-7343]
05 p0665 N68-13939 [ANL-7343] Nuclear fuel elements fabricated for irradiation in EURATOM fast flux broader reactor [EURFNR-318] 05 p0692 N68-14218 d aluminum, and zirconium alloy by nuclear ell penduct recovery and storage 05 p0621 N68-14253 Refined alu ractor fuel pr reactor fue (IN-1114) Analytical method for determining reactivity hanges of fast reactor core due to elastic-plastic stress ad creep 05 p0693 N68-14353 Composite computer program for thermodynamic heat transfer of coated fuel particles in gas cooled reac-[GAMD-8119] 05 p0755 N68-14434 Experiments, and property measurements with second core load of fast thermal reactor [KFK-592] 05 p0695 N68-14536 Thermal conductivity of uran nuclear fuels [LA-DC-9059] nium plutonium carbide 05 p0755 N68-14544 Superheat nuclear fuel element to [GEAP-5485] os poese Nes-14712 Fossibility study and in-pile experiments with twisted tape prototype fuel elements for boiling water reactors [EUR-3651.E] 05 p0696 N68-14736 Preliminary design criteria for fast fuel element testing reactor [ORNL-TR-1786] 05 p0696 N68-14764 Instrument development for for safety, fuel elements, is ments, and analog simulation (IDO-17234) nt for radiation detector, reac-s, neutron spectral measure-

05 p0664 N68-14894 nponent and systems development for scienr technology, fuel elements, and 05 p0664 N68-14896 and in-pile caps (ORNL-4190) ng allowable temperature gradients for anium dioxide fuel elements uning experi-Nuclear fuel elen (ORNL-4170) 05 p0697 N68-14986 and characterization of loxide fuel elements for

ns for small, cylindrical, lithium cooled reactors for spa (NASA-TN-D-4371) ce power systems 06 p0876 N68-15792 Plum Brook reactor support calculations - mathe-natical model for fuel utilization, power distribution in sel loading, and approximate predictions of xenon pluon transport poison transient NASA-TM-X-14961 06 p0877 N68-16056 Fuel and blanket metals, ceramics, and other materi-(IS-RD-11) 07 p1023 N68-16135 Critical experiments on single fuel element to determine nuclear par [MIT-2344-10] tor lattices 07 p1024 N68-16195 Helium and air flow tests over single flat plates to etermine dynamic pressure limits of nuclear fuel ele-(NASA-TN-D-4417) 07 p0983 N68-16227 Power distribution sactor using gamma s urement in boiling water of 1B cycle [EURAEC-1916] 07 p1026 N68-16296 Thermoelastic response of fuel elements and cladding, and ejection of liquid metal coolants from core in pulsed fast reactors [EUR-3634.E] 07 p1028 N68-16433 Effective surface area of fuel clusters for resonance stegral calculations [AECL-2775] 07 p1029 N68-16536 Nuclear fuel elements in Pegase reactor core [CEA-R-3213] 07 p1029 N68-16574 Irradiation behavior of Zircaloy 2 clad thorium-ranium zirconium fuel elements under water cooled over reactor conditions BNWL-479) 07 p1030 N68-16629 Compilation of thermal fission yields for U-235, U-233, Pu-239, and Pu-241 for use in nuclear fuel burnup [GEAP-5356] 07 p1047 N68-16637 Superheater test fuel elements irradiation in steam loop of R2 reactor [AE-308] 07 p1031 N68-16794 Plutonium fuel requirements for sodium cooled and team cooled fast breeder reactors KFK-661] 07 p1031 N68-16831 Production and release rates for nuclides from uranium oxide fuel elements
[RT/FIMA/67/2] 07 p1032 N68-17037 Effect of temperature, stress, and material variables on elastic, plastic, creep, hot pressing, and fracture strength of unirradiated oxide nuclear fuels [WAPD-TM-587] 08 p1201 N68-17241 Synthesis, fabrication, and ties of plutonium and ura nuclear fuel materials [LA-3820-MS] n, and high temperature proper-ul uranium carbide and oxide 08 p1202 N68-17263 Feasibility of venting fis tonium alloy fuels to sodium [LA-3766-MS] on gases from liquid plu-08 p1202 N68-17264 IBM 360 computer program for model calculations of heat transfer of liquid cooled 7-rod cluster fuel ele-[EUR-3733.E] 08 p1203 N68-17293 Mark 2 annular superheat nuclear fuel irradiated to termine stress corrosion of selected cladding materi-[GEAP-5510] 08 p1203 N68-17323 Fuel plate temperature m test reactor to determine lin [AFIT-TR-67-9] rements in engineering 08 p1205 N68-17637 at transfer analysis of high Revised steady state he us isotope reactor fuel ele flux isotope reactor (ORNL-TM-1904) 09 p1374 N68-18463 Index spectrum s cluster fuel elements [EUR-3736.E] nts in uranium carbide 09 p1374 N68-18534 Energy produced by heat released in cylindrical fuel [FFEF-455] 09 p1374 N68-18550 Fuel element of for core of fast thermal [KFK-668] 09 p1377 N68-19013 car fuel elements

10 p1555 N68-19664

tor materials research 10 p1540 N68-20426

and materials tests for

10 p1556 N68-20430

tor elementary cells 10 p1557 N68-20435

[REPT.-821/9A/PR]

06 p0872 N68-15015

Single fuel element discharge tube modifications and hydraulic evaluation [NAA-SR-MEMO-12536] 11 p1684 N68-21088 Velocity effects on nucle [NAA-SR-MEMO-12401] el element erosion 11 p1739 N68-21091 er fuel ele Thermodynamic properties of thermal breeder fuels with ternary thorium and uranium matrices [ORNL-TM-2015] 11 p1713 N68-21093 Hydroelastic instabilities in nuclear reactor flat plate fuel elements, and flutter in plate assemblies subjected to high coolant flow rates 11 p1740 N68-21104 Postirradiatio on of fuel bundles in heavy water, organic cooled reactor [Al-CE-76] 11 p1741 N68-21229 Post-irradiation examination of uranium dioxide fuel temblies from Carolinas-Virginia Tube Reactor Post-irra CVTR/ [WCAP-3850-1] 11 p1742 N68-21272 Ultrasonic band testing b uranium core in nuclear fuel (REPT.-856/14/PS) ween tubes and metallic nents 12 p1902 N68-21891 Plutonium dioxide nuclear fuel element package of BR-5 reactor - inotopic electric power sources for radio meteorological stations [JPRS-45100] 12 p1903 N68-21972 Plutonium dioxide fuel element package from BR-5 12 p1903 N68-21973 Powdered uranium-alus nuclear reactor fuel eleme [IN-1133] e compounds for use as 12 p1904 N68-22327 Fabricating ura shcritical assemble um fuel plates for [AAEC/TM-404] 12 p1905 N68-22455 Technical research and development in reactor fuel (ANL-7403) ·12 p1905 N68-22527 tion of irradiated 12 p1906 N68-22536 Computer progratudies for reactor (BNWL-534) sents, and theoretical 12 p1906 N68-22538 for organic cooled lattices with simulated burned-up uranium dioxide feels
[DPST-68-83-1] Design, fabrication, and evaluation of molyhdenum clad, high temperature fuel pins used to provide ir-radiation data for full length reactor fuel pin design [NASA-CR-72387] 2 p1907 No8-22587 Irradiation effects on initial gap measured on urani-m oxide fuel elements sheathed in thick tubes CEA-R-3358] 12 p1909 N68-22760 [CEA-R-3358] Irradiation testing of belements in VAK reactor [AEG/E31/-873] ng water superheater fuel 12 p1910 N68-22796 Specifications for fabri n of plutonium bearing [ANL-7313] 12 p1911 N68-22855 fuel element burnup 12 p1912 N68-22960 Thermomechanical [ANL-TRANS-558] Parameters affecting install detecting jacket ruptures of rea [CEA-R-3342] tion of equipment for for fuel elements 12 p1879 N68-22973 Method for thermal calculation of fuel elements constains of concentric tubes with smooth or longitudinally finned surfaces - ALGOL computer program [UJV-1839] 13 p2104 N68-23061 Optimization of tubular I dinally finned tubes - graphs (UJV-1840) el elements with longitu-13 p2104 N68-23065 Plutonium as fuel in m reparation, Panther code ar reactors, fuel rod diffication, and critical facility adaptation (EURAEC-1885) 13 p2106 N68-23265 Space distribu ation analysis on heat sources in reactor (UJV-1876) 13 p2106 N68-23288 Fuel cost program for use of plutonium in thermal (EUR-3890.1) 13 p2107 N68-23663 Post irradiation est fuel elements [BAW-3809-1] ation of thorium-urani 14 p2287 N68-24372 Nuclear fuel elements and reactor materials (RISO-151) 14 p2291 N68-24759 Corrosion rates for Monel and stainless steel equip-nent used in zirconium alloy nuclear fuel reprocessing [N-1134] 14 p2275 N68-25603

mental cyclic strain da [NASA-TN-D-4279]

fab

Pu and U oxides, Zircaloy 2, flusion products, reac-tivity, and neutron physics in nuclear fuel element FRG - computer program for evaluating heat over-uzes due to pellet occentricity or cladding irregulari-15 p2500 N68-26114 [QR-16] 18 p3121 N68-30850 [RT/ING/67/11] Theory and computer programs for calculating criti-cality of three dimensional reflected reactor lattice with two group formalism [RISO-M-645] 15 p2501 N68-26178 ffect on Doppler coefficient of 19 p3310 N68-31344 15 p2501 N68-26178 Absorption cross section measurements in samples staining burnable poisons used for reactivity control Four computer codes for predicting nuclear fuel ele-(RT/FI/68/8) (ANL-RE-391) 19 p3311 N68-31505 15 p2501 N68-26421 Design of plant for chemical processing of irradiated Constant creep data accumulation for design stress analysis on cladding material thickness around cylindrical reactor fuel element [NASA-TN-D-4352] 15 p2504 N68-26764 (NP-17368) 19 p3227 N68-31579 Short residence extractors for decreasing radiolytical degradation of solvent during chamical processing of irradiated nuclear fuels (NP-17366) 19 p3311 N68-31590 Crack and void elimination on thorium oxide urani-um oxide pellets by irradiation [AECL-3008] 15 p2505 N68-26799 [AECL-3008]
Thermal gradient bowing of axially compressed rod type fuel elements in terms of its deflections [WAPD-TM-726]
15 p2505 N68-26833 Fuel dynamics of thin walled metallic uranium tubular reactor assembly
[HPR-89] 20 p3531 N68-32981 20 p3531 N68-32981 Phoebus 2A 5000 MW reactor test preparations and sel element developments in Rover nuclear rocket Neutron scattering, criticality, control, fuel element, d shielding studies for nuclear research and test reac-[LA-DC-9589] [BNWL-685] 15 p2506 N68-26942 20 p3531 N68-33086 Irradiation of Zircaloy-clad tubular uranium oxide el elements in Heavy Water Components Test Reac-Thermal conductivity measurements on sintered pel-lets and compacted uranium dioxide fuel in reactor pile tor /HWCTR/ [DP-995] 16 p2703 N68-27200 [GEAP-5100-6] 20 p3532 N68-33132 Processing method for impregnating coke granules with metal carbides for use as reactor fuel [SGAE-CH-49/1967] 16 p2703 N68-27636 High flux isotope reactor fuel element fabrication ORNL-42421 20 p3533 N68-33323 Input properties for computer description of reactor Parameters affecting pyrolytic carbon coatings of nuclear fuel particles in vortex bed [SGAE-M-16/1968] 16 p2704 N68-28009 Radiative history of expended nuclear fuels determined by gamma-spectroscopic intensity measurement [SGAE-G-5/1968] kaPL-3300] 20 p3534 N68-33431 Temperature distribution in uranium dioxide reactor fuel elements - mathematical description of heat trunsfer mechanisms in cylindrical fuel elements [AE-318] 21 p3724 No8-34108 Computer analysis powder cladded uran [EUR-4031.F] Fuel handling evaluation for fast flux reactor refuelalysis of burnup for sintered aluminum uranium carbide fuel rods 21 p3724 N68-34359 (BNWL-683) 16 p2707 N68-28126 Thermal and hydraulic test cooled reactor fuel element de [BNWL-599] st program for fast sodium Spectroscopic irradiated nucles sis for transuranium isotopes and t (EUR-3949.E) ear fuel element analy-16 p2707 N68-28128 21 n3725 N68-34381 Computer program for calculating steady state deformation rates of cylindrical fuel elements [BNWL-663] 16 p2707 N68-28129 Plutonium extraction from nuclear fuel elements by high speed centrifugal extractors [KFK-652] 21 p3725 N68-34403 Solubility of sintered uranium oxide-plutonium oxide breeder reactor fuel in nitric acid [KFK-673] 21 p3725 N68-34404 Critical loading experiments ture reactor experiment facility [LA-DC-9424] ts in ultrahigh tempera-16 p2710 N68-28285 Vibration tests of concentr port structure for Tungsten W [NASA-TM-X-1608] stric tube fuel element sup-Water Moderated Reactor 16 p2791 N68-28330 ce of plutonium dioxide fuel elements in BR-5 reactors [ANL-TRANS-609] 21 p3726 N68-34476 Thermal conductivity of coated nuclear fuel particle charges with filler gas as function of pressure and tem-Techniques for fabrication of nuclear fuel elements for high flux isotope reactor and advanced test reactors JUL-511-RX 17 p2984 N68-28543 [ORNL-TM-2197] 21 p3727 N68-34613 Computer program and implicit difference method for calculating transient microscopic temperature distribution in matriz fuel elements
[FUL-S26-RE] 22 p.3911 N68-35740 Complete functional description of high flux isotope sectors with reactor design, safety, fuel, control, and [ORNL-3572, REV. 2, V. 1A] 22 p3911 N68-35740 17 p2930 N68-28796 Nondestructive method for burn up determination of coated uranium and thorium nuclear fuels [JUL-529-RX] 22 p3912 N68-35845 ration of tho anium and plutonium oxide gels and sols as nuclear fuel elements [ORNL-TM-2205] 17 p2840 N68-28797 Hydrogen permeation through SNAP 8 fuel element cladding assemblies [NAA-SR-MEMO-12425] 17 p2916 N68-28975 Cleaning, assembling, welding, and testing of stain-ins steel jacketed fuel elements for Zero Power Plu-mium Reactor (RFP-1078) 23 p4102 N68-36809 Estimation of Weibull density function parameters from failure data [BNWL-SA-1920] 23 p4102 N68-36841 Combustion characteristics of uranium oxide sintered pellet and powder nuclear fuel elements [GEAP-5585] 17 p2917 N68-29233 Corrosion tests on vanadium alloys in development of cladding materials for fuel elements of sodium cooled fast breader reactor [ANL-TRANS-600] 17 p2902 N68-29271 Thermal disadvantage fact fuel rod and water lattice cells [WAPD-TM-672] 23 p4103 N68-36974 Uranium recovery from aluminum clad fuel elements using Molten Salt Volatility Pilot Plant [ORNL-4251] 23 p4069 N68-37098 Preparation, thermodynamic properties, and cold traps for ceramic Pu, PuC, and PuN nuclear fuels, and breeder reactor physics studies [LA-380-M68-29410] Very high burnup vapor transport fuel pin concept for long life nuclear reactors
[NASA-TN-D-4860]
23 p4104 N68-37209
Fast neutron irradiation effects on nuclear fuel elements and cladding materials
[UNC-5201]
23 p4104 N68-37222 17 p2918 N68-29410 Compressive yield strength of composite aluminus mucleur for (IN-1179) 17 p2918 N68-29471 33 p4104 N68-37222 abunium alloy container NWL-240] Specific power distribution ranium oxide boron oxide of uranium oxide and mixture fuel rods in RITMO nuclear reacto [CNEN-RT/FI/68/13] 18 p3114 N68-30055 Fuel burnup and core power distribution found by amma radiation detection in fuel rods of experimental irradiation of sintered fuel petter rods with tempera-tures above aranium oxide melting point [CONF-670967-1] 24 p4293 N68-37570 boiling water reactor (BNWL-653) 18 p3119 N68-30701

is of radioactive materi-

18 p3057 N68-30714

Supercritical water cooled apped clad fuel elements in re lesign, and loop performance of WCAP-3374-8] Average burroup determina-dioxide fuel rods follor on for Zircaloy-2 clad ing irradiation 24 p4295 N68-37866 (GEAP-5598) actor fuel element safety for Danish or DR2 using gamma spectrometers 24 p4296 N68-37888 research reactor (RISO-M-732) Computer program for cost estimating fabrication of nuclear fuel elements
[ORNL-4287] 24 p4298 N68-18441 Reactor physics studies in fuel elements, fusion and criticality, cooling gases, core calculations, and related (BNWL-775) 24 p4298 N68-38497 NUCLEAR FUELS
NT CERAMIC NUCLEAR FUELS Chlorine fluorides for reprocessing irradiated mixed [EURAEC-1868] 01 p0020 N68-10404 Zirconium alloy evaluated as nuclear feel clade (GEAP-5516) 01 p0092 N68-10470 Corrosion and hydriding tests of Zircaloy and schanical properties of hydrided Zircaloy for fuel adding applications cladding applicate (BAW-3765-3) 01 p0076 N68-10679 in-pile heat tramfer studies of roughened helium cooled reactor fuel elements [ORNL-P-3202] 01 p0093 N68-10708 01 p0093 N68-10708 irradiation behavior of Zircaloy-clad fuel rods con-taining dished-end aranium distale pellets [WAPD-TM-629] 01 p0094 N68-10724 Fuel analyses and production engineering mea Phase relationships, fabrics sub-stoichiometric oxide mucle [EURFNR-286] ation, and properties of sir fiel 01 p0096 N68-10949 Uranium carbide prep tetrafluoride, ammonium dis ide studied to optimize produ [AI-CE-73] preparation from uranium um discranate, and uranium triox-02 p0175 N68-11281 Deep sex radioisotope for tor power supply system de [MAM-3691-20] eled thermoelectric genera-ign 02 p0237 N68-11382 Epithermal-to-thermal uranium 238 neutron capture rate in Agesta power reactor fuel
[AE-299] 02 p0238 N68-11497 Experimental results for work on effects of extended contact between trace-irradiated photonium fuels and 500 to 700 deg C sedium [LA-3745] 02 p0238 N44-11534 Perturbation theory app study of pebble bed reactor [AAEC/E-161] ch to fuel man 03 p0369 N68-11988 ble bed reactor fuel cycle rix fuels 03 p0346 N66-11989 Grind-leach procum for pe-comminution of beryllia ma [AAEC/E-162] plutonium thorium-beryllium ction for pebble bed reactors 03 p0369 N68-12004 Burnep survey of oxide fuels and fuel select [AAEC/TM-350] SNAPTRAN program to provide muclear safety data on rapid transient behavior of zirconium-hydride-uranium fuels (IDC-17204) 03 p0372 N68-12202 m fuel cycle o clad, helium cooled (ORNL-TM-1789) ide graphite reactor 03 p0373 N68-12420 03 ±0427 N68-12442 merical analy from clean experime In-pile corrosion of nuclear materials [EURAEC-1825] 03 p0375 N68-12472 Nuclear power restion and testing [EUR-3380.F] m and fuels prepa 03 p0375 N68-12475 Pulsed neutron techniques for determining nuclear parameters of subcritical lattices of partially earlied resistant rocks in heavy water (MIT-2344-07) 03 p0376 M68-12541 Low temperature, water cooled and moderated, en-ched uranium metal fueled reactors for deading duced changes in Zircaloy-4 clad rod lensity urunium dioxide fuel pellets 6] 24 p4294 R68-37739 ORNL-TM-1152, REV.] 03 p0379 N68-12690

IEUR

Con

GA-8

Plut for Far (BNW

Fuel breeds [GA-5

Mic

NLC

Dev gravin and pl [NUM

Projection in the project in the pro

Effe

perim NUM

Elec

try, p

CEA

Pro

Res

reacto engine develo [ORN

Dig flux as (EUR

Res

Plu

[JAE

Fas

Val Pu au (EUR

Net trol o reacti [NAS

Dis Pu/No [KFK

Cri mode [BAV

Bib

The nucle (LA-

Fal

(GE/

cobal (BNI

(CNA

natimation of thermal decor-tonium hexafluoride in process ([ANL-7347] Systems analysis program for low enrichment fit reprocessing, nuclear reactor component and enginesing research, and bromine pentafluoride for product uranium hexafluoride [K-L-1780, PT. 17] 03 p0380 N68-1266 osition rates of plu-07 p0956 N68-16461 sical technology research - fuel recovery Chemical tech 03 p0380 N68-12699 Computer codes for um-water lattices [GA-7562] flux spectra of plutoni-(IN-1087) 07 p1028 N68-16465 03 p0380 N68-12726 Terminal eva cluster superfica [GEAP-5481] n of nuclear experimental rod Vapor densities and dissociation pressures used to termine thermal stability of zirconia and thoria base 07 p1029 N68-16541 program for computin lear fuel burnup from mai is of uranium, plutonium fuels [BMI-1789] FORTRAN-4 comp 03 p0382 N68-12749 m and plut ometric me es for circuits and cells of 03 p0318 N68-12752 [GEAP-5355] 07 p1047 N68-16638 ma scan and wire activation methods for mea-nuclear fuel entings ce of fast reactor fuels - evalus-onium dioxide fuels 07 p1032 N68-16999 suring nuclear fue [TRG-1464/W/] 04 p0537 N68-12866 Computer program for investigating hazards as-ociated with radioactive particles injected into at-susphere from rentering nuclear powered spacears SC-CR-67-2645) 07 p0993 N68-17063 Possible European production of polonium 210 using ismuth irradiation in graphite-gas power reactor ELDO/SP/67/17] 04 p0540 N68-13648 bismuth irradiation (ELDO/SP/67/17) Compatibility of materials for single, and for multiple loop Rankine cycle power systems [ORNL-TM-1964] 04 p0541 N68-13744 maphere from reen (SC-CR-67-2645) 04 p0541 N68-13744 Annual report on reactor fuels and materials Fuel element irradiations, data of high flux inotope reach [ORNL-TM-2017] [MLM-1402] 07 p1033 N68-17145 d operational systems Titration method fin solutions of irradia [CNEA-192] for uranium concentration analysis sted fuel reprocessing plants 07 p0960 N68-17192 04 p0541 N68-13757 Radiochemical determine release from coated fuel po on of fission product cles surrounded by gran of failed fuel in reactor core ORNL-TR-1789 [JAERI-1147] 08 p1204 N68-17348 04 p0541 N68-13864 Thermodynamic and optical properties of uranium plasma in proposed gaseous core nuclear rockets [NASA-CR-72348] 08 p1217 N68-17430 Stabilized uranium liquid metal-cooled fa [WCAP-3791-8] carbide solid fuel for 04 p0542 N68-13896 Japan Research Reactor-2 irradiated fuel storage um and uranium oxide d thermal reactors 05 p0691 N68-13995 rradiation testing of p [JAERI-1153] 08 p1158 N68-18034 [NUMEC-3432-35] Bibliography on thermal, mechanical, and stress properties of coated particle fuels

[LA-3791]

On p1374 b461,8450 Thermal diffusivity, heat cap pacity, thermal condu-of SNAP fuel materials 05 p0753 N68-140 (NAA-SR-11959) centrifugal mixer-settler in of Performance of or reprocessing of nuclear fr [DP-MS-67-71] rating characteristics of flux test facility 05 p0692 N68-14129 09 p1348 N68-19027 BNWL-SA-14341 rs of uniform aqueous Use of plutonius (EURAEC-1929) nuclear reactors 09 p1377 N68-19044 solutions of urani [ORNL-CDC-2] 05 p0621 N68-14259 210 data sheets 09 p1297 N68-19055 n 238 and p Safety studies for 2-clad spent nuclei [ORNL-4061] ch processing of Zircaloy nts of experimental boiling water Critical experi 05 p0622 N68-14376 um recycle [ANL-7368] 09 p1378 N68-19066 Hydrodynamic characteristics, ad burnout limits for 6-rod ch instability thresholds, unters in natural and Oranium base fuel assembly dev [ORNL-4108] 09 p1379 N68-19264 forced circu (FRIGG-1) 05 p0694 N68-14483 Nuclear reactor and fuel pro-dues of basic fission parameters. ocessing technology, ation of Yankee Engineering a 05 p0695 N68-14594 09 p1379 N68-19323 Finion produc facts at high temp [CEA-BIE-86] or of dispersed nuclear and uranium di fust nuclear read (BNL-11612) 05 p0695 N68-14663 Uranium and coramic contings claddings dioxides and nitrides, ion effects on fuels and Literature survey on med perties of nuclear fuels as potential use in pulsed fast re [BMI-X-455, PT. 1] (BMI-1309) 06 p0871 N68-15011 sitride fuels for liquid Summary of nuclear re principles of nuclear rocket NASA-TM-X-52406) 06 p0871 N68-15012 ed and pyrolytic graphite-coated fuel Nuclear fuels and materials it 06 p0872 N68-15014 e physical and mechanical proper-naterials for fueled and nonfueled

crosol properties of vaporized plutonium dioxide tranium dioxide in simulated accidental release of power excursions 10 p1554 N68-19640 hanical and physical pro-10 p1555 N68-19641 rs, fuels and operating 10 p1555 N68-19830 March 10 p1556 N68-20429 nation of pyrocarbon oxide spheres 11 p1703 N68-20963 Microradiographic de conting thickness on plute [LA-3814] 06 p0873 N68-15352 Irradiation experiments fo ture effects from stoichion uranium dioxide fuel specim asurements of depar-on heat transfer in steel clad with uranium 06 p0787 N68-15360 (BNWL-536) 11 p1652 N68-21285 or lattices including ef-Moisture effects on serv simulant reactor fuel in air [ORNL-4198] ced by arc melting 06 p0875 N68-15493 12 p1904 N68-22411 gy for reactor fuels and ry for characterizing Development techn oneters 07 p1025 N68-16213 BNWL-473 12 p1906 N68-22537 m reds, drop tests of loys, and signs spec-Neutron cross se tor fuel burnup stud [AAEC/E-184] ns for nuclear reac-12 p1906 N68-22540 nation of active zones for neutrons and related Distribution of fuel conc prescribed flux of there 07 p1007 N68-16329 um rods 07 p1006 N68-16332 UJV-1900) ometries 12 p1907 N68-22584 concentration in active zone wit and related one dimensions is and costs with various and converters, and fast Distribution of fuel 07 o1027 NAS-16366 12 p1907 N68-22589

SUBJECT INDEX Nuclear fuel require sts and costs of reactors in Germany /supp [KFK-466] 12 p1907 N68-22608 Fluidized bed process dioxide reactor fuel [K-L-6142] ng of unirradiated urani 12 p1909 N68-22747 Fuel and cladding neutron irradiation for fast reeder reactor, and radiation damage to clad materi-12 p1910 N68-22802 [LA-3768] zirconium oxide fuel development progra NUMEC-3505-301 14 p2291 N68-24755 Radiochemical and reactor technological articles on solvent extraction, chromatographic separation, and muclear fuel processing [ORNL-4075] 14 p2219 N68-25581 Neutron velocity selector measurement of neutron scattering in graphite, heavy water, and beryllium oxide 15 p2518 N68-26356 dynamic properties and fuels Literature survey of thermodirradiation behavior of carbide fit [LA-3799] 15 p2501 N68-26431 Criticality and central reactivity calculations in reac-tors with uranium and plutonium cores [LA-DC-9216] 15 p2501 N68-26432 nitrides as nuclear fuels for 15 p2502 N68-26436 Plutonium fuel r [EURAEC-1937] ar reactors 15 p2502 N68-26439 Oxide nuclear fuel irra n and testing using plutonium recycle test reactor [BNWL-SA-1624] 15 p2502 N68-26460 Analysis and testing of pluts um as nuclear reactor fuel [BNWL-475] 15 p2502 N68-26461 Uranium oxide thermal condu-nd gap conductance from in-pile ctivity, density effects, e measurements 15 p2503 N68-26487 Irradiation tests of fuel ch conditions for Southwest Reactor/SEFOR/ [GEAP-5309] cladding design and operating at Experimental Fast Oxide 15 p2504 N68-26750 Computer programs di arameters for nuclear rea rmining critical control ors and fuel handling and WAPD-T-21221 15 p2505 N68-26834 Radioactivity decre ase in nuclear fuel due to Xe 135 and See 149 [LFEN-NL34/ALPHA/] 15 p2505 N68-26835 Mixed uraniu carbonitride fuels for 16 p2703 N68-27225 Computer program for effects of irradiation on operating lifetimes of pyrolytic carbon coated fuel [ORNL-TM-2127] 16 p2705 N68-28030 Concept of molte (ORNL-TR-1855) reactors 16 p2705 N68-28036 lds for determination of (IN-1 78) 16 p2708 N68-28161 Use of slow transient experiments to evaluate fuel emperature coefficients - numerical calculations of sel temperature coefficients of ultrahigh temperature reactor experim [LA-DC-9425] 16 p2710 N68-28286 Absolute uranium 233 and uranium 235 thermal fis-on yields for stable long lived fission products for use burnup determination of nuclear fuels in burnup determine (EN-1157, REV.) 16 p2710 N68-28295 (IN-1131) 16 p2710 N68-28299 nnic cooled reactors 17 p2913 N68-28369 Uranium dio [AECL-2758] Reactor safety, re-mien reaction rate adings of Dounres d cores, in nuclear fuel [TRG-1571/D/] 17 p2913 N68-28411 Cavity reactor crit core of uranium he ments using sheet fue al experiments with full gaseous alluoride, and mockup experiments using sheet fur [NASA-CR-72415] 17 p2914 N68-28612 Molten Salt Reactor Eding and processing plant [ORNL-TM-907, REV.] ent /MSRE/ fuel han-17 p2840 N68-28876 Preparation and preirradiat seted solgel uranium dioxide ion of pyrolytic carbon particles for X-basket-2

17 p2915 N68-28940

Plu

(ORNL-TM-2097)

WCAP-6066

LC0-994

SUBJECT INDEX Heat transfer inside nuclear fuel of compacted urani-um oxide and uranium oxide-plutonium oxide powders [EURAEC-1998] 17 p2986 N68-28971 Core loading procedures and time-of-flight experi-ents for spectral measures from fast nuclear reactors IA-8543] 17 p2916 N68-28977 GA-8543 Plutonium and uranium enriched alloy driver fuels for Fast Flux Test Facility /FFTF/ reactor [BNWL-514] 17 p2916 N68-29022 17 p2916 N68-29022
Fuel cycle costs for varying designs of gas cooled fast reeder reactors
(0.4, 0.012) [GA-8032] 17 p2917 N68-29161 ociated with high tem-m used as nuclear fuel 17 p2901 N68-29172 Microstructure ch perature deformation (NLCO-988) Development, autoradiographic quality control, gravimetric and impurity analysis given for uranium and plutonium oxide fast reactor fuel (NUMEC-3524-47) 17 p2917 N68-29352 Progress in thermodynamics, chemical analysis, nuclear fuel fission, cross sections, and burnup, electrolytic cells, reactor safety, and studies on uranium and plutonius (ANL-7375) 17 p2845 N68-29355 Effects of organic carbohydrate additives on porosity ad density of irradiated U and Pu powder fuel for Exerimental Breader Reactor 2 NUMEC-3524-391 17 p2917 N68-29365 Electrochemistry, radiocl try, physical che 17 p2846 N68-29437 [CEA-N-616] Progress reports on mathem cal analysis, computer processes, power reactors and and radiation dosages (CONAT, 4734) natical research, statisti-ogramming, stochastic nuclear fuels, genetics, [ORNL-4236] 17 p2907 N68-29530 Research projects on power reactor and fast breeder actor fuel processing, thorium fuel cycle, chemical agineering, molten salt reactors, and sol-gel process development [ORNL-4204] 18 p3191 N68-30167 Digital computer program for flux and poison atom burnup in n [EUR-3930.E] for calculating neutron n nuclear fuels 18 p3115 N68-30184 measurements in light Reactor physics parameter m water lattices of uranium fuel rod [CNAEM-47] [JAERI-1154] reactor materials an [BNWL-SA-1750] Vaporizing, pulverizing, ar Pu nuclear fuels to reprocess (EURAEC-2011) them 18 p3119 N68-30723 [NASA-TN-D-4709]

17

12

13

18 p3117 N68-30575 Plutonium fuel use in pressure tube type heavy water 18 p3118 N68-30590 Fast Flux Test Facility for liquid metal fast breeder sactor materials and fuels 18 p3119 N68-30722 nd fluorating irradiated U-

Neutronic calculations of fuel and poison drum con-trol of refractory metal, fast spectrum space power 18 p3120 N68-30750

Distribution of metal nitrates in extraction system u/NO3/4-UO2/NO3/2-HNO3/TEP dodecane KFK-680] 19 p3223 N68-31253 Critical assembly of u moderated multirod reactor [BAW-3647-7, PT. 2] m dioxide water

19 p3312 N68-31656 Bibliography of burn-up of nuc [AAEC/TM-449] clear fuels 19 p3312 N68-31976 is of plutonium for nuclear plutonium 238 and 65 per-

Optimium power for blends of fuels reached at 35 percent plut cent plutonium 241 [NUMEC-3731-4.5-7, PT. 2] 19 p3314 N68-32110

Caine library 51 developed for use on small, high leakage cores P IKAPL-M-6738/CLP-1/3 19 p3314 N68-32155

Thermoelastic bowing of scient fuel rods due to tra of axially unrestrained 20 p3530 N68-32703

Thermal irradiation of scient fuels liquid plutonium-alloy nuclear fuel (LA-3832) 20 p3530 N68-32953

exprication and mechanical p chromium alloy tubing for nucle (GEAP-5589) al properties of airconium-clear fuel cladding tubing 20 p3501 N68-32956 Irradiation officobalt base alloys (BNL-12438) chanical properties of

cassing of unirrediated 20 p3431 N68-33254 Input properties for computer description of reactor fuel properties
[KAPL-3300] 20 p3534 N48-23435 Critical experiments wit dioxide polystyrens at hydr h homogeneous plutonium agen plutonium ratio of five IBNWL-SA-16301 21 p3724 N68-34335

from uranium dioxide irradiosed ratures from 1500 to 2100 deg C 21 p3725 N68-34395 Fission gas release from u isothermally at temperatures [GEAP-5100-10] sion-product-nuclear feel

mixtures in gas phas (ORNL-TM-2105) 21 p3653 N68-34614

Computer program for predicting lattice parameters for nuclear reactor cores [DUN-SA-70] 21 p3728 N68-34782 Transient phenomena occurring in ventilation stem of EUREX nuclear fuel reprocessing plant after

RT/PROT/68/81 22 p3827 N68-35606 Sintering uranium trioxide to dense uranium dioxide

DP-10851 22 p3884 N68-35679 very of plutonium and

Solvent extraction and rec nuclear faels for Rapsodie nuc (ANL-TRANS-619) ar reactor 22 p3828 N68-35713 Actinide elements study with preparation by dissolution, and fission product solution vitrification by indu-

ICEA-N-8361 22 p3829 N68-35739 High performance stacked C vent extraction of nuclear fuels [ORNL-4267] d Clone contactor for sol-22 p3854 N68-35961

Sequential chemical separation procedure for post radiation examination of thorium oxide and uranium oxide fuels [BAW-3809-2] 23 p4100 N68-36162 Growth of uras ngle crystals in nitrog

(UCID-15238, PT. 1) 23 p4101 N68-36600 actor fuels, reactor co nes, fuel loading, and Ph nium Recycle Test Reactor control elements, core I Phoenix marine reactors, actor, and Materials Testing

(BNWL-6351 23 p4102 N68-36756 Radiation hazards and performance predictions for mixed uranium plutonium oxide irradiated faels [BNWL-450] 24 p4292 N68-37478

ation runs on aluminum, magnesi-ad nonirradiated uranium metal 24 p4293 N68-37568 ss steel, and nonirradi

Pyrolytic carbon coated fuel particle oxidation using helium-low water vapor mixtures [ORNL-TM-2199] 24 p4213 N68-37633

Supercritical water cooled inpile fuel testing, col-lapsed clad fuel elements in reactor environment, fuel design, and loop performance operating data analysis [WCAP-3374-8] 24 p4295 N68-57821

nts in scale model of 24 p4295 N68-37878

Effect of turbulent mixing on average fuel tempera-tures in gas-core nuclear rocket engine [NASA-TN-D-4882] 24 p4297 N68-37927 Oxidation of bonded and coated particle fuel com-

24 p4297 N68-37972 ectivity of nonmoderating samples in RANA reac-tor oscillation measurements of effective absorption (RT/F1/68/23) 24 p4297 N68-37976

NUCLEAR FUSION
NT CONTROLLED FUSION

Hydrogen isotope fusion read [FOA-4-4266-21] 01 p0106 N68-10421 same generation, and 04 p0554 N68-13470 Design concepts of Astron device for controlled fu-

ion research 05 p0641 N68-14071 Stellar composition [APOSR-68-6124] 09 p1388 N68-18613

and sources of future including ruclear (LA-DC-9519) 16 p2732 N68-28181

Feasibility of pow 18 p3143 N68-30162 over deformed Ma IPDA-4-4360-251 21 p3743 N62-34482 Mathematical models of stellar evolution through nuclear fusion detailing neutron production and cap-36507505-90707 22 p3958 N68-34937

NUCLEAR HEAT

Peach Bottom nuclear power reactor core reactivity and temperature measurements during rise in power GAMD-7909] 23 p4104 N68-37187

NT ELECTRON CAPTURE NT SPIN-ORBIT INTERACTIONS

Effect of crossing angle on interaction rate of sollid-ing electron beams in Princeton-Stanford storage ring [AD-659194] 01 p01/1 N68-10660

Excitation functions and angular distributions of sultimucleon transfer reactions in complex nuclei in-(INR-791/IA/FL) 01 p0113 N68-16793

Polarization of resonances in simple periphe SU/6/W model [NP-16936] 01 p0114 N68-100 01 p0114 N68-10835 uclei interactions for ener-Nucleon-photoemulais gles from 6 to 1000 GeV [ORNL-TR-1716]

01 p0132 768-10852 benomens and related hods 02 p0244 N66-11387 High energy collapsocemes by approxim AROD-3246-18-P)

Direct excitation of fin nion of nuclei at low energies 02 #0248 N68-11600 cross sections of deuteross with alu-02 p0248 N68-11614

Digital computers used to calculate multiparticle teractions in high and superhigh energy region [NASA-CR-91039] 03 p0367 N68-120 Axiomatic theory of ac emulated with respect to resormalized interactions weakened locality condi-

[JINR-P2-30R5] 03 p0394 N68-12620 ergy of in

teractions with metal of (NASA-TT-F-11420) 05 p0730 N68-14876 e and stom interac

NASA-TT-F-11470] 06 p0884 N68-15512 runs in and between sal capture for studying IBNL-1 903] 07 p1044 N68-16520

JINR-12-34041 10 p1566 N68-19756

Review and as nuclear reactions [HMI-B-51] 11 p1754 N68-21141 Approximation means officions and application is for theory of rearrangements to charge exchange scatter

12 p1921 N68-22070

Deuterium and belium 3 peractions of cosmic rays with NASA-TM-X-63170 produced by section in-12 p1963 1008-22425

nak interactions 14 p2319 N68-25463 Pion exchange in moleur w

15 p2515 N68-25991 tered from car (ANU-P/406) 16 p2722 1468-27539

S matrix theory, pion-pi other topics on dynamics of [LPTHE-TH-222] seing head 16 p2725 1468-27944 -

Symmetry of inte through confication (LYCEN-6784) 16 p2728 N68-28022 suchi, and use of

17 p2953 1468-28437 ten of Green has NR-P2-3727] 17 p2935 N60-29163

17 p2006 1668-26211 JINR-P2-37741 19 p3321 N68-30010

SUE

on

700

.

nling and isobers using ntum mechanics 17 p2929 N68-28708 e for studying nuclear hyperfine in 195, tungsten 182, and tung-19 p3326 N68-31152 field theory us nucleon interactions 18 p3137 N68-30700 high energy interaction of deuteron with m [ORNL-TR-1907] 19 p3331 N68-31571 of genetically coupled eigenvalues of residual d of spherical nuclei 19 p3336 N68-31966 isobar and isomer 23 p4014 N68-37010 steractions resulting in High energy pe n of particle interactio Zaro/4/ sv [BNL-12673] 24 p4317 N68-38019 NT PROTON MAGNETIC RESONANCE NT PROTON RESONANCE [RUP-68-4] 19 p3337 N66-32130 Carbon 14/proton, alpha/boron 11 reaction at her arding energies from 2 to 3.6 MeV, and tritium titar or turnet degradation ctrolyte preparation or magnetic reson 21 p3733 N68-33693 nonaqueous electrol [NASA-CR-72324] 21 p3745 N68-34658 01 p0018 N68-10095 [UR-3591-9] Carborane forma alkynes and boranes in measured by gas chro-tass spectroscopic, ind two nucleon scat-IUR-875-2341 22 p3933 N68-35761 lar meson below K-pion 01 p0020 N68-10353 earch for pr (UCRL-18206) 23 p4114 N68-36210 NEL-1471) 02 p0210 N68-11150 clear active particles in nuclear magnetic 23 p4114 N68-36266 resonance studies (FTD-MT-66-69) 02 p0211 N68-11268 for reaction belium-im 55 to 165 MeV 23 p4120 N68-36750 tive recon agnetic resonance ul-(COO-1195-131) (NBS-TN-344) 03 p0343 N68-12406 determine transition proba as of single particle operator resonance pulses for ms in solids O4 p0558 N68-13467 23 p4125 N68-36969 reactions on N 15 dealing with pyrolysis lysis, shielding effects, and photopolymerizaand O 15 madei (BNL-TR-218) 24 p4315 N68-37886 Rod drop technic activities and evalu ssuring large negative 05 p0620 N68-14145 pectroscopy of biologi-free inductance decay [RT/FU68/24] 24 p4296 N68-37923 Experimental aception in chemi (JUCR-P4-3860) uency pulses 05 p0626 N68-14608 I papers on meson ab-24 p4317 N68-38004 Mass and spectroscopic s isospin quartets in light such [UCRL-17783] 05 p0716 N68-14665 iring and sta-05 p0708 N68-14220 05 p0702 N68-14707 ly fluids by use of super-sonant circuits as sensing [JINR-E2-3551] 09 pl389 N68-18707 shell model with definite ic spin with mixed single 05 p0615 N68-14788 AECL-3007) on proton nuclear maga II de 09 p1390 N68-18854 orane 05 p0628 N68-14918 on elastic scattering 09 p1395 N68-19182 obaric analog states 09 p1395 N68-19211 (TR-65) 06 p0792 N68-15815 th multiplicity inelastic cy in self-locking NMR Control of aut 10 p1564 N68-19718 (JINE-P9-3527) 96 p0848 N68-16070 on of scattering ents interactions clear magn 10 p1565 N68-19729 NL-11746) 07 p1043 N68-16499 cerium 140, and well n 141 that are isobartudy of hydrated uzanim dioxide NUS-R-5091 erium 141 10 p1566 N68-19730 07 p0959 N68-16900 for detection of nuclear fine interactions in short Automatic co magnetic resons lived excited nur (UCRL-17715) 08 p1179 N68-17834 10 p1570 N68-20409 Theory of nucles [FTD-MT-65-429] 08 p1215 N68-17986 ton effect plo and infrared spectra of of chromium, man-nitrates, and magnesi-14 p2308 N68-24891 pin in reaction of nega more, iron, nickel m and nickel perch NRL-6597, PT. 1) 16 p2721 N68-27237 08 p1145 N68-18171 y solenoid magnet Field analysis outing nuclear mag (NYO-2150-36) (DESY-44/2) 16 p2731 N68-28176 9 p1407 N68-18567

romatography, and nuclear mag-ctra of ethylenediaminetetrace 10 p1490 N68-20171 er progra (NASA-CR-938221 10 p1490 N68-20194 e studies of hydrogen on tetrachloride ternary 10 p1492 N68-20259 tron para 10 p1581 N68-20501 and nuclear magnetic studies 10 p1582 N68-20504 10 p1493 N68-20513 e in normal and super-11 pi657 N68-21693 12 p1952 N68-21945 ity of dilute solid mix-12 p1955 N68-22250 ce techniques for deter-on Neel temperature of 12 p1955 N68-22278 in ferrimagnetic materi-12 p1835 N68-22358 of geomagnetic field and gnetic resonance transdu-CEA-R-3121) 12 p1869 N68-22699 19 nuclear magnetic (AFML-TR-67-204) 13 p2010 N68-23258 Spin-lattice rela-re and temperate of nitrogen 14, and pres-13 p2013 N68-23520 n in nuclear magnetic 13 p2015 N68-23673 ce and kinetics of 13 p2016 N68-23777 lear magnetic resor is of borane and it 13 p2019 N68-23915 TR-181 nce effect of in-13 p2121 N68-24061 nce generator in 13 p2121 N68-24062 use shift measurement 13 p2064 N68-24080 theory and spectrome-[TIS-67SD227A] 14 p2329 N68-24503 th molecular properti igh scattering, nuclei magnetic alloys, ar 14 p2213 N68-24699 14 p2213 N68-24702 ferroelectric rochell [NASA-CR-94755] 14 p2331 N68-24995 vinyl aromatic polyn [NASA-CR-94786] 14 p2277 N68-25010 ies effects on su

15 p2405 N68-25908

d cross sect

17 p2924 N64-28434

17 p2925 N68-28487

magnetic resonance sility of delta and 10

10 p1463 N68-19957

10 p1486 N68-20021

es of orga

1

4

SUBJECT INDEX Electron spin and nuclear magnetic resonance study n paramagnetic peroxyborates 15 p2405 N68-25942 Liquid saturation in porous materials using suclear agnetic resonance techniques and three phase rela-ve permeability 15 p2416 N68-26424 Differential measures using nucleur magnetic re [FTD-MT-24-100-67] ts of geomagnetic field 15 p2462 N68-26597 Determination and ide entification of fundamental stric titration proton nuclear nce spectroscopy 15 p2419 N68-26742 el for baryons 16 p2718 N68-27042 [AD-669115] Tin particle size effects on nuclear magnetic esonance and Knight shift in superconductors 16 p2742 N68-27217 untum mechanical analysis of high resolution or magnetic resonance spectra and related com-program 16 m2608 N68-27240 and susceptibility mea-16 p2677 N68-27272 gnetic resonance and e-cobalt alloys 16 p2742 N68-27277 magnetic resonance study dibenzoylethylenes and 16 p2611 N68-27842 ereochemical classification of molecular groups in nar spectroscopy, ssymmetric syntheses, and opti-urity analyses Stereochemical cla 16 p2611 N68-27882 total and fission for plutonium 239 cross sections and (BNL-TR-197) 16 p2704 N68-27968 Wiener Hopf eq transfer of resonance radiation in half space INASA-TT-F-118401 16 p2728 N68-28054 Photoproduction from hydrogen [INSJ-107] r magnetic resonance 16 p2730 N68-28098 netic resonance spectra 17 p2839 N68-28619 System optimization of nuclear magnetic resonance Electron spin resonance, absorption spectra, and fine ad hyperfine structure of Mn and Cu ions 18 p3149 N68-29612 Nuclear magnetic resonance studies of platinum in atinum-molybdenum and platinum-iridium alloys 18 p3020 N68-29864 Vibration effect on chemical shirts, and chemical s

nuclear magnet and internal m

20 p3415 N68-32267

19C-CR-67-2845)

see converter induction to placed inside 20 p3476 N68-32299

e and spin-relaxation

20 p3537 N68-32743

[AFOSR-68-1154]

coil with investigated s (FTD-MT-24-313-67)

Nuclear magnetic resonance measurements in sodi-m chloride type rare earth group 5A intermetallic 20 p3567 N64-32832 e and ionic collision esonance spectroscopy 20 p3434 N68-33561 integrals for hom tivation technic ous mixtures m 21 p3723 N62-33949 fission cross sections ry of fission 22 p3932 N68-35644 and applicability to cha [JAERI-1162] Nuclear magnetic and 19 fluorine ch study of 31 phosphate t anisotropies and ab-coupling constant 23 p4006 N68-36203 [TR-18] e in nitrogen doped sil-23 p4152 N68-36628 etic resonance of inorganic fluorides [LA-3871-MS] 23 p4010 N68-36751 Magnetic reso [UCRL-17854] 23 p4122 N68-36854 Single crystals of lit on-3 ions investigate ride doped with positive tron spin resonance and 23 p4154 N68-36855 Vibrational and spectra of four particle 23 p4134 N68-37230 nsfer complexes 24 p4211 N68-37532 quid fluoroform 24 p4214 N68-37687 effects on angular correlations and d 24 p4312 N68-37705 24 p4323 N68-37760 cture of materials, solid rticle interaction 24 p4331 N68-37791 Reviews of paper state physics, and (COO-1198-534) 24 p4331 N68-37863 nar magnetic spectra of hydrated crystalline unds determined by method of moments, Pake and its extension, and delta H method 24 p4335 N68-38368 CUCLEAR METEOROLOGY 18 p3021 N68-29933 standom molecular motion data from infrared and Raman spectroopy, inelastic neutron scattering and nuclear magnetic resonance experiments [NUS-R-521] nucleur meteorology 11 p1735 N68-21526 ta activity data for Finland reations at 11 stations 21 p3716 N68-33771 Atmospheric aerosol uring 1967 based on o rogen bonding using infrared spectroscopy and r magnetic resonance of scetic acid in solvents, ctron paramagnetic resonance of Mn complexes NUCLEAR PARTICLES

NT ANTINEUTRINOS

NT ANTINUCLEONS

NT ANTIPARTICLES

NT ANTIPROTONS

NT BETA PARTICLES 18 p3022 N68-30058 gular distribution of radiation emitted by radicac-suclei used to detect nuclear magnetic resonance NT HYPERONS
NT NUCLEONS
NT PHOTOELECTRONS
NT PIONS
NT POSITRONS 18 p3137 N68-30721 sonance studies of relaxa-s in liquid and solid kryp-ils, and semiconduction Thermal pho shielded reactor [NSJ-TR-93] ex distribution in water 18 p3031 N68-30742 07 p1026 N68-16226 senance spectrometer coefficient of methane 20 p3414 N68-32243 Binding energy of las (IC-67-49) icte in meclear matter 18 p3126 N68-29632 (FTD-MT-66-74) 22 p3930 N68-35528

Structures and motions of methacrylate monomers and polymers using nuclear magnetic resusance methods

20 p3423 N68-32807

lating potential health article inhalation 22 p3813 N68-35670

24 p4319 N68-38184

ter of a 24 p4319 N68-38187 problem of strong 24 p4320 N68-38188 NUCLEAR PHYSICS NT REACTOR PHYSICS for charged particle a [NASA-CR-89981] 01 p0110 N68-10593 oretical and exp [RLO-1062-675] 01 p0113 Net-10760 tem for plotting digital 02 p0186 N68-11633 nuclear and theoretical safety factors 03 p0386 N68-11997 High energy physic tion, particle interac enalysis, and planeter [COO-1537-1] essering and compute box magnetic masses 03 p0393 N68-1255 NYO-3399-1251 Project summ hysics, comput TID-4005, PT. 31 OR p0549 N68-13483 Theoretical and physics and suclear [NYO-2171-233] 05 p0706 N68-14128 studies, and rac Oak Ridge labo [ORNL-4164] 05 p0619 N68-14141 (COO-1265-49) 05 m0712 N68-14431 h energy particles in ap 5 p0715 N68-14578 Magnetic hyperfine fi school g-factor, and spin (UCRL-17716) 05 p0729 N68-14603 (ITF-67-11) 05 p0717 N68-14717 ework of symmetry Higher orbi (ITF-67-10) 05 p0717 N68-14718 omic, suclear, and 06 p0883 N68-15184 clear physics ence, prope (NASA-CR-92558) 06 =0930 N68-15564 Proceedings of 1967 CERN School of Physics dealing with beam optics, kaon docay, and use of polarises targets in particle physics (CERN-67-24, V. 4) 06 p0885 N68-1580) 06 p0885 N68-15801 Loctures on quantum and on topics in buryon CERN School of Physic (CERN-47-24, V. 3) 06 p0885 N68-15851 (TH/230) on relations for such 06 p0007 NGS-160 LAL-1176 07 p1040 NSS-16249 09 p1383 N66-19043 10 a1531 N68-20501 1967 11 p1760 1468-20875 INURA 48-21

11 p1754 N68-21141

SL

ts as

ITU

[NA

ZZZZZZZZZZ

Ra [NSJ

An

NA.

Bac

Dat

LYC

Nuc bined

(NAS/

Engi of mate (MPS/

Dens ide and

CEA-

SGAE

transition (COO-1

Infrar

ORO-2

Techn attenuat (DASA-

Nuclei (COO-16

Nucles IJEN-18

PELY TEL

Nuclea

Application to

Technic tions, sem [SR-1]

Detection orbiter for (NASA-T)

Weather for nuclear (ECOM-2)

Dopp

Prob

E

luraeli research in biological, chemical, mathemati-cal, and physical sciences 14 p2297 N68-24697 Nuclear and theoretical physics dealing with elec-tromagnetic properties of nuclei, resonant scattering, fusion process, and hadrom 14 p2305 N68-24703 Research in nuclear, neutron, solid state, and [AECL-3108] 14 p2306 N68-24785

Photoionization, electron scattering, stellar evolu-on, conservation laws, and related topics in nuclear dysics lecture summaries physics - lect (ISS-67/30) 14 p2301 N68-25633 Methods for calculation of Doppler work functions

15 p2523 N68-26558 Algebra of meson currents in model of quasi-inde-

ITF-67-31] 15 p2525 N68-26818 Mathematical aspects of theoretical and nuclear

INP-555/PH) 15 p2525 N68-26847 Superconductivity for high energy physics and con-trolled thermosuclear research programs [WASH-1081] 16 p2741 N68-27198

Nuclear and theoretical physics, computer programs and data handling, and cyclotrons - bibliographies [UCRL-17876] 16 p2728 N68-28039

Training programs in health physics, nuclear en-gineering and radiation applications, applied to agricul-ture, radiobiology, food processing, medicine and chamiters. [PRNC-[02] 16 p2601 N68-28232

Accelerator and nuclear physics, radiochemistry, nd radioisotope production in Japanese cyclotron [NP-17423] 17 p2930 N68-28861

Alpha particle scattering and beta decay, and com-puter programs for body kinematics and angular cor-elation analysis in nuclear physics research COCL420, 1391 ics research 17 p2934 N68-29052 relation analysis in (COO-1420-139)

Experimental information from dilute plutonium seled critical assemblies used to improve fast reactor usign data and calculation methods

design data and (GEAP-5271) 18 p3118 N68-30685 Satz sum rules applied to high multiplicity processes [INR-P-881/VI/PH] 18 p3139 N68-30808

Angular correlation between neutral pi-mesona produced in negative-pion senson interactions [INR-P-882/VI/PH] 18 p3139 N68-30809

Differential cross sections for reactions negative kaon plus proton yields sigma hyperon plus pion 20 p3542 N68-32531

High speed computers for processing nuclear parti-e tracks and other physical research data 22 p3844 N68-35623

Research project summaries covering suclear physics, radiochemistry, isotopic labeling, measuring matruments, fallout, and radiation medicine [IA-1128] 23 p4101 N68-36659

Nuclear physics research facility - neutron physics, electromagnetic transitions, charged particle reactions, buta decay, and gamma ray spectroscopy with radiosc-

23 p4121 N68-36838

Progress in nuclear and radiochemistry, nuclear physics and isotope separation and recovery [MLM-1494] 24 p4211 N68-37526

Elementary particle physics, nuclear physics, sold state physics, and electromagnetic interactions research [ESS-67/44]

24 p4314 N68-37815 Central data recording and processing system for

nuclear physics data [FTD-MT-24-350-67] 24 p4232 N68-38060

NUCLEAR POWER PLANTS

NT ENRICO FERMI ATOMIC POWER PLANT

Comparison of tout-bearing conical nonload-bearing tanel heat radiators for potantium Rankine nuclear NASA-CR-723071 01 p0088 N68-10050 **Garigliano Nuclear Power Plant operations summary**

01 p0091 N68-10452 (EUR-3489.11 Nuclear research and power plant developments in various countries, and operating experience with fast reactors and breuder reactors [JPRS-43265] 01 p0094 N68-10725

Ultranonic instrumentation for incipient boiling detection in liquid metals or fused salts [NYO-362Z-10] 01 p0066 N68-10758

Engineering developments and construction of nuclear power plant in Netherlands [EUR-3617.N] 01 p0097 N68-10951

Mathematical models for simulating and regulating natural boiling water reactor flow in nuclear power sta 02 p0239 N68-11876

Design and operational test data on SNAP, and nuclear reactor, conversion equipment, and spacecraft power systems technology 03 p0371 N68-12191

ts for large, Rankine Energy conversion compone cle spacecraft power systems 03 p0371 N68-12192

Optimal control system math for nuclear power installation [ANL-TRANS-470] matically constructed 03 p0378 N68-12660

Compatibility of materials for single, and for multiple loop Rankine cycle power systems

[ORNL-TM-1964] 04 p0541 N68-13744

Nuclear source limitations for direct conversion 08 p1206 N68-17803

Environmental radiation and concentration levels of atomic gaseous diffusion plant [GAT-553] 14 p2249 N68-25106

Thermal hydraulic and structural performance of heat exchanger for sodium cooled reactor plant [UNC-5200] 14 p2295 N68-25275

Design, materials, fabrication, and calibration of magnetic flowmeters for nuclear power plant [APDA-304] Drift correction of dependent variables in dynamic measurements on nuclear power plants
[AEEW-R-583] | 5 p2525 N68-26792

Analysis of trend in free world atomic power genera-tion, uranium production, resources, and requirements until 1985 [ORNL-TR-1825] 17 p2989 N68-28954

17 p2989 N68-28954 Analytical data for electric power system com-posents in advanced high temperature potassium Ran-tine nuclear space power systems [CONF-680802-1] 21 p3726 N68-34481

Shock tube blowdown tests to determine behavior of decompression of nuclear reactor coolant [IITRI-578-P-21-35] 23 p4104 N68-37118

Savannah River Laboratory meteorological program, strumentation, and operation

24 p4284 N68-38379 Relative dose factors from long period point source missions of atmospheric pollutants 24 p4284 N68-38380

NUCLEAR POWER REACTORS

KIWI B-4 REACTOR KIWI REACTORS PLUTONIUM RECYCLE TEST REACTOR

NT SNAP 2 NT SNAP 8 NT SNAP 8 NT SNAP 10A NT SPACE POWER UNIT REACTORS

Reduction of heat exchanger size by use of aluminum as heat transfer agent in power reactors [FTD-MT-67-49] 01 p0148 N68-10145 01 p0148 N68-10145 Probability distributions used to determine physics parameters in fast thermal reactor noise [KFK-542] 02 p0238 N68-11542

High power, high burnup test assemblies for power actor design

(CVNA-274) 03 p0374 N68-12465 Ultrasonic inspection of irradiated power reactor pressure vessels
[CVNA-288] 03 p0375 N68-12466

Nuclear power systems applied to purification of sea [TRG-1536/R/] 04 p0466 N68-13062

or small, cylindrical, lithium Criticality calcucooled reactors for space power systems [NASA-TN-D-4371] 06 p0676 N68-15792 Evaluation of nuclear reactor, and radioisotope

ns for large booster rockets 07 p1034 N68-17191 [Al-MEMO-7585] Reactor shielding, reactor fuel temperatures, and adioisotope sources for dynamic energy conversion

08 p1205 N68-17794 Pressure regulated moderator gas tube for nuclear

NASA-TT-F-11373 08 p1207 N68-18174 Design criteria for high temperature, high pressure shing required by power-producing nuclear reactors VYC-3660-1] 11 p1705 N68-21074

[NYC-3660-1] netry factors for Savannah 12 p1912 N68-22996

Repetitively pulsed, small plutonium booster reactor [IN-] 149]

Operations of BR-2 reactor and its associated instal-[EUR-3667] 13 p2106 N68-23263

Design requirements for reactor power system of manned earth orbital space station [NASA-CR-94549] 13 p2106 N68-23470

Fuel cost program for use of plutonium in thermal [EUR-3890.1] 13 p2107 N68-23663

Thermal buckling and neutron reaction rates in study of lattice parameters after fuel burnup in heavy water tors . DP-11221 16 p2708 N68-28167

Axial power tailoring to obtain constant fuel- centerlear reactor 16 p2711 N68-28304 [NASA-TN-D-4658]

Kernel-diffusion analysis for nuclear power reactor radiation shields, and related nuclear fission, absorp-tivity, and seutron ermoval data [GEMP-599] 17 p2939 N68-29230

Linear analytical dynamic model developed for learn cooled fast power reactors AE-316] 18 p3115 N68-30215

[AE-316] Fuel cladding temperature measurements of EK-10 type reactor fuel rods in EWA-2 core [REPT.-879/XI/R] 18 p3121 N68-30817

Absorption cross section measurements in samples ontaining burnable poisons used for reactivity control

in power reactor (RT/FI/68/8) 19 p3311 N68-31505 Design and construction of high powered fast reactor

[ANL-TRANS-588] 19 p3311 N68-31636 Piqua Power Reactor recovery core lower grid plate [Al-AEC-MEMO-12574] 20 p3535 N68-33493

Temperature measurements applicable to liquid sodium cooled nuclear power reactors [LMEC-MEMO-68-10] 21 p3724 N68-34152

Mathematical model of liquid metal fuel reactor to evestigate temperature distribution on neutron [NASA-TN-D-4840] 23 p4099 N68-36055

Peach Bottom nuclear power reactor core reactivity and temperature measurements during rise in power [GAMD-7909] 23 p4104 N68-37187

Potential metal-water reactions in power reactors with light-water cooling systems [ORNL-NSIC-23] 24 p4295 N68-37884

24 p4295 N68-37884 **NUCLEAR POWERED SHIPS**

Nuclear reactors for marine propulsion [TRG-1500/R/] 02 p0237 N68-11143

Reduction of carbon dioxide in nuclear submarine atmospheres by increasing effectiveness of monoethanolamine stripping operation in removal NRL-6614] 06 p0788 N68-15498

NUCLEAR PROPULSION

Lecture series on nuclear, thermal, and electric rocket propulsion systems and space mission applica-[AGARDOGRAPH-101] 03 p0370 N68-12184

Nuclear electric and nuclear thermal propulsion stems for manned space flights and interplanetary 03 p0370 N68-12185

rast and moderated nuclear reactors, and feasibility of low-power lightweight reactors for nuclear rocket engine applications 03 p0371 N68-12188

Characteristics, applications and technology of diothermal propulsion and isotopic propulsion en-ELDO/SP/64/19]

exhaust velocity, and design of par exhaust system 08 p1202 N68-17289 Performance tests, exi-scale model for nuclear ex [NASA-CR-91275]

All nuclear space acceleration system and basic spacecraft consisting of biconic earth entry module, mission module, vehicle control, experiment laboratories, and excursion module [NASA-CR-66558] Spacecraft 09 p1437 N68-19238

Spacecraft, space acceleration system, and earth used support for integrated manned, interplanetary accorat concepts [NASA-CR-66562] 09 p1438 N68-19248

mary of nuclear n tors, fuels and operating principles of nuclear rockets NASA-TM-X-524061 10 p1555 N68-19830 ems associated with high tempera-sance reactors for space propulsion 10 p1540 N68-20428

Performance prediction of electric and nuclear propulsion for European space vehicle launchers [ELDO-TM-105] 12 p1960 N68-21907 Performance analysis of systems for spacecraft prope [TUB-IR-1/1967]

15 p2500 N68-25892 Comparative analysis of gas core nuclear reactors for pacecraft propulsion

15 p2500 N68-26005 Fully detailed model studies of port systems using reusable spac-sion, and refueling at destination

15 p2500 N68-26039 Model studies of interplane using reusable spacecraft, no refueling at destination - feature [TUB-IR-3/1967] tary transport systems clear propulsion, and s and results 15 p2500 N68-26040

Engine requirement nuclear rocket engines [NASA-TM-X-52435] ters for gaseous fueled 16 p2703 N68-27231

NUCLEAR RADIATION
NT BETA PARTICLES
NT FAST NEUTRONS
NT GAMMA RAY BEAMS

NEUTRON BEAMS

NT PHOTONEUTRONS
NT POST-BLAST NUCLEAR RADIATION
NT SPALLATION
NT THERMAL NEUTRONS

Radiation effects on bone mat (NSJ-TR-78) 01 p0011 N68-10522 Annular lithium drifted germanium detector Annular lithium drifted germanium detector 02 p0213 N68-11787 02 p0213 N68-11787

dying nuclear reaction game [NASA-CR-90545] Back scattered beta radiation method for paper thickness measurement (REPT.-808/XV/J) 03 p0391 N68-12432

es for measurement and spectrometric interfering Data processing procedures for acrimination of nuclear spectre 03 p0391 N68-12482 [LYCEN-6716]

Nuclear radiation and cryogenic temperature com-bined effects on mechanical properties of titanium and aluminum alloys used in nuclear rocket construction [NASA-CR-91519] 04 pd541 N68-13825

Engineering handbook for nuclear radiation damage of materials - use of elastomers [MPS/INT-CO-66-27] 06 p0858 N68-15836

Density measurements performed on uranium dioxide and uranium carbide samples irradiated at low tem-

CEA-R-3289) 07 p1013 N68-17212 entials of synthetic and echnology 11 p1742 N68-21335 Problems, properties, a composite materials in nu [SGAE-CH-50/1968]

Doppler shift measurements on nuclear gamma ray transitions from isotopic fluorine, magnesium, and si-

12 p1926 N68-22368 (COO-1468-2) Infrared spectra of nuclear irradiated plastics and elastomers [ORO-2418-4] 12 p1895 N68-22689 neutron and gamma ray

Techniques for ca attenuation in shields [DASA-1892-3] 13 p2115 N68-23393

licon p-n junctions 13 p2040 N68-23856 [COO-1624-11]

ction /lectures/ 16 p2665 N68-28143 cts on electrical properties of Nuclear radiation (JEN-183-DF/I-56) Nuclear radiation effe (CERN-68-13) 16 p2615 N68-28193

nai S sub a transport n analysis 17 p2937 N68-29218 Application of two dimen ethod to NRX reactor radial

ic dielectrics, p-n junc-nd radiation studies 18 p3044 N68-29639 (SR-1)

nar radiation from orbiter for chemical comp (NASA-TM-X-63303) 19 p3367 N68-31887 d detection mechanism ing radat mapping 22 p3905 N64-35326

18

ansient response of re Seld effect transistors W-06413-6003-R000) n hardened insulated

24 n4236 N6B-37975

NUCLEAR RADIATION SPECTROSCOPY

Design and performance of high resolution high rate amplifier for nuclear spectrometry [UCRL-17560] 01 p0063 N68-10363

Neutron spectroscopy by foil activation in radiation (SC-DC-67-1572)

Nuclear optical mode (UCOL-535-561) otopic labeling 03 p0397 N68-12708 Spectrum stabi ance evaluation of semiconducting detector [CEA-R-3178]

03 p0385 N68-12728 Spectra and angular di /alpha,4/ two sucleon strig and oxygen 16 (UCRL-17732) ibutions for /He-3,p/ and ing reactions on carbon 12 05 p0707 N68-14207

tive effects in radiative Research activities on coll capture reactions and nuclear (COO-1672-5) 05 p0718 N68-14741

ification of signals in gain device 07 p0996 N68-16392 Formation and in nuclear spectroscopy [CEA-R-3252]

Operational amplifiers for nuc [NASA-TN-D-4349] lear spectroscopy 06 p1217 N68-18254 Computer programs direction correlation of a from aligned nuclei [ARL-67-0168] analysis of intensity

09 p1386 N68-18302 Critical point behavior in using nuclear gamma ray spe [NYO-3823-1] gnetically ordered solids

09 p1407 N68-18606 Correction of am spectrometers using digital c [NIC-TRANS-2481]

09 p1344 N68-19227 (CEA-R-3251) 17 p1879 N68-22986

ning solid state detectors

14 p2313 N68-25117 High resolution gaz um-lithium detectors [CEA-R-3405] na spectrometer using germani-19 p3276 N68-31225

High resolution gamma ray spectroscopic study of Ge 77 and Ba 133 decay to determine energy levels of As 77 and Cc 133 [COO-1112-165] 19 p3331 N68-31543

n of minerals - beta and Radioactive nonequilibriu gamma activities counting pr [JEN-167-SIG/I-5] 21 p3738 N68-34033

Dynamic response of actrometer with lithin USNRDL-TR-68-77] se of X ray fluorescence isotopic thium-drifted silicon detector 77] 24 p4260 N68-38482

(USNRDL-TR-88-77) 24 p4360

NUCLEAR REACTIONS
NT ALPHA DECAY
NT ANNIHILATION REACTIONS
NT CONTROLLED FUSION
NT ELECTRON CAPTURE
NT HIGH ENERGY INTERACTIONS
NT HIGH ENERGY INTERACTIONS
NT NEUTRON EMISSION
NT NEUTRON SCATTERING
NT PHOTOPRODUCTION
NT POSITRON ANNIHILATION
NT PROTON PROTON PRACTIONS
NT PROTON SCATTERING
NT RADOACTIVE DECAY
NT RESONANCE SCATTERING
NT SPALLATION
NT SPIN-ORBIT INTERACTIONS
NT THERMONUCLEAR REACTRONS
NAME OF STATEMENT OF THE PROTON SCATTERING
NT SPIN-ORBIT INTERACTIONS
NT THERMONUCLEAR REACTRONS
Rate of synthesis reaction is mesosmolocul

Rate of synthesis reaction in mesomolecule [JINR-P4-3384] 01 p0103 N68-16224 these and hydrogen 01 p0019 N68-10290 [YALE-1957-111]

Cross section for kaon plus deuteron yields neutral ntikaon plus two neutrons reaction and positive kaon roton elastic scattering COO-1195-87] 01 p0104 N68-10295

Hydrogen isotope fusion reactions by auton catalysis IFOA-4-4266-21 01 p0106 N68-10421 Photonucleur reactions in carbon at energies tween 300 MeV and 1000 MeV 01 p0109 N68-10500

d experimental studies on reactions 01 p0113 N68-10757 high energy society particle rea [NYO-2897-22]

(RLO-1062-675) 01 p0113 N68-10760 (WASH-1074) 01 p0115 N68-10933

knock out reac [INP-545/PL] 02 p0242 No

02 p0245 N68-11500

Monte Carlo or dent energies be SS-67/9) /e,a'p/ reaction for in-1600 MeV 02 p0249 N68-11718

tions of prote 02 p0214 N68-11795

obatic acatteris ion of sickel inocope 03 p0389 N63 a - BBF Total reaction 24.7 MeV alpha p [INP-558/PL] Nuclear reaction [PAEC/A/IN-661] 03 p0373 N68-12305

5.5 MeV Van de Graaff 03 p0390 N68-12408

iom with light nuclei and muclear (ZFK-122) 03 p0394 N68-12589 Nuclear res

03 p0394 N68-12611 excitation functi

Nuclear recoil rang alpha particle reaction [UR-3591-5] 03 p0394 N68-12618 and spectra, proton and lear reactions 05 p0703 N68-13953

tions for /He-3,p/ and

95 p0707 N68-14207 for determining average con-nucleon interactions 05 p0708 N68-14227 Thomas-Fermi

Excitation funct proceedymism 141 [KFK-519] ron reactions with

05 p0716 N68-14666

Delayed protons of tellurium 111 produced by pal-ladium 102/carbon-12,3n/reaction (JINR-P6-3494) 05 p0716 N68-14688 05 p0716 N68-1466

action gammas for ters of high specifi lysis of imperities in alpha ctivity for isotopic power DPSPU-66-30-121 05 p0718 N68-14734

LIPPS 440451 05 pti628 N68-14786 clear reaction as standard method on yield and flux from D/d,n/He 3

06 p0887 N68-16095 ments and calculations and radioactive instru

[NASA-CR-91866] 06 p0888 N68-16101 gy level spins, and mul-Directional correctional correctional correction of games in chlorine 35/n gentless [IFA-NR-25]

for calculating him-NRL-4179] 07 p1047 N68-16645

JINR-P15-35041 07 p1049 N68-16703 (AE-305) 07 p1032 NAS-1682

Gamma-gamma absolute nucleur as and yttrium integer [CEA-R-3260] princed of manufactures QE p1211 N68-17222

OE p1214 N68-17645

08 a1214 N68-17662 PORTRAN per (EUR-3668.E) 00 p1215 NGO-170

09 p1393 N48-19012

SUE

for (SC

nuc [SC

fear (III

PEL

(NA

[NA

of a

Fi

and facil (BN

D

trol (RT)

Fh

NA

[OR

(CE/

fLA-

Hig for SI [NA

Le

(RIS

Re

Rei

Rei reacti [CEA

Rei

(CEA

The

cality with to (RISC

Seq linear [TR-0

Dig perfor coolar (BMI-

Com

param proces WAP

Neu and sh tors (BNW

Lary radiati [NAS/

rmocouples for nuclear

03 p0344 N68-12648

03 p0379 N68-12677

Mathematical models of pressure-temperature

Tungsten-rhe

[CEA-R-3182]

WL-SA-944]

INAS

AEC

Nu

8

F

Energy levels of suciei, formalisms for nuclear reac-ions and models, isotopic targets, and lithium drifted ICOQ-535-5711 09 pl394 N68-19056 Chemical effects of nucl heating, and flash photolysis [COO-1684-2] ar transformations, flash 09 p1297 N68-19174 **NEARREV 2 com** de for statistically analyzing compound nucleus decs [NAA-SR-MEMO-12530] 09 p1394 N68-19177 Nuclear reaction theory and is [ANU-P/393] obaric analog states 09 p1395 N68-19211 Analyticity properties of two body helicity am-CEA-R-3303] 09 p1398 N68-19444 Gas-chromatographic study of reaction products resulting from isomeric transition from bromine 80m to beamine 80 in liquid benzene halides 10 p1480 N68-19607 Lectures on particle m n, nuclear reactions, and other aspects of the [INP-555/PL/PH] ecretical phys 10 p1564 N68-19714 Excitation function of sumarium 147 europium 147 [UCRL-50332] 10 p1568 N68-19950 Secondary reactions of lithium and beryllium frag-unts produced in copper by high energy protons and pha particles 11 p1650 N68-21058 Knockout mechanisms, nuclear binding energies, beta decay and other reactions, energy levels, lifetime measurements, and techniques for fabricating Ge/Li/ [ORO-3624-1] 11 p1754 N68-21144 Electroproduction of pices [DESY-67/31] 11 p1757 N68-21406 Annular lithium-drifted ger study nuclear reaction gamma r rmanium detectors to 12 p1872 N68-22106 Observable effects of box sin 12 p1926 N68-22361 ns induced by charged particles and beam interactions with m [COO-238-51] 12 pl 12 p1926 N68-22372 Proton-induced reactiveight nuclei, and nuclea on light and medium ctions effect on efficien-12 p1927 N68-22404 (USC-136-132) Double charge exch attering of positive pimesons on complex nuclei [PPAD-633F] 12 p1928 N68-22438 Nuclear structure framework of nonrelat [BMWF-FBK-67-82] nuclear reactions in uantum mechanics 12 p1931 N68-22595 Short lived nuclear system pr (JINR-P7-3630) 12 p1935 N68-22713 Mass numbers of of H.I.,xn reaction products from excitation functions
[JINR-P7-3657] 12 p1939 N68-22865 12 p1939 N68-22865 synthesis of new isotopes and elements
[JINR-D7-3623] Asymptotic bel vior of cross sections of elastic and inelastic particle processes (JINR-E2-3655) 12 p1941 N68-22912 Chemical effects of nuclear reaction in various [COO-1620-2] 12 p1841 N68-22965 Semiconductor counter telescope for charged parti-es produced in reactions with neutrons cles produced in (CEA-R-3378) 12 p1879 N68-22970 Experimental res homogeneous pluton [CEA-R-3367] ts of criticality studies with 12 p1913 N68-23017 tion particle stripping and capture [THE-24250] Nuclear chemi uch projects on recoils from (NYO-2771-25) 13 m2118 N68-23671 Six-prong interactions of 16 GeV/c pions with IBJ-837/VI/PH) 13 p2120 N68-23783 Pion-proton-neutron reactions using propune bubble [JINR-P1-3677] 14 0 N68-24475 Specifications for standard nuclear instrument modules (TID-20093, REV. 2) 14 p2258 N68-25273 Carbon 13 used to in deuteron reaction te sitroges 14 by helium 15 p2516 N68-26051

Synchrotron measurement of atomic energy levels in reaction of gamma rays with liquid helium [LNF-68/6] 15 p2516 N68-26055 um 37 established by sic energy levels of pots 15 p2516 N68-26063 neutron cross section tests, and radioactive (WASH-1079) 15 p2516 N68-26112 hummary information on cross sections of neutro luced and charged particle induced reaction stron cross sections of isotopes, and development of (ORO-1067-2) 15 p2524 N68-26697 er to detect reaction ble focusing spectrometer its at 180 degrees to beam d ANU-P/399) 16 p2663 N68-27680 Tabulated data of Q values for three particle reac-ons on nuclei hydrogen-2 isotope to calcium-48 [BMWF-FBK-67-91] 16 p2730 N68-28118 Mathematical methods nuclear reactions in refin (BMWF-FBK-67-93) define nuclear states and fuster model 16 p2730 N68-28119 section data for spacecraft Nuclear reaction cro shield design, and for de INASA-CR-852011 17 p2922 N68-28333 Lorentz pole analysis of high energy reaction piN yield omega N3/2 [IC-68-7] 17 p2929 N68-28772 17 p2929 N68-28772 Nuclear Coulomb energy systems by Q value measurement of tematics and mass ex-nuclear reactions 17 p2930 N68-28878 Magnetic analysis of pro ombardment of vanadium production by deuteron [JEN-181-DF/I-55] 18 p3127 N68-29717 neutron scattering length determined by ents on reaction T/d,He-3/2n 18 p3127 N68-29729 Recoil technique for read with methane and hydrogen ns of hot tritium atoms 18 p3128 N68-29779 Linearized Boltzman transport equation used to etermine interaction of radiation with matter WAPD-TM-661] 18 p3134 N68-30451 determine interacti [WAPD-TM-661] Bibliography on photo and electronuclear disintegra-tion of nuclei [NRL-BIBL.-31] 18 p3139 N68-30798 Satz sum rules applied to high multiplicity processes [INR-P-881/VI/PH] 18 p3139 N68-30808 Angular correlation betwee produced in negative-pion xeno [INR-P-882/VI/PH] en neutral pi-mesons 18 p3139 N68-30809 iculations on production of next closed shell us and other nuclei 19 p3319 N68-30868 Nuclear structure of nitrogen 16, and measurements of energy level widths and angular distributions observed in reactions 19 p3324 N68-31065 Nuclear reactions /d.p/ and /d.t/ leading to spontaneously fissionable americium isotopes [JINR-P6-3744] 19 p3327 N68-31207 s on nuclear reaction m 10 Cross section measurement etween carbon 72 and beryl ISS-68/8] 19 p3330 N68-31433

nuclear read [KFK-693]

[NP-17476]

Positive kaon plus proto negative pion plus delta re and 9 BeV/c [UCRL-18201]

Reaction mechanism for Na-23/d,alpha/Ne-21 reac-

Interference of neutral rho and omega resonances in mihilation reaction positive electron plus negative ectron yields neutral pion gamma and nutrino gamma

20 p3545 N68-32949

20 p3546 N68-32996

on yields positive kaon plus

Final state decay modes following photo-particle actions in oxygen 16 21 p3734 N68-33746 um and helium 3-h Helium 3-tritiu [UCRL-18263] 3-helium 3 reactions 21 p3741 N68-34343 FORTRAN 4 code to prepare 16 group nuclear data tape for transport codes [GEMP-617] 21 p3742 N68-34461 mmary data on isotopic properties of element 103 - Lawrencium (JINR-E7-3766) 21 p3745 N68-34699 Regge pole model for high energy two body reac-ons, and multi-Regge pole model for many body 22 p3925 N68-34999 Kinematics of particle beam energies and angles of incidence from two nuclear reactions [AD-672932] 22 p3928 N68-35328 Quantitative features for two nucleon transfer reac-[UCRL-18225] 23 p4114 N68-36229 Angular correlation mean chopes to test systematics of de nts on boron uteron stripping 23 p4115 N68-36359 Cyclotron operation and equipment, and gamma ray operiment data summary 23 p4118 N68-36580 Electroproduc (DESY-F-32/3) 23 p4122 N68-36839 Angular corre 11/proton, neutros [IFA-CRD-35] on-11 reaction 23 p4123 N68-36891 Reaction channel separation of neutron-proton in-ractions produced during neutron irradiation of bub-le chambers (JINR-P1-3881) 23 p4125 N68-36949 servation of zero pic spin for negative pion COO-1428-841 23 p4128 N68-37041 Proposed high momentum agative pion plus proton autum reactions on zero gr transfer experiments of elding neutral pion plus 23 p4128 N68-37042 [COO-1749-2] od for nucleon transfer reactions, and spectroscopic analysis [CEA-R-3574] 23 p4129 N68-37069 Deuteron bombardment in rai crylliam 9 isotope emitting al adiation resulting in formation ent in range 300 to 1000 keV of alpha, proton, or trito n of lithium 7, beryllius radiation resulting i 8, and beryllium 10 ICEA-R-35041 23 p4130 N68-37079 Excitation energies and spectroscopic factors from riton-alpha particle nuclear reactions of zinc 64 to opper 63, zinc 66 to copper 65, and chromium 30 to anothum 40. vanadium 49 [BMWF-FBK-67-75] 23 p4130 N68-37101 Spectroscopic aspects of role of isospin in transfer reactions [UR-NSRL-6] 23 p4132 N68-37177 Summary papers on nuclear reactions in light nuclei and Mosabauer effect studies [NYO-2028-2] 23 p4133 N68-37193 Nuclear model classification and theory analysis of nuclear reactions [MATSCIENCE-57] 23 p4136 N68-37374 Energy levels of 1p shell nuclei excited in /p, d/ reac-24 p4311 N68-37664 Study of polarization of lamda hyperon for reaction negative kaon neutron yields negative pion lambda par-ticle gy relation applied to 19 p3233 N68-31993 [COO-1428-81] 24 p4315 N68-37864 Two and three nucleon clusterings in boron 11, nitrogen 15, and fluorine 19 using /alpha, lithium 7/ reactions at 42 MeV Nonrelativistic scattering theory applied to deuteron ripping and pickup reactions as introduction to early of direct nuclear reactions 20 p3540 N68-32240 [RE-343] ion-molecule reactions model based on nuclear stripping or direct reaction theory 20 p3416 N68-32395 24 p4316 N68-37934 NUCLEAR REACTOR CONTROL Radiolytic gas production in boron absorber liquid Differential cross sections for reactions negative kaon plus proton yields sigma hyperon plus pion 20 p3342 N68-32531 [AECL-2670] 01 p0088 N68-10016 Computer program /CONTEMPT/ for predicting ontainment pressure-temperature response to loss of colant by accident in water cooled reactors |
100-17220 | 19697 N68-10973 20 p3542 N68-32536 Diffusion board concept in reactor containment [NYO-841-6] 03 p0378 N68-12635

(ORNL-4219)

Computer program for calculating criticality and burning of water smoderated reactor (BNWL-735) 16 p2707 N68-28124

Optimal reactor control computation nuclear rocket reactor [SC-CR-67-2723] 05 Axial power tailoring to oiline temperature in nuclear r (NASA-TN-D-4658) ons with restraints tant fuel- center-16 p2711 N68-28304 05 p0694 N68-14432 Theoretical, and numerical enuclear rocket reactor controls [SC-CR-67-2746] Feasibility of hydrogen zirconium hydride as med tivity of nuclear reactor ort into porous bads of a for controlling reacrical calculations on optimal 05 p0694 N68-14433 17 p2914 N68-28565 Equation of state determ d for porous solids in State variable feedback de coupled core muclear reactor [NASA-CR-93406] gn of control system for reactor containment studies (HTRI-578-P-21-22) 07 p1092 N68-17062 17 p2863 N68-28595 Analog method for optimizing control of plant operation subject to random disturbances [EUR-3735.E] 08 pl203 N68-17307 of reactivity worth of Critical experiment boron carbide cluster of [RCN-90] 17 p2915 N68-28943 Fluid amplifier applications to gas cooled reactor rod es on reactor contro moment design, fimi-[NASA-CR-54005] 08 p1205 N68-17568 products, and fuel com [ORNL-4228] System dynamics and control analysis of tungsten water moderated nuclear rocket [NASA-TM-X-1426] 08 p1207 N68-18252 17 p2916 N68-28998 Circuit applications, maintenar acceptance tests for pulse ampli meter applicable to reactor control [ORNL-TM-1638, PT. 14] Heat release distributi of absorbing rods in co-permit increased continu [ANL-TRANS-542] in in fast reactors with systems spensation units of burnup to 17 p2889 N68-29408 09 p1376 N68-18933 Mathematical model for optimal control of unsteady state plug flow tubular reactors and heat exchangers 18 p3113 N66-29759 ure of merit model for evaluating process control late handling instrumentation of fast flux test facility (BNWL-447) 09 p1345 N68-19374 ity reactor 19 p3311 N68-31635 Dynamic model for control and spatially dependent nuclear reacto [ANL-7322] ntrol and stability analysis of ar reactor systems 10 p1556 N68-19993 Test of temperature switch used for SNAP 8 reactor [NAA-SR-12038] 19 p3314 N68-32111 Logarithmic and period amp trol of nuclear installations [RT/EL/67/12] lifier for automatic con-Description and experimental results of containment stem for radioactive fission products in case of reac-11 p1673 N68-21157 Fluidic analog to pulse freq pneumatic reactor control drum a [NASA-TN-D-4497] quency converter for tor accident [BNWL-SA-1863] 20 p3457 N68-33030 actuator system 11 p1633 N68-21835 Programmed instruction at mentation and controls for re [ORNL-TM-2034, V. 5] n study handbook on instru-reactor operators Molten salt nuclear reactor instru nentation and control system design [ORNL-TM-729, PT. 2A] 20 p3532 N68-33253 Fundamental concepts for reliable and safe suclear reactor instrumentation [RISO-M-722] 21 p3723 N68-33897 12 p1876 N68-22697 Automatic nuclear reactor control system for main-21 p3723 N68-33897 (CEA-R-3323) Hydraulic driven control and a water and steam cooled nuclear re [KFK-665] nd shut down system for 12 p1909 N68-22720 Nuclear data file for nuclear reactor core neutronics and shielding calculations and shielding calculations [LA-3801] 21 p3726 N68-34562 Numerical analysis of criticality and breeding ratio calculations for cylindrical reactors and partially inserted control rods.

[KFK-74]

22 n 3011 Mee. 35738 12 p1909 N68-22728 High temperature radiation resistant rotary actuators for SNAP 8 control system [NAA-SR-12605] 12 p1821 N68-22934 22 p3911 N68-35738 Computer program for retrieval of Containment System Experiment multiplexer data [BNWL-693] 23 p4028 N68-36835 Leakage meas arements of DR3 containment during reactor oper [RISO-137] 13 p2108 N68-23960 NUCLEAR REACTOR MATERIALS U REACTOR MATERIALS Reactivity control of fast nuclear reactors containing yttrium hydride moderating zones [NASA-TN-D-4615] 14 p2289 N68-24539 NUCLEAR REACTORS
NT ADVANCED TEST REACTORS
NT BOILING WATER REACTORS
NT BREEDER REACTORS
NT ENGINEERING TEST REACTORS
NT EXPERIMENTAL BOILING WATER REAC-Reactivity effects of moderator voids in CANDU pe lattice of nuclear reaction (AECL-3002) 14 p2292 N68-25048 Reliability of electronic equipment used for nuclear EXPERIMENTAL BREEDER REACTOR 1 EXPERIMENTAL BREEDER REACTOR 2 EXPERIMENTAL GAS COOLED REACTORS (CEA-R-3292) 14 p2293 N68-25131 ntrol systems for nuclear Reliability of aut FAST NUCLEAR REACTORS
GAS COOLED REACTORS
GASCOUS FISSION REACTORS
HALDEN BOILING WATER REACTOR
HANFORD REACTORS
HEAVY WATER COMPONENTS TEST
REACTORS
HEAVY WATER REACTORS
HEOR REACTOR
HIGH FLUX ISOTOPE REACTORS
HIGH TEMPERATURE NUCLEAR REACTORS
TORS reactors (CEA-R-3380) 14 p2296 N68-25389 NT Theory and computer programs for calculating criti-ality of three dimensional reflected reactor lattice with two group fo 15 p2501 N68-26178 Sequential state and p linear systems and applica [TR-0138/3306/-1] er estimation in nonon to reactor control 15 p2441 N68-26385 Digital computer program for thermal and hydraulic performance prediction of reactor core channels at coolant loss TORS
EIWI B-4 REACTOR
EIWI B-4 REACTOR
EIWI B-4 REACTOR
LIQUID COOLED REACTORS
LIQUID METAL COOLED REACTOR
MENT
LOS ALAMON [BMI-1832] 15 p2503 N68-26684 Computer programs determining critical control arameters for nuclear reactors and fuel handling and WAPD-T-21221 15 p2505 N68-26834 MENT
LOS ALAMOS MOLTEN PLUTONIUM
REACTOR
MOLTEN SALT NUCLEAR REACTORS
NEX REACTORS
ORGANIC COOLED REACTORS
ORGANIC MODERATED REACTORS
PEBBLE BED REACTORS
PHOBUS NUCLEAR REACTOR
PLUM BROOK REACTOR
SNAP 8
SNAP 8
SNAP 8 Neutron scattering, criticality, control, fuel element, and shielding studies for nuclear research and test reac-(BNWL-685) 15 p2506 N68-26942 le for nuclear reactor in-Large containment capsuradiation of explosive materi [NASA-CR-95102] 15 p2703 N68-27049 immary information on research projects of instru-tation and control division of ORNL NL-4219] 16 p2662 N68-27536

NT SODIUM GRAPHITE REACTORS
NT SODIUM REACTOR EXPERIMENT
NT SPACE POWER UNIT REACTORS
NT THERMAL REACTORS
NT WATER COOLED REACTORS
NT WATER MODERATED REACTORS
NT ZERO POWER REACTOR S
NT ZERO POWER REACTORS Effect of physical parameters on shape of seutron spectrum fission peak in hydrogen moderated reactors [KAPL-M-6714] 01 p0049 N69-10124 cores cooled by [RT/ING/67/2] 01 p0149 N68-10340 [ORNL-4126] 10021 N68-10433 ns for fission product is in reactor coolast cirort and de [ORNL-P-3205] 01 p0090/3168-10434 Engineering rocket progra [ANL-7290] **BT 191** 01 p0090 N68-10440 [RISO-M-534] 01 p0092 N68-10454 ues and instruments for ents of control rods, peratures for R.O.S.P.O. [RT/FU67/22] 01 p0093 N68-10694 Sequential delay samp [NSJ-TR-79] e analyzer 01 p0065 N68-10713 Power increase program for Trigs reactor - construc-on of tangential through channel for low gamma in-(RT/ING/67/10) 01 p0094 N68-10737 Fuel analyses a for nuclear reacto [BNWL-492] 01 p0094 N68-10759 Heat transfer and premure to cooled fuel rod clusters for suci [JUL-486-RB] or reactor 01 p0094 N68-10766 tion of glass for ga mma ray de JPRS-434381 01 p0095 N68-10851 Spatial effects nuclear reactors [TID-23946] 01 p0096 N68-10928 DLR-FB-67-59] 02 p0251 N68-11139 (TRG-1500/R/) 02 p0237 N68-11143 of nuclear thermal propul 03 p0370 N68-12186 03 p0371 N68-12187 d on graphite reactors d NERVA design and 03 p0371 N68-12189 test data on SNAP, as 03 p0371 N68-12191 Equilibrium fuel cycle co clud, belium cooled, urunium [ORNL-TM-1789] and engining develo ments in reac (ANL-7286) 03 p0373 N68-12422 m with external diode [NASA-TM-X-32370] 03 p0373 New-12426 03 p0374 N66-12431 Computer pro-um B reactor TRG-1424/R/) 03 p0575 N68-12479 s for mucleur root IANL-73371 03 p0376 N68-12532 ntion of americi-03 p0376 N60-12533

SUE

77 8

.

Pedete

H

AD

in m

Syste

of Po

Hi

Co

IRC!

Ele

Pro

Gen reflect [ITEF

Exa

reactor [AAE

Self-in relat [C.E.-

Mati

KFK-

Mon method [KAPL

DUN-

Mod

Zero power, power feedback, and total reactor transfer functions for direct contact, circulating fuel 03 p0377 N68-12597 [LA-3734] and cladding-fuel evaluation of a cride fuel elements for nuclear Characterization an 03 p0377 N68-12610 ORNL-TM-1676] Optimal control syste for nuclear power install [ANL-TRANS-470] ematically constructed 03 p0378 N68-12660 Systems analysis program for low enrichment fuel reprocessing, nuclear reactor component and engineer-ing research, and bromine pentafluoride for producing 03 p0380 N68-12699 tor projects, and reactor en-Technical work in re 03 p0382 N68-12750 Pressure test and failure analysis for reactor pressure [WAPD-TM-640] 03 p0382 N68-12767 Conference papers on neutron thermalization, muchair reactors, and neutron spectra [JPRS-43682] . 04 p0535 N68-12835 on spectra 04 p0535 N68-12835 Thermoluminescent lithium fluoride response to obalt 60 gamma rays and thermal neutrons in reactor situation field 04 p0540 N68-13721 ents and culculating weapon shielding 05 p0690 N68-13955 RL-GEN-929, REV. 1] 05 p0690 N68-13991 Critical experiment for cavity reactor using gaseous ranium hexafluoride core configuration 05 p0692 N68-14173 Loss-of-fluid test facility reactor experimental and theoretical physics work - STEP project [IDO-17240] 05 p0692 N68-14193 strumentation for mea-clear reactors 05 p0660 N68-14196 Power burst facility critical experiment reactor 05 p0693 N68-14222 Literature survey on chemical aspects of reactor 05 p0625 N68-14534 Statistical error analysis to calculate permisable assients and analyze Doppler coefficient in nuclear 05 p0702 N68-14749 Two microwave me eratures of nuclear re is for measuring in-core tem-07 p1023 N68-16142 a in thermal neutron 07 p1024 N68-16209 terial buckling concept in nuclear reactor theory

[NASA-CR-72329] léicrowave techniques and inst suring physical properties of nucle [BNWL-SA-1314] [GEMP-560] [HMI-B-64] Computer program for calculating neutron flux dis-tributions in reactor shields [GA-8069] 05 p0696 N68-14730 KFK-5781 07 p1024 N68-16210 Heterogeneous reactor theory for characterizing els, moderator, and lattice parameters 07 p1025 N68-16213 s of nuclear reactor systems, 07 p1025 N68-16217 Transfer function of UTR-100 reactor measured with reactivity oscillator [SRRC-19/67] 07 p1026 N68-16222 REC-17/1 Reactor cooling manufacture in round EURAEC-19121 07 p1027 N68-16298 Radial vanc stea tions of flow and p [GEAP-5524] for KRB reactor, equa ord large steam 07 p1027 N68-16308 ritical thermal flux prediction and on bur (EURAEC-1873) 07 p1027 N68-16410 Nuclear fuel ele: [CEA-R-3213] ts in Pegase reactor core 07 p1029 N68-16574

Design of fixed radiat system for nuclear reactor si (DUN-SA-50) 09 p1343 N68-19049 processing technology, ters, and waste disposal 09 p1379 N68-19323 Analog analysis of flow reversal and water hammer pressure in reactor closed hydraulic rabbit tube facility [ANL-7336] 10 p1554 N68-19506 Spectral transmission characteristics of fused silica efore, during, and after exposure to reactor irradia-[NASA-CR-1031] 11 p1740 N68-21124 Development of coat fuels for nuclear reaction [ORNL-TM-2061] d oxide and carbide particle 11 p1740 N68-21129 Thermal problem d Zircaloy channel in Orgal reactor (EUR-3886.F) 11 p1741 N68-21191 evelopment of zero power reeder Reactor 2, reactor lear safety data 11 p1742 N68-21234 Design and techno actors and Experi ANL-7399] Discrete ordinate approximatical techniques for advittion in muclear reactors
[JEN-171-DF/I-51] es and other mathe-tron transport equa-11 p1743 N68-21459 Automatic control syste for nuclear reactors, old logic 11 p1678 N68-21561 reactor construct RT/EL/67/141 Asymmetry source expetiotic eigenvalue of shutdon [WAPD-T-1955] t for measuring asymp-12 p1904 N68-22329 Measured and calculat spectra in HIFAR reactor [AAEC/TM-408] n rates and neutron 12 p1905 N68-22452 opment in reactor fuel Technical research and di [ANL-7403] 12 p1905 N68-22527 Development tec materials (BNWL-473) pey for reactor fuels and 12 p1906 N68-22537 Computer programs, studies for reactor tech [BNWL-534] ments, and theoretical 12 p1906 N68-22538 tor fuel burnup ([AAEC/E-184] 12 p1906 N68-22540 12 p1906 N68-22569 ctivity pulses generated by regulating rod (APDA-NTS-14) 12 p1907 N68-22593 tivities in area of instru 12 p1931 N68-22598 IBNWL-6331 12 p1909 N68-22727 (CEA-R-3328) Computer program for calc content in nuclear reacturs [CEND-300] ting heavy inotor 12 p1910 N68-22784 Summury data on wo physics, power reactors, o and nuclear feels [ORNL-TR-1764] ork conducted in neutron control rods, reactor cores, 12 p1910 N64-22833 f nuclear reactors 12 p1911 N68-22936 (AERE-M-1948) thermal reactors 12 p1912 N68-23006

al fuel exchange in uranium fuel reactor with

Japan Research Reactor-2 irradiated fuel storage facility
[JAERI-1153] OR p1158 N68-18034

Analysis of coolant temper aplace transform solution to a solunt heat balance equation in

08 p1205 N68-17667

08 p1206 N68-17985

08 p1158 N68-18034

ature transients by stial time dependent

99 p1377 N68-18966

09 p1335 N68-19014

monitoring telemetry

flat central zone [IBK-532]

[JAERI-1152]

[KFK-618]

nuclear reactor [EUR-3884.1]

Monitor equipment for tritiated water in air of uclear reactor installation nuclear reactor in (AERE-M-1929) 13 p2068 N68-23707 Irradiation effects on re [NRL-MEMO-1853] structural material 13 p2108 N68-23881 Computer program for calculating plutonium en-13 p2108 N68-23892 act reactor cores due to Reactivity in fuel movement [NASA-TM-X-1587] Leakage mes reactor operi 13 m2108 N68-23960 14 p2289 N68-24509 [UCRL-TRANS-10217] Experimental beryllium oxide re [GA-7485] reactor program 14 p2289 N68-24564 Effects of in lear data on experimen tal and calculated re [BNWL-SA-1485] 14 p2290 N68-24599 od for determining pulse response of sub-14 p2293 N68-25092 rem for critical reactor 14 p2293 N68-25135 Reactivity integral th alse amplifier sensitivity to interference aroun 14 p2293 N68-25163 Shaping and irradia (EURAEC-1980) 14 p2293 N68-25172 Analysis of startup accident in nuclear reactors by [CEA-R-3341] 14 p2294 N68-25252 Method of detecting cartridge rupture in nuclear [CEA-R-3339] 14 p2296 N68-25374 Reliability of an ntrol systems for nuclear CEA-R-33801 14 p2296 N68-25389 BLOOST-6 FORTRAN 4 computer program for 15 p2501 N68-26357 Nuclear reactor operating condition optimization sing Pontryagin principle and qualitative solution of lamiltonian of control equations (ITEF-539) 15 p2503 N68-26507 Lie series analysis of tra nt temperatures in reac-(LA-3833) 15 p2503 N68-26553 merged in sodi lear reactor 15 p2470 N68-26802 activity decrease in s clear fuel due to Xe 135 and Sm 149 [LFEN-NL34/ALPHA/] 15 p2505 N68-26835 Physical, mechanical, and irradiation properties of sorium and thorium alloys, and application to nuclear reactors (ORNL-4218) 16 p2674 N68-27071 [ORNL-TM-2144] 16 p2706 N68-28050 Core heat transfer power in nuclear reacts [GAMD-7911] tents during rise to 16 p2706 N68-28084 Scram tests to dete ransient characteristics of d heat transport system at [APDA-NTS-15] 16 p2709 N68-28203 Liquid Jet Su cept for obtainin [LA-DC-9413] or /LJSFR/ - new con-16 p2710 N68-28287 mma ray production by 17 p2912 N68-28355 electrical resistivity of g small quantities of al-AERE-TRANS-10931 17 p2899 N68-28452 Review of dynamics with isolated spheres, pa-bed nuclear reactors [AECL-2788] seat transfer associated eds, and liquid fluidized 17 p2914 N68-28454 Finion, neutron flux and capture, and prediction of lutonium 238 production using neutron cross section IDP-MS-67-118] 17 p2931 N68-28935 DTA code used to calc iclear reactor data 17 p2937 N68-29220

SUBJECT INDEX Discrete ordinates codes used to determine seconda-ry gamma sources in reactor assemblies and shields 17 p2939 N68-29228 Maintenance shops and equipment for handling nuclear reactor radioactive materials [IN-1176] 17 p2896 N68-29477 Summary information from various studies on effects of irradiation on reactor structural materials [BNWL-455] 17 p2918 N68-29533 Parametric studies of nuclear reactor core design to determine effects of control rod and fuel pin configuration changes on core characteristics [IDO-17241] 18 p3114 N68-30125 18 p3114 N68-30125 High vacuum flow reactor for studying catalytic activity and surface chemical composition of semicon-[AD-669691] 18 p3028 N68-30456 Nonlinear scale period meter for compromising shut-down delay and fluctuation in nuclear reactor opera-INSJ-TR-101) 18 p3117 N68-30472 Mass balance estimate of energy released per fission in nuclear reactor [AECL-3109] 18 p3119 N68-30717 Conceptual design of 10 MWe nuclear Rankine system nuclear electric space power [UCRL-50382] 18 p3007 N68-30760 Calculating experiments of Polish Maryla-2 reactor [REPT.-878/XXI/PR] ental cores on critical assembly 18 p3120 N68-30778 High temperature energy systems with plasma reac-ors and magnetoplasma-dynamic generators for ener-[NASA-TT-F-11825] 18 p3147 N68-30811 Computational techniques and performance criteria for optimal control of nuclear reactor systems and nuclear rocket engine systems 19 p3309 N68-31006 Experimental study of differen ing reactor noise measured by ne [RCN-75] ent techniques of analyz-neutron counters 19 p3309 N68-31227 Dynamic programming application for computing algorithm for optimal control of zenon-power spatial transients in nuclear reactor [KAPL-M-6725] 19 p3312 N68-31705 Electrical resistance a reactor heat transfer stud [REPT.-901/XIA/R] computer program for 19 p3249 N68-31813 Authority Health and Safety Branch plant fault code and punched card system for recording and storing data on UKAEA plants and nuclear reactors [AHSB/S-R-127] 19 p3314 N68-32104 Nuclear-pumped laser electron accelerator as (BNWL-684) 19 p3289 N68-32108 Programmed instru al for nuclear reactor operators on reactor physics topics [ORNL-TM-2034, V. 3] 20 p3531 N68-33078 Nuclear reactor physics experiments on energy spec-trum analysis, neutron diffusion length, and moderator temperature influence reflector and moderator ha Present and potential appi tors in research and technolog [NRL-6709] Exa Self-sustained oscillations in relation to nuclear reactors [C.E.-TRANS-4820]

21 p3739 N68-34270 ons for reactor with (PR-P-75) 21 p3726 N68-34470 Perfectly mixed photochemical reactor, photoprobe for determining their light intensity, quantum efficien-cy of batch reactions, and model for chain and nonphysics, synchrocyclotrons, a [AR-12] Nuclear reactor reses menta in reactor technol [ANL-7286] 22 n3821 N68-35038 Research and developm arbide fuel element fabrics WCAP-3791-4] lications of nuclear reac-22 p3910 N68-35483 usted ion exchange resins from 22 p3827 N68-35543 studies (BNWL-400) heated two phase flow 22 p3863 N68-35631 Mathematical model for steam cooled reactor, and ability of rigid feedback control systems without com-KFK-6561 22 n3912 N68-35900 [EANDC-63/U/] Monte Carlo techniques for checking analytical methods and analysis of hasic nuclear data [KAPL-P-3432] 23 p4100 N68-36234 Technical work ANL-72791 Reliability analysis of a clear reactor electronic Japanese nucl (NP-16498) (DUN-SA-66) 23 p4100 N68-36295 Modification of hypass channel relative to increasing power of Triga reactor to 1 MW [RT/ING/66/26] 23 p4101 N68-36599

penix marine reactors, VL-6351 23 p4102 N68-36756 Critical calculations for small nuclear reactors [WAPD-TRANS-85] 23 p4102 N68-36781 Moments method for analysis of flux distributions in [MIT-2344-11] 23 p4103 N68-36890 Methods of manufa-use in nuclear reactors [CEA-R-3532] dacturing activation detectors for 23 p4064 N68-37040 Very high burnup vapor transport fuel pin concept for long life nuclear reactors [NASA-TN-D-4860] 23 p4104 N68-37209 Neutron fluctuations in back determined by Lange (BNWL-SA-2003) lear reactors with feed-24 p4293 N68-37494 Reactivity integral to [ANL-TRANS-645] for critical reactor 24 p4295 N68-37880 nyl coclants 24 p4296 N68-37907 Reactor irrac [MIT-334-94] udies in fuel elements, fission and ses, core calculations, and related (BNWL-775) 24 p4298 N68-38497 Parametric mission performance data for mission orientated advanced nuclear system parameters study generated by computer simulation of flyby, stopover generation of the second UCLA cyclotron laboratory organization, research program, staff, and computer
[AD-659389] 01 p0107 N68-10465 Nuclear physics research at Purdue Research Foun-01 p0109 N68-10526 Nuclear research and powerious countries, and operations and breeder reactors d power plant developments in operating experience with fast [JPRS-43265] 01 p0094 N68-10725 Nuclear research and reactor technology, ATR, ETR, and MTR engineering experiments, and irradia-(IN-1083) 01 p0095 N68-10795 Proceedings of Symposi Technology for Ceramists [NBS-MISC.-PUBL.-285] m on Nuclear Science and 01 p0081 N68-10801 or research documents 01 p0014 N68-10914 Bibliography of nuclear scient [JUL-BIBL-7] U-233 critical mass requirements for two specific ortex stabilized nuclear light bulb and open cycle asseous nuclear rocket engines NASA-CR-90112] 01 p0096 N68-10931 of nuclear technology (EUR-3616.D) 02 p0293 N68-11798 Research equipment saries for various n ormance and progress sum ar, general, neutron, and 02 p0249 N68-11814 nuclear and theoretical safety factors 03 p0386 N68-11997 d engineering develop-03 p0373 N68-12422 nt of uranium plutonium on technique 03 p0373 N68-12424 Thermalization theory, computer programs for iclear reactor technologies, and reactor experimental 03 p0393 N68-12528 Various research activities for nuclear reactor development program [ANL-7357] 03 p0376 N68-12532 03 p0376 N68-12532 applications to research physics, and condensed 03 p0395 N68-12633 for projects, and reactor en-elopment programs 03 p0382 N69-12750 gects status reports 03 p0399 N68-12803 tear research using on ced test reactor 05 p0691 N68-14012

Nuclear fuel elements fabricated for irradiation in EURATOM fast flux breeder reactor [EURFNR-318] 05 p0692 N68-14218 to determine trial and (KAPL-F-3392) 05 p0710 N68-14342 Nuclear structure, reaction phosphorus 31, carbon 14, all minum 27, and sulfur 32 [COO-1120-68] s, and energy levels of licon 30, lithium 6, alu-05 p0715 N68-14586 Brief descriptions of theoretic vestigations in high energy and a [COO-1371-43] ral and experimental in-nuclear physics 05 p0720 N68-14816 Safety hand materials in na (GEMP-557) 05 p0681 N68-14875 European Atomic Energy Cor (EUR-3568.F) 07 p0982 N68-16673 Mark 2 annular superheat nuclear fisel irradiated to termine stress corrosion of selected cladding materi-06 p1203 No mary for New Zea-Research projects, and stu land nuclear science institute (NP-17190) 09 p1394 N68-19068 Organizates facility in Ge (NP-17070) 09 p1283 N68-19088 High energy physics, bu emputer programs and do [UCRL-17544] 10 p1570 N68-20350 arch in re or and neutron physics 11 p1738 N68-20951 Summary of [BNWL-472] Review and analiza nuclear react (HMI-B-51) '11 p1754 N68-21141 FORTRAN computer program for generating data files (ANL-7318) 11 p1755 N68-21171 High energy research program [SLAC-PUB-369] for linear accelerator 12 p1927 N68-22394 Heat transfer by organic con [RISO-162] 12 p1983 N68-22439 Principles and programemories in auclear res [CEA-R-3394] ods for associative 12 p1929 N68-22553 Summary data on work physics, power reactors, con and nucleur fuels [ORNL-TR-1764] conducted in neutron strol rods, reactor cores, 12 p1910 N68-22833 natorials development of pressure vessels, and Summary data on refractory metal alloys, 12 p1911 N68-22836 high temperatur (GEMP-1002) Historical review of accele 1956-1967 [CERN-68-9] ech at CERN -13 p2048 N68-23616 Angular conversion programs in machor research from laboratory to center mass system using UMC-1 [INF-565/PL] 13 p2037 N68-24241 er technology, and Soviet mu JPRS-45331 14 p2290 N68-24602 try dealing with flation products, decay, and related to BMWF-FBK-67-89] 14 p2295 N68-25306 Report on low beta toroidal p [TID-24228] 15 p2527 N68-25772 Nuclear research reports on neutron cross section easurements, nuclear model tests, and radioactive (WASH-1079) 15 p2516 N68-26112 AEC off-site chem research program 15 p2414 N68-26239 energy bubble or spark 15 p2523 N69-26796 (HEPG-23) in process contro 15 p2420 N68-26848 Nuclear Science Abstracts (K-DP-3109) 16 p2728 N Bibliographic review of low energy nuclear flu 17 p2933 NIA-20962

INAS

Flu

Charged particle reactions and scattering, neutron scattering, and activation analysis in nuclear research studies (NP-17434) 17 p2933 N68-28985 Nuclear reactor design, construction, and utilization by atomic energy department of India 18 p3116 N68-30319

Microsampling technique for preparation of highly adioactive materials for analysis in unshielded

18 p3117 N68-30452 Metal forming and metal working technology developed in nuclear research program [BNWL-SA-1806] 18 p3096 N68-30791

Conference papers on synthesis and properties of otopes of transuranium elements INR-D7-3548] 19 p3319 N68-30864 isotopes of transur (JINR-D7-3548)

Cyclotron development, alpha decay, and properties isotopes of transuranium elements studied in Soviet search facility

19 p3319 N68-30865 Fast breeder reactor optimization methods, reactor safety, and various aspects of fast breeder reactor ther-mal and hydraulic analysis [RT/ING/68/7-PRV-R-/67/2]

19 p3310 N68-31463 Summary information on various nuclear research projects and test reactors, neutron irradiation, effects, and criticality and reactivity studies [BNWL-739]

Nucleur research on decay schemes, nuclear reac-tions, metal carbonyl spectroscopy, and shell models [ORO-2434-4] 20 p3540 N68-32250

Nuclear physics research, solid state studies, and idiation detector developments [AECL-3157] 20 p3456 N68-32505

Neutron cross section measurements and other nuclear research activities of EURATOM [EANDC-/E/-89U] 21 p3739 N68-34155

Signal to noise ratio enhancement in nuclear instru-

22 p3874 N68-35133 Present and potential applications of nuclear reacters in research and technology NRL-6709) 22 p3910 N68-35483

Theoretical and experimental development studies for electron accelerator with cullective acceleration of charged particles [184-7426] 22 p.3932 N68-35664

Biological indicators of radioactivity in vicinity of nuclear facilities [DP-MS-67-99] 23 p3998 N68-36455

Research project summaries on cosmic rays, accelerator physics, linear accelerators, nuclear spectroscopy and structure, cyclotrons, radioactivity, and nuclear physics theory
[NASA-CR-90099]

23 p4117 N68-36573 23 p4117 N68-36573

Summary report on nuclear engineering and evalua-tion studies [BNL-30082] 23 #4103 844 Summary papers on nuclear reactions in light nuclei and Mountmeer effect studies [NYO-2028-2] 23 p4133 N68-37193

NUCLEAR RESEARCH AND TEST REACTORS

NT ADVANCED TEST REACTORS

NT EXPERIMENTAL BOILING WATER REAC-

TORS

NT EXPERIMENTAL BREEDER REACTOR 1

NT EXPERIMENTAL BREEDER REACTOR 2

NT EXPERIMENTAL GAS COOLED REACTORS

HEAVY WATER COMPONENTS TEST REACTORS HERO REACTOR HIGH TEMPERATURE NUCLEAR REAC-NT HEAVY

TORS

T KIWI REACTOR

NT LIWI REACTORS

NT LOS ALAMOS MOLTEN PLUTONIUM

REACTOR

NT NRX REACTORS

NT PLUM BROOK REACTOR

NT PLUTONIUM RECYCLE TEST REACTOR

NT SODBLUM REACTOR EXPERIMENT

NT ZERO POWER REACTOR 3

adiated materials testing reactor fuel elements in in semicontinuous flooded dissolver to ob-and acid deficient products 02 p0178 N48-11757 cid and act

al voltmeter read-out system for use with wave reactivity oscillator for research reactor 03 p0344 N68-12593 (AAEC/M-74)

Design data for gas cooled test loop, and implie cap-nale facility from mackup reactor caperiments [NASA-TH-X-1509] 06 p0877 N68-15855

Energy storage and operating performance of MTR graphite reflectors [CONF-670640-1] 06 p0877 N68-16096

Thermal newtron spectrum measurements at urani-m test reactor 100 beam hole using slow neutron hopper of Fermi type 12 p1907 N68-22607

Off-gas filter plugging in primary reactor of fluidized bed fluorine volatility process plant [BMI-X-490] 12 p1841 N68-22931

Physical constants testing reactor measurement of infinite medium neutron multiplication factor for uranium lithium supercell [BNWL-62] 13 p2108 N68-23871

Efficiency tests of systems filters, reactivity and flux reasurements on cadmium-boron neutron filters, and elated research reactor activities DRN LTA-21471

[ORNL-TM-2147] 14 p2294 N68-25227

truction, pilot testing, and fuel element storage on at EURATOM nuclear plant in Italy 1901.1] [5 p2499 N68-25761 [EUR-3901.1]

Nuclear reactor design, operation, and technology sing MIT test reactor and related bibliography od bibliography 15 p2504 N68-26693

Neutron scattering, criticality, control, fuel element, and shielding studies for nuclear research and test reac-

(BNWL-685) 15 p2506 N68-26942 Large containment capsule for nuclear reactor ir-radiation of explosive materials [NASA-CR-95102] 16 p2703 N68-27049

Critical mass of uranium 235 for stainless steel lined cavities in nuclear research and test reactors with 17 p2914 N68-28566

Fast Flux Test Facility for liquid metal fast breeder reactor materials and fisch [BNWL-SA-1750] 18 p3119 NAS-10222

Reactivity and neutron spectra in fast nuclear reac-ors, and subcritical time-of-flight spectrum facility GA-8377] 18 p3119 N68-30725 [GA-8377]

Mathematical model for dynamic response and con-ol analysis of fast flux test facility reactor INWL-707) 19 p3311 N68-31635

IAN-R1 research reactor /description/ 19 p3313 N68-32083 [IAN-R-1-2]

Summary information on various nuclear research projects and test reactors, neutron irradiation, effects, and criticality and reactivity studies

[BANKI_730] and criticality (BNWL-739) fies 19 p3314 N68-32101

Physical constants test reactor integral measure-ments of plutonium 239 alpha in fast spectra [BNWL-774] 20 p3534 N68-33428

Mathematical model of multiple nuclear reactor with continuous reactivity measurement [CEA-R-3375] 22 p3911 N68-35714 **NUCLEAR ROCKET ENGINES**

Transient childown of thick-walled tube simulating-nuclear rocket using liquid and gaseous hydrogen [NASA-TN-D-4238] 01 p0150 N68-10368

U-233 critical mass requirements for two specific vortex stabilized nuclear light bulb and open cycle gaseous nuclear rocket engines (NASA-CR-90112) 01 p0096 N68-10931

Fast and moderated nuclear reactors, and feasibility of low-power lightweight reactors for nuclear rocket engine applications

03 p0371 N68-12188 Nuclear rocket engines based on graphite reactors for extended-stay missions, and NERVA design and performance data

03 p0371 N68-12189 Operational safety of nuclear rocket engines, and ountermeasure developments

03 p0371 N68-12190 Monte Carlo method, kernel function, and 5 matrix theory applied to design and analysis radiation shields in nuclear rocket systems (NASA-CR-91541) 04 p0538 N68-13501

POINT computer program for design and analysis of radiation shields in nuclear rocket systems [NASA-CR-91543] 04 p0538 Nd8-13502

TAPAT computer program for design and analysis of radiation shields in nuclear rocketry [NASA-CR-91542] 04 p0539 N68-13503

KAP-5 computer program for design and analysis of radiation shields in suclear rocket systems [NASA-CR-91540] 04 p0539 N68-13504

TIC-TOC-TOE comput shielding design and analys (NASA-CR-91533)

Users manual for ODD-K computer program used in adiation shielding design and analysis in nuclear rocket systems [NASA-CR-91534] 04 p0539 N68-13506

Neutron flux and gamma ray source edit computer program for design and analysis of radiation shields in nuclear rocket systems [NASA-CR-91535] 04 p0540 N68-13507

ODD-K angular flux tape computer program for idiation shielding design and analysis in nuclear [NASA-CR-91536] 04 p0540 N68-13508

Fortran analytic solution of transport equations by random sampling in radiation shielding design and analysis of nuclear rocket systems [NASA-CR-91538] 04 p0540 N68-13509

Optimal reactor control computations with restraints for nuclear rocket reactor [SC-CR-67-2723] 05 µ0694 N68-14432

Theoretical, and numerical calculations on optimal nuclear rocket reactor controls [SC-CR-67-2746] 05 p0694 N68-14433

Mathematical models of biological hazards from nuclear rocket engine flight failures [NUS-229, REV.] 07 p0944 N68-16364

Fuel retention, flow characteristics, and trans-arence of materials studied as part of gaseous nuclear rocket investigation [NASA-CR-92987] 07 p1030 N68-16664

Feasibility of supporting liquid fuel on solid wall in radiating liquid core nuclear rocket concept [NASA-TN-D-4413] 07 p1072 N68-17093 Thermodynamic and optical properties of uranium plasma in proposed gaseous core nuclear rockets [NASA-CR-72348] 08 p1217 N68-17430

System dynamics and control analysis of tungsten water moderated nuclear rocket [NASA-TM-X-1426] 08 p1207 N68-18252

Summary of nuclear reactors, fuels and operating principles of nuclear rockets [NASA-TM-X-52406] 10 p1555 N68-19830

Postshutdown cooling requirements of tungsten water moderated nuclear rocket engines [NASA-TM-X-1568] 11 p1740 N68-21111 Specific nuclear light bulb and open-cycle vortex sta-bilized gaseous nuclear rocket engine designs [NASA-CR-1030] 2 p1904 N68-22038

High temperature ultrasonic temperature measure-ments in nuclear rocket engine to determine feasibility of rhenium sensor as high temperature sensor [NASA-CR-72395] 13 p2072 N68-24327

NASA-CR-72395]
Hearings before U.S. Senate Committee on teronautical and Space Sciences - nuclear rockets program and cumulative indexes for facal 1969

14 p2376 N68-24340

Flight optimization considerations for fast manned interplanetary spacecraft using nuclear propulsion [TUB-IR-4/1966] 15 p2562 N68-26840

Engine requirement parameters for gaseous fueled nuclear rocket engines [NASA-TM-X-52435] 16 p2703 N68-27231

Analytical investigation of flow and wall temperature sensitivity in heated passages for large inlet to exit density ratios in subsonic flow of nuclear rocket [NASA-TN-D-4649] [7 92983 N68-28371

Axial flow in directed wall jet vortex tubes studied rapplication to gaseous nuclear rocket technology NASA-CR-95730] 17 p2918 N68-29303 for application to gaseous nucle [NASA-CR-95730]

Computational techniques and performance criteria or optimal control of nuclear reactor systems and uclear rocket engine systems 19 p3309 N68-31006

Phoebus 2A 5000 MW reactor test preparations and fuel element developments in Rover nuclear rocket LA-DC-95891 20 p3531 N68-33086

Scale model tests of nuclear rocket exhaust scrubber for reduction of fission product release [LA-DC-9555] 20 p3532 N68-33089 for use in prototype

On-line process compusciour rocket engine tests LA-DC-9460] nuclear rocket e [LA-DC-9460] 20 p3533 N68-33369 Thermionic reactor core with short-length externally fueled diodes, and electrical failure analysis [NASA-TN-D-4805] 21 p3723 N68-34067

21 p3723 N68-34087 Design features and performance characteristics of thermionic reactor systems for space applications [NASA-CR-96782] 21 p3728 N68-34737

Nuclear and explosive destruct concepts for nuclear 22 p3909 N68-34833

A-840

NAS. (NAS. TUCLE NT I Diff LYC TH/2

> ORN Fort general tions as [ORNI Theo integra [NAA-

(AD-66

beta des (SLAC-

Lectu high ene (BNL-1

Curre

GBR(YALE Unique and repr [MRC-T earth reg Dynan Glaub

tions for [LNF-68 Regge CALT-Experi of predict (BNL-12 bon 12 ILYCEN

Graphi suclear is [LYCEN Phase s mucleon o (AFOSR-AFCRL-Kaon de (NYO-38)

and Regge Kinoma egge traj AD-6685 Optical tering of h (ANU-P/4 a

8

3

12

13

13

in

12

in

11

12

27

11

re n.

71

33

-

06

36

99

By

87

of

37

181 33

Small water-graphite nuclear rocket stages com-ared with chemical upper stages for use in unmanned NASA-TN-D-4827] 22 p3910 N68-35073 um control of nuclear Distributed parameter optimaket with thermal stress cousts ainta 23 p4099 N68-36085 n applied to gaseous nucleur rocket engi 23 p4101 N68-36615 Design parameters in bility of thermionic rea [NASA-CR-97257] n size, man, and reliaelectric propulsion 23 p4103 N68-36928 Effect of turbulent tures in gas-core nucle [NASA-TN-D-4882] n average fuel temperaengine 24 p4297 N68-37927 NT NEUTRON SCATTERING NT RESONANCE SCATTERING Diffraction model for elastic scattering of mediu 01 p0112 N68-10736 Comparison between sum rules and bootstrap rela ted superconvergence of for static models 01 p0114 N68-10839 (TH/217) Fortran computer program //UPITOR-1/ for cou-ed-channel calculations to evaluate cross sections for scattering of nucl [ORNL-4152] 01 p0115 N68-10898 Fortran computer program for calculating most general tensor moments of polarization in nuclear reactions and scattering [ORNL-4125] 03 p0390 N68-12392 Theory and computer of integrals and Doppler coe [NAA-SR-12509, PT. 1] 03 p0374 N68-12436 for backward peru-04 p0550 N68-13635 Current algebra applicati scattering, and radiative co beta decay [SLAC-PUB-338] n for kinematics of lepton rections to Fermi part of 04 p0550 N68-13758 Il angle elastic scattering of it weight nuclei 05 p0715 N68-14590 Lecture on theory of small at high energy nucleons on light w [BNL-11722] for calculation of inelastic elec-ng by nucleus - nuclear wave func-GBROW program for calcon inelastic scattering by nuc [YALE-2726E-49] 06 p0883 N68-15238 Uniqueness theorem for and representation of pote [MRC-TSR-783] ial differential equation scattering operator 06 p0863 N68-15533 Determination of ytt 4 deformations in rare article scattering 07 p1053 N68-17059 earth region by inelastic alpha po [UCRL-17547/EXP/] Dynamic polarization of protons by solid state effect seasured on Er-doped and Nd-doped Y ethyl sulfates 10 p1487 N68-20038 Glauber method used to express angular distribu-tions for pion light nuclei interaction [LNF-68/2] 11 p1756 N68-21314 Regge poles and high energy m [CALT-68-145] 12 p1929 N68-22552 Experimental measurer of predicted dispersion rel [BNL-12058] and theoretical analysis in nuclear scattering 12 p1930 N68-22571 Reactions of /alpha,t/ and /alpha,helium 3/ on carbon 12 [LYCEN-6747] 12 p1938 N68-22837 Graphical approach to an miclear inelastic scattering [LYCEN-6743] mium aspects of 12 p1938 N68-22838 Phase shift analys nucleon scattering [AFOSR-68-0519] sion relations for pion-13 p2113 N68-23144 ich to three body scat-Partial wave func [AFCRL-67-0673] 13 p2121 N68-34035 ion scattering 14 p2302 N68-24485 SU/3/ crossing relationand Rogge pole theory [TUEP-68-6] eson-baryon scattering 15 p2513 N68-25996 quantum mechanics of and unequal mass scatter-AD-668537] 16 p2717 N68-26968 tribution of elastic scat-cen 22 nuclui 16 p2722 N68-27608

S matrix theory, pion-pion other topics on dynamics of str [LPTHE-TH-222] 16 p2725 N68-27964 Resolution and a elastic scattering expe [BNL-12342] is of proton-matters, as -17 p2923 N68-28393 17 p2928 N68-28653 nd cross sections found in to potential scattering 17 p2929 N68-28672 cattering, and thermal ab-17 p2933 N68-28978 ron scattering cross 31-211 17 p2939 N68-29235 19 p3320 N68-30870 um electrodynamiction of Month ing resonant molei 19 p3346 N68-30898 elastically scuttered alkali ered alkali balides in colli-ams of Cs, K, and Rb with 19 p3326 N68-31151 (EIR-132) ution 19 p3312 N68-31927 p3733 N68-33818 UCRL-17873] 23 p4121 N68-36804 develop formula for T 23 p4125 N68-36968 Model for pion-pion [SINP-TH-67-18] 24 p4304 N68-37426 alpha scattering for 24 p4257 N68-37851 Appearance of Regge poles while scattering in cou-mb field LIINR-P2-38661 24 p4318 N68-38058 U RADIATION SHIELDING NUCLEAR SPIN Free local fields involving in onventional relations between vermetry theory with noncompe ng infinite multiplets with own upin and statistics in JINR-E2-3430) 01 p0105 N68-10392 (080-2791-26) 02 p0246 N68-11509 ion by suctour spin nic orientation, and op-UC 34 20 OR4) 03 p0397 N68-12704 05 p0704 N68-13990 Validity of master equation sumption used to describe a detection of rare spin species (UCRL-17468) rith spin temperature as-clear double research 05 p0716 N68-14665 07 p1039 N68-16199 [KFK-616] 07 p1042 N68-16363 -10 p | 349 N60-18314 alet re (IS-T-210)

0 p1490 N48-19584

10 p1562 N68-19586 10 p1489 N68-20111 homon interactions in 10 p1579 N68-20179 Spin dependent on regoveration INR-F2-3621) Spin dependent tion at high energi (DESY-67/32) 13 p2115 N64-23369 Neutron scat resonance energ excited states [CEA-R-3360] 14 p2307 N68-24837 14 p2317 N68-25320 culations of Rydberg-ic reclacates, and exhi-tor bound states 18 p3025 N68-30212 NL-TM-2167) IAROD-4768-5-P1 21 p3732 N68-34554 instinct of ferrodistic ity atoms in ferromag 21 p3757 N68-34742 Free and forced paucieur spin and a precession, and design [JPRS-46444] ter memory. of nuclear 22 m3881 N68-35975 ferences (CERN-68-32) 23 p4111 N68-36015 clear spin lattice s on of several methi in re-lydrote 24 p4305 1468-37474 nor of di it for particles with an (JINIX-P2-3896) 24 p4314 166-37835 of by collision with Moincular spectra metastable solds pas at [RE-346-J] 24 p4221 N68-39455 NUCLEAR STRUCTU MWF-FBIX-67-591 01 #0105 NAS-10390 01 p0109 Nes-10495 applied to su Inclustic scattering structures and excited (UCRL-17503) 01 p0115 M68-10076 02 p0244 NSS-11305 Thomas Formi of average properties in [UCRL-17725] UCB-MPIALED 62 p6246 1468-11532 d R-procom as man low 92 p0246 1468-11537 Siene with light carclei [LA-DC-8950] Conference on and nuclear structs [ZFK-122] 03 p0394 1668-12509 m-particle states of Military potential 03 p0715 1668-14590 Method for colcula ofermed nuclei using re (INR-E4-3453) [ITF-67-9] 05 #0718 N68-14765 Alphn particle inelast collective states of mo-reutrom and 28 and 50 (CEA-R-3142) -11-11 07 p1041 HER-16364 07 p1042 HGB-1634 12 p1996 NGS-22743 [ARCL-3041] 12 m1986 10

aphe (IPN

INR

Fri prodi INR

Ne [JIN]

Cal emiss nucle [NP-

Die [IAE-

Sur nuclei [INP-We

states [NP-1 Slow nucleu tering [BNL

Sign meson (UCSI

(UCR

Ener teracti [NAS/

Brok [TH/2:

FOR and pa sions [NASA

Case with nu

Low plane, a tions (CEA-I

Energions as detecto (COO-

NEA

NAA-

Inters 165 nuc

Spin deforme [JINR-E

Diffra and pick [JINR-P

Mathe nuclear

Sub-Coulomb deuteron stripping in lead to obtain spectroscopic factors	Operational significance of flash blindness - Navy program for minimizing hazards of flash blindness phenomena on performance capabilities of aviation personnel	Effect of monomo
[ANU-P/401] 16 p2722 N68-27540	phenomena on performance capabilities of aviation personnel	(NRL-6672) Nucleation and
Shell theory of nuclear intermediate structure relat- ing proton inelastic scattering to deuteron-proton reactions	21 p3043 N08-34535	suspension and mixi lizer
[LA-DC-8192] 17 p2922 N68-28356	Rate of emission of thermal radiation from nuclear weapon detonated at low altitude, and relationship to flush hindness	****
Wave functions and correlation effects in shell model of nuclear structure [COO-1031-18] 17 p2939 N68-29236	. 21 p3643 N68-34536	Melting, solidific single crystals with a
Muchae data outical nucleur model reactivity ther.	NUCLEATE BOILING NT LEIDENFROST PHENOMENON	Machanical vibor
modynamic properties and reaction kinetics of various compounds in reactor physics and automatic neutron cross section analysis programs	Critical heat flux measurements in boiling water [EUR-3347.E] 01 p0150 N68-10450	Mechanical vibra cooled liquid bismut
cross section analysis programs		Nucleation and a
[M:MEC-12030] [7 p2917 Non-29333	Ultrasonic instrumentation for incipient boiling de- tection in liquid metals or fused salts [NYO-3622-10] 01 p0066 N68-10758	Nucleation and p kinetics and oligom aminocaproic acid to
Atomic orbitals, nuclear structure, and wave func- tions of interacting particle shells [T-R-644] 18 p3127 N68-29733	[NYO-3622-10] 01 p0066 N68-10758 Ultrasonic boiling detector installation in nuclear	ammocaprose acid to
	(NYO-3622-8) 03 p0344 N68-12526	Light scattering nucleation in conder
Transition probabilities and branching ratios for Coulomb excitation of even-even nuclei applied to nuclear structure models	Bibliographic review of departure nucleate boiling in	[AD-668849]
[ORNL-TM-2121] 18 p3025 N68-30208	Bibliographic review of departure nucleate boiling in nonuniformly heated channels [EUR-3397.E] 05 p0757 N68-14763	Droplet re-evapo
Optical model analysis of angular distributions for elastic scattering of protons with coamotron to study	Gravity effects on bubble dynamics generated during	Droplet re-evapo water vapor in Wils theory on submicros
(ORO-1316-57) 18 p3134 N68-30420	[NASA-TN-D-4301] 06 p0925 N68-15330	Nucleation rate re
	Natural convective pool boiling of liquid alkali	Nucleation rate re aion density over wid
Chemical effects of inomeric radioactive decay, recoil reactions and hex atoms, for radiochemical analysis of nuclear transformation	[AERE-R-5436] 09 p1449 N68-18880	Nucleation mecha
[BNL-12361] 18 p3030 N68-30/11	Surface vibration effects on nucleate boiling at low	Nucleation mecha percooled potassium
Calculations on production of next closed shell sucleus and other suclei	heat fluxes 10 p1611 N68-19603	Precipitation [NAD-CR-RDTR-11]
19 p3319 N68-30868	Vertical magnetic induction effects on nucleate boil-	Nucleation and g
Model studies and calculations for structures and deformations of transversaison nuclear shells	ing of mercury	films to observe p
19 p3320 N68-30869	[NASA-TM-X-52295] 14 p2374 N68-25333 Rolling heat transfer on elatinum wise for carbon	[NASA-CR-86084]
	Boiling heat transfer on platinum wire for carbon dinxide, ether, and F 13	Crystal structure
Cross section measurements of element 102 isotope formation during irradiation of Pu targets with O ions from cyclotrum	15 p2574 N68-25857	served by electron of mation of thin metal
19 p3320 N68-30870	Nucleate boiling and boiling heat transfer in aqueous solutions	(NASA-CR-86083)
Nuclear structure of nitrogen 16, and measurements of energy level widths and angular distributions observed in reactions	15 p2575 N68-26180	Crystal growth, ed
	Boiling flow regime, critical heat flux, and film thickness measurements in nucleate boiling tube [NYO-3304-11] 16 p2709 N68-28205	tions in in crystals gre [TR-0158/9230-03/-
Nuclear structure of dysprosium isotopes in transi- tion region and their energy levels and ground state Q values	Microlaver vanorization mechanism in pool boiling	Nucleation, solidi
tion region and their energy sevens and ground state Q values	Microlayer vaporization mechanism in pool boiling of water at atmospheric pressure 17 p2985 N68-28561	lead tin autectic stor
19 p3327 N68-31170	Effects on heat flux rate of heating surface material	techniques
Nuclear structure effects in simple high energy spal- lation reactions with nickel and zinc	Effects on heat flux rate of heating surface material using plated and unplated stainless steels during nucleate boiling	Effects of nucleat
20 p3541 N68-32335	18 p3186 N68-29900	thermosetting polymi (AD-671093)
Inelastic acutering of electrons from carbon 12 used in experimental investigation of nuclear structure 20 p3542 N68-32484	Bubble growth, nucleate boiling, and mass transfer reviewed in electrolytic gas evolution process	Formation of Languir jets and use of energy in nozzle to de
Isolated resonances and intermediate nuclear struc-	18 p3021 N68-29943	energy in nozzle to de
Isolated resonances and intermediate nuclear struc- tures based on neutron total cross section measure- ments between 400 and 1200 keV	Surface and geometric effects on nucleate boiling of liquid nitrogen and liquid argon from atmospheric to critical pressure	[AD-670551]
[CEA-R-3279] 22 p3936 N68-35846	critical pressure 18 p3188 N68-30358	Surface and airbor
Nuclear structure, and spin and parity assignments of various nuclei	NUCLEATION	ments in Arizona (ECOM-2954)
23 p4117 N68-36578	NT CLOUD SEEDING	Nucleation and cry um boron aluminum
Research project abstracts on nucleur structure, Har-	Cavitation nucleation induced by slow and fast	um boron aluminum
Research project abstracts on nuclear structure, Har- tree-Fock approximation, quark model, quantum elec- trodynamics, and three body problem	[AERE-R-5486] 01 p0109 N68-10531	Conference on nuc
23 p4118 Nos-30381	Transport mechanisms, supersaturation, nucleation, and growth of whiskers from vapor phase.	(AD-671907)
Table of central-force geometrical coefficients with Talesi integrals for calculating nuclear two-body matrix elements using harmonic oscillator wave functions [NRL 4733] N68-36693	[EMDE-17/M/00] 04 po+72 Mos-13334	Adsorption and n
elements using harmonic oscillator wave functions [NRL-4733] 23 p4119 N68-36693	Homogeneous nucleation in condensation, diffusion in termory interestical policy appetitudes surface self-diffusion	tungsten by physical v
Numerical analysis of atomic energy levels and	Homogeneous nucleation in condensation, diffusion in ternary interstitial solid solutions, surface self-diffusion on metals, and thermally activated coupled-cur-	Nucleation and pre
JINE-P4-3873 23 p4136 N68-37372	[AFOSR-67-2789] 06 p0893 N68-15169	- 4 to 1 to 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Shell model wave function structure for low states of	Nucleation rate of solid phase in thermal dissociation	Summary informat
[ANL-7439] 24 p4305 N68-37483	reaction of magnesium carbonate [NASA-TT-F-11477] 06 p0793 N68-15857	tion and grain growth [NASA-TM-X-59720
UCLEAR SUBMARINES U SUBMARINES	Homogeneous nucleation and droplet growth mea- surements in Wilson cloud chamber using laser in-	Aluminum zinc all intragranular and grai
O SUBMARINES RICLEAR WARFARE	cident radiation source	The second secon
Manufacture of air filter units for biological, chemi-	09 p1350 N68-19475	Cavitation nucleation
cal, and radiological protection [NRL-MR-1852] 13 p2078 N68-24291	Nucleation and growth processes in interstellar grain formation	Nucleation and gr
GICLEAR WEAPONS	[NASA-CR-93724] 10 p1590 N66-19639	dimethylglyoximes (COO-382-14)
NT FISSION WEAPONS	Nucleation, condensation, and subsequent growth rates of single crystal thin films	
Neutron species measurements and calculating methods for nuclear reactor and weapon shielding 05 p0690 N68-13955	rates of single crystal thin films [AFML-TR-67-410] 11 p1770 N68-20808 Bubble chamber to study radiation-induced nuclea-	Growth of thin cells chemical reduction
U2 puero N88-13933	and the same of th	0.001.000 mg

(SU-324-P-13-2)

In situ electron mic deposition nucleation pr [NASA-TN-D-4506] 11 p1752 N68-20879

for studying vapor

11 p1654 N68-21430

11 p1658 N68-21838

s vapor-solid transforma

SUBJECT INDEX decular surface films on production dei from bubbled sea water 13 p2099 N68-23753 crystal growth kinetics in mixed d product removal cooling crystal-13 p2024 N68-24281 ation, and growth rate of gallium and without defects 16 p2679 N68-27420 tion effects on nucleation of super-h and tin 16 p2682 N68-27822 olycondemation to study reaction or production in polymerization of polycrystal state 17 p2838 N68-28546 experiments and homogenous ling supersonic flow 17 p2871 N68-28752 ration in helium saturated with on cloud chamber, and nucleation copic drop residues 17 p2872 N68-28924 lated to crystal growth and suspen-le range of supersaturation 18 p3122 N68-29679 nism and dissolution theory of su-and silver iodide mixed smoke 2) 18 p3023 N68-30170 rowth of iron and vanadium thin olymorphic transformation using 18 p3153 N68-30196 and growth, and nucleation ob-iffraction and microscope in for-films during vacuum deposition on 18 p3155 N68-30592 ge nucleation, and screw disloca-wn from Po 18 p3156 N68-30846 fication, and crystallography of lied by X ray and metallographic 19 p3290 N68-31085 on on mechanical properties of 19 p3297 N68-31115 evin ions in water supersaturated electrostatic and thermodynamic termine minimum size of conden-19 p3266 N68-31829 ne condensation nuclei measure-20 p3518 N68-32304 stallization in glass system of bari-20 p3510 N68-32736 leation phenomena in gas dynam-20 p3462 N68-32810 m of boron triiodide on or deposition 21 p3649 N68-33956 of lithium in silicon 21 p3650 N68-34029 on on various studies of nuclealar space 21 p3772 N68-34492 oy spinodal decom-n boundary nucleation 22 p3888 N68-35070 22 p3915 N68-35085 wth of nickel and palladium 23 p4009 N68-36502 idal gold crystal from solution by

Reactinuclei
Funda and nuclei [IC-66-1 Form (spring an

24 p4328 N6B-37485

14 p2302 N68-24424

17 p2823 N68-29143

electromagnetic correction of pion-nucleon forward scat [JINR-P2-3670]

Anatomical relationship of cerebellum to vestibular nuclear complex, and cytological features of nuclei in vestibular and fastigial regions Collectering

Protos
weight se

RDL-YB-47-125]

Dynamic analysis of a disorted to nuclear weap 06 p0857 N68-15292

nic equipment cabinet locad shock 14 µ2366 Ne8-25535

SUBJECT INDEX NUCLEI (NUCLEAR PHYSICS)
NT ALPHA PARTICLES
NT DEUTERONS
NT EVEN-EVEN NUCLEI
NT HEAVY NUCLEI
NT HYPERNUCLEI
NT TRITONS PRINCIPALITY Iterative solution of Hartree-Fock equations for 01 p0108 N68-10489 Energy estimation in collisions of very high energy pions with nuclei of photographic emulsion [INR-828/VI/PH] 02 p0245 N68-11443 Fragmentations of cosmic ray nuclei without particle INR-792/VI/PH 02 p0245 N68-11445 Neutron-proton correlations in light nuclei [JINR-P4-3431] 02 p0245 N68-11480 Calculating T-odd angular correlations at cascade nission of two mixed gamma-quanta by polarized INP-169511 02 p0247 N68-11577 tation of fission of nuclei at low energies 02 p0248 N68-11600 Direct exci Sum rules for inclu atic electron scattering from 03 p0389 N68-12373 [INP-566/PL] ements between nuclear INP-167951 03 p0393 N68-12545 Slow neutrons and high energy protons used to study scleus, X ray diffraction, and theory of neutron scattering from liquids [BNL-50059/T-462/] 05 p0704 N68-13971 Sign of mass differe stermined for neutral K [UCSD-10P10-104] 05 p0707 N68-14204

EX

753

281

120

822

ion of

546

ous

752 vith

924

679

suoke

170

thin

196

obfor-

592

ca-

846

085

of

115

sted

829

ure-

304

736

810

OR

956

029

lea-

492

070

085

502

n by

-

434

ular ei in

1143

(UCSD-10P10-104) 05 p0707 NR8-1-8-009
Mass and spectroscopic measurements of complete isospin quartets in light nuclei
(UCRL-17783) 05 p0708 N68-14220
Energy of indirect quadrupole-quadrupole suclei interactions with metal conduction electrom
(NASA-TT-F-11420) 05 p0730 N68-14876
Broken 078/ symmetry and mass relations for nuclei
(TH/230) 06 p0887 N68-16082
FORTRAN computer program for cross sections, and particle emission snalysis in nucleon-nucleus colli-

and particle emission analysis in nucleon-nucleus collisions [NASA-CR-93127] 07 p1054 N68-17100 Cascade calculations of fast particle interactions with nuclei [JINR-P2-3562] 09 p1387 N68-18569 Low energy /d.p/ reactions on light nuclei studied by plane, distorted, and Coulomb wave Born approxima-

[CEA-R-3305] 09 p1393 N68-19031 Energy levels of nuclei, formalisms for nuclear reactions and models, isotopic targets, and lithium drifted detectors [COO-535-571] 09 p1394 N68-19056

NEARREV 2 computer code for statistically analyzing compound nucleus decay [NAA-SR-MEMO-12530] 09 p1394 N68-19177 [Interaction of fast neutrons with oriented holmium

Spin quadrupole forces and collective states in deformed sucles effects on transition probability [JINR-E4-3134] 10 g/352 N68-19386

Diffraction techniques for determination of stripping and pickup reactions on deformed nuclei [JINR.74-3447] pp. 1915-3. N68-19648
Mathematical model to represent physical picture of nuclear interactions in atomic nuclei

10 p1565 N68-19727 Reaction matrix as residual interaction operator in nuclei 10 p1565 N68-19728

Fundamental review of dynamic behavior of nuclei and nuclear n-body problem
[1C-66-110]
Form factors of three body nuclei and Coulomb scattering and prion form factor

Modes of motion of odd-mass spherical nuclei [2 p1918 N66-21853

Collective states of nuclei by inelastic electron scattering 12 p1924 N68-22207 Proton-induced reactions on light and medium

Proton-induced reactions on light and medium veight nuclei, and nuclear reactions effect on efficiency of germanium and silicon detectors of grotons [USC-136-132] 12 p1927 N68-22404

Double charge exchange scattering of positive pinesons on complex nuclei [PPAD-4337] : 12 p1928 N68-22438 N-forbidden beta transitions in odd mass rare earth nuclei for approximating finite diffused potential [JINR-P4-7650] 12 p1930 N68-22588

Cluster model of atomic nucleus for helium, beryllium and lithium inotopes [BMWF-F88.47-41] 12 p1931 N68-22592 Electromagnetic transitions in nitrogen 15 and ox-

yeen 15 mechai JINR-P4-3684] 12 p1937 N68-22794 Stripping reaction for spherical and deformed nuclei of lithum [JINR-E4-3624] 12 p1938 N68-22799

Measurements of magnetic dipole moments of stable suclei with stomic beam magnetic resonance method [BMWF-FBK-67-80] 12 p1879 NoB-22937 intramelear cancalle with many particle interactions [JINR-P2-3604] 12 p1942 NoB-22945

Nuclear potential energy dependence on quadrupole and octupole deformation for nuclei [JINR-E4-3629] 13 p2112 N68-23048 Monte Curlo method for calculating implettic cells.

ions of deuterons with nuclei [NASA-TT-F-11674] 13 p2116 N68-23511 Isospin and number-conserving treatment of pairing correlations in nuclei

(IPNO/TH-110) 13 p2118 N68-23708 Core particle models of nucei consisting of excited core with extra particle 14 p2309 N68-24906

Collective effects in spherical nuclei, parity deformation, theory of direct reactions, and alpha nucleus potential (NF-17228) 15 p2513 N68-25749 Elementary particle and nuclear approximation in

odd mass nuclei
15 p2515 N68-25991
Summary information on cross sections of neutron

Summary information on cross sections of neutron induced and charged particle induced reactions, neutron cross sections of isotopes, and development of windowless gas target chamber (ORO-1067-2) 15 p2524 N68-26697

Neutron proton surface delta interaction in spherical odd mass nuclei [SGAE-PH-64/1968] 16 p2723 N68-27740 [Equilibrium deformation of ground and excited

Equilibrium deformation of ground and excited tates of strongly deformed nuclei [JNR-E4-3703] 16 p2726 N68-27952

Spectrometer determination of excitation of suclei [JINR-E4-3742] 16 p2727 N68-27980 Tabulated data of Q values for three particle reactions on nuclei hydrogen-2 isotope to calcium-48

isotope (BMWF-FBK-67-91) 16 p2730 N68-28118 Nucleus levels neutron width effect on variability in lotal neutron cross sections for 20 elements 17 p2923 N68-28389

17 p2923 N68-28389
Kinetic energy spectra and wave functions to connect individual and collective particle features of sucket during deformation for two body interactions
17 p2924 N68-28436

Two and four quasiparticle Tamm-Dancoff theories of vibrational states of medium-heavy mediu with unfilled shells of both neutrons and protons [IC-67-32] 7 p.29.29 N66-28769

[IC-67-32] To p2929 N66-28769
Quantum numbers and mechanics, kets in Wigner theory, and matrices for nuclear potentials (INP-17357) To p2940 N68-29290
Comparative study of angular distributions of /d, He

Comparative study of angular distributions of /d, He 3/ and /d, U [LYCEN-6789] 17 p2940 N68-29292 General Electric condensation nuclei counter used

[LYCEN-6789] 17 p3940 N48-29292 General Electric condensation nuclei counter used for monitoring concentrations of suffer dioxide and certain hydrocarbons 17 p2889 N48-29342

Nuclear energy levels of asymmetric even nuclei from rotations and bets and gamma quadrupole vibrations

[CNEA-207] 17 p2941 N68-29441 Bibliography on photo and electronucleur disintegration of model [NRL-BIBL.-31] 18 p3139 N68-30798

Feynmen techniques of quantum electrodynamics used to develop theory of interaction of Mandhouspamma rays with crystals containing resonant nuclai. 19 p.3346 Ndb-30046

Proton scattering from heavy rotational and vibrational nuclei 19 p3321 N68-30836

Phase shift, single particle resonances, and Hartree-Fock spectra of oxygen 16 and calcium 16 model [IPNOTTH-118] 19 p.3327 N68-31206

Two body correlation effect on elastic electron scattering in lithium and oxygen sactei [ISS-68/10] 19 p.3330 N68-31402

Expansion cloud chamber technique for absolute Alken nuclei counting 19 p3336 N68-31429

Thermodynamic behavior of condensation nucleus counter

19 p3277 N68-31474

Theoretical investigation of high energy interaction of deuteron with nucleus.
[ORNL-TR-1907] 19 p3331 N68-31571

[OUCL-18-1907] IV p3331 New-31374 Mathematical expression for eigenvalues of residual interactions in degenerate model of spherical macking INP-17478 IV p3336 NeW-31966 (mili-

Production of charged pions in neutron-nuclei collinions [ORNL-TR-1924] 20 p3545 N68-32954

[ORINL-TR-1924] 20 p3343 Neb-32924 Estimation of four-acomentum transfer and effective mass in coherent interactions of 200 GeV pisses with emulsion sucker (REPT-484/VPPH) 20 p3549 Neb-33295

[REPT.-888/VI/PH] 20 p.3549 Net6-33295 Analytical representation of nucleon and pion emission spectra from nucleon-nucleus collisions in energy range 730-2000 MeV [NASA-CR-96371] 20 p.3550 Net8-33376

Scattering of belium 3 ions from medium weight nuclei at 37.7 MeV and 43.7 MeV 21 p3734 N68-33747

lisotopic composition of low-energy hydrogen and helium nuclei in primary cosmic radiation 21 p3760 N68-33779

Particle-hole model for electroescitation and muon capture in light suclei

Successive particle emmission calculated for highly excited nuclei with large angular momentum [JINR-P4-3814] 21 p3744 1968-34641 Coherent production of multipion final states in pion

Coherent production of multipion final states in pine interactions with nuclei 22 p.3924 N68-34993

Nuclei pairing interactions solved through iteration of number conserving equations at ground date [TH/68/24] 22 p.3931 N68-35550

[TH/68/24] 22 p3931 N68-35350 Nuclear interactions between nucleans of energies higher than 10 eV-12 and emulsion such (CBNL-TR-1956) 22 p3931 N68-35377

Atomic energy levels determined from mechan fusion excitation states, and investigation of old A mecha resultion states (NYO-3938-1) 22 p.3933 N68-35742 Effective interactions in suclei and two nucleon sca-

tering (UR-775-234) 22 p.3933 N68-35761
Quantiparticle interactions with phonous in deformed nuclei at varying atomic energy levels (JINR-P4-3903) 22 p.3936 N68-35853

[JINR-P4-3903] 22 p3936 N66-35853 Coupled-channel Schrodinger equation model for neutron-alpha deuteron-triton scattering 23 p4/15 N66-36309

Nuclear structure, and spin and parity aniguments of various nuclei 23 p4117 N68-36578

| Discrepands |

[UCRL-17854] 23 p4122 Nda-34654 Probabilities of E hands remailines and bets decay in odd most rare texth model [JINR-P4-5935] 23 p4127 Nda-37003

[UR-NSRL-4] 23 p4132 N68-37177

Summary papers on nucleus reactions in light nuclei and Monshauer offect studies [NYO-2020-2] 23 p4133 NAS-27193 Residual interactions in name 15 and 17 nuclei.

Presidual interactions in mass 15 and 17 mobils 24 p4306 1980-37548

Double charge exchange controling of positive plan mesons on complex suchs 24 p4408 1980-37548

Gamma my spectra from medical common by milkmechal crombins mechal and iron mechal [NIJS-R-329] 24 p4321 NER-38335

NT RIBONUCLEIC ACIDS

Dischanical studies on marks acids, purhain metabolisms, bacteriaphages, and related impire (NASA-CR-90308) 02 p0164 Nath-1 1035

10 p1564 N68-19718

SUL

N

of us radia [AN

Ex

ORI

ICEA

Dist

SU/

Cro

Electer of qual

Lore yield or IC-68-

tions, fr

Furth

COUPLIN

nucleon [KFKI-5

Quant in light a [LNF-6]

Mass

ical and enzymological approaches to nzymes and nucleic acids 1672] 05 p0608 N68-13980 evolution of enzymes and mi [NASA-CR-91672] (PUC-937-314) Role of growth st s and nucleic acids on action mechanism of phytochrome [NIC-TRANS-2317] 09 p1278 N68-18433 cleotide coenzymes by rotary dispersion and [NASA-CR-93963] 11 p1635 N68-21139 es of proteins and nucleic 14 p2202 N68-25178 Intercranial pressure pulse waves during acceleration stresses up to 40 g and metabolic processes in biosynthesis of proteins and nucleic acids [FTD-MT-24-244-67] 21 p3635 N68-34176 ssynthesis of proteins and 21 p3635 N68-34177 NUCLEOGENESIS Nucleogenesis theories on stellar and galactic cosmic rays and meteorites, and high energy nucleosynthesis 19 p3323 N68-31025 NUCLEON-NUCLEON INTERACTIONS ucleon interaction models
01 p0115 N68-10878 ucleon interaction affecting partial-02 p0249 N68-11707 (ISS-67/25) Elastic electron scattering from nuclei and nucleon-03 p0390 N68-12387 Contribution to optical model study by measuring 03 p0396 N68-12639 Nucleon-nucleon interactions analyzed by means of hotoemulsions, and nucleon excitation REPT.-813/6/PH] 04 p0546 N68-12852 del for determining average nucleon-nucleon interactions 05 p0708 N68-14227 Nucleon-nucleon spin orbit potential from cluster model calculations on light nuclei (BMWF-FBK-67-69) 05 p0708 N68-14237 Monte Carlo analysis of nucleon-nucleus interac-tions at high and superhigh energies [JINR-P2-3508] 05 p0717 N68-14709 X-representation of musuperfluidic nuclear mathe [JINR-P4-3505] eon-nucleon interaction in natical model 05 p0719 N68-14813 Method for sampling in neutron-neutron interaction (JINR-P2-3561) elastic pion-neutron and 09 p1387 N68-18573 Model that describes fireballs or asymmetric events nucleon interactions 10 p1565 N68-19720 Spin dependent effects on differential cross sections of polarizations of /alpha, nucleon/reaction 10 p1567 N68-19878 Fundamental review of dyn and nuclear n-body problem [IC-66-110] mic behavior of nuclei 10 p1571 N68-20528 Mathematical model for sta perties of N-nucleon system in NDL-TR-101 } nary and dynamic pron in peripheral nucleus remulsion Excited baryon production nucleus interactions in nuclear e [INR-P-816/VI/PH] 12 p1937 N68-22789 Mathematical model for attractive and repulsive potentials in two nucleon system 13 p2117 N68-23612 Effects of two-particle spin-orbit nucleon-nucleon teractions on oxygen 16 and nitrogen 16 nuclei 14 p2315 N68-25228 14 p2320 N68-25584 Conservation law effects on elementary particle in-teractions, and intranuclear cascade calculations [JINR-P4-3714] 15 p2519 N68-26391 ic stoms for lead, calci-cleon interactions 15 p2520 N68-26457 Nuclear polarization in m um, and uranium by nucleon [PUC-937-291] Decay rate and fragments for baryon non-conserving action decay testing law of baryon conservation 17 p2923 N68-28388

ns in meson field theory used n pion-nucleon interactions 18 p3137 N68-30700 Proton-proton and proton-neutron final state in-teractions studied with Rice University Van de Graaff n 3-tritium and belium 3-b [UCRL-18263] UCR1-504261 Hartree-Fock calcula [IC-68-30] NUCLEON-NUCLEON SCATTERING INP-567/PL/PH] Lecture on theory of an igh energy nucleons on I (BNL-11722) Phase shift and (JINR-P1-3525) scattering at large angles [ITEF-477] Nucleon and electron a Phase shift analysis as nucleon scattering [AFOSR-68-0519] Phase shift of a (JINR-E1-3707) Amplitude of elastic mi isotopic spin [JINR-P1-3702] Alpha-alpha scatte case of nonlocal facto [JINR-P4-3717] crystals [JINR-E1-3708] [LYCEN-6801] (UR-875-234)

19 p3324 N68-31048 Calculations of three nucleon low energy parameters 19 p3335 N68-31906 Elastic electron scattering form factor for helium 4 and nucleon-nucleon correlations [LNF-68/27] 19 p3337 N68-32176 19 p3337 N68-32176 Calculated parity violating nucleon-nucleon poten-tial due to pion exchange 21 p3737 N68-34015 helium 3 reactions 21 p3741 N68-34343 21 p3741 N68-34376 Reaction channel separation of neutron-proton in-teractions produced during neutron irradiation of bub-ble chambers [JINR-P1-3881] 23 p4125 N68-36949 23 p4125 N68-36949 es for light nuclei 23 p4130 N68-37112 03 p0391 N68-12481 High energy nucleon-nucleon scattering with large nomentum transfer and chiral SU/2/ x SU/2/ symmetry all angle elastic scattering of ht weight nuclei 05 p0715 N68-14590 Multiple particle scattering of nucleons in nucleus [JINR-P2-3546] 07 p1048 N68-16686 oncleon scattering 07 p1049 N68-16706 09 p1388 N68-18604 rring from light nuclei 10 p1565 N68-19723 Nucleon-nucleon scattering at intermediate energies and polarization characteristics [UCRL-17408, REV.] 12 p1927 N68-22386 exchange potentials and Born approximation 13 p2112 N68-23073 13 p2113 N68-23144 on scattering at 400 14 p2303 N68-24639 leon scattering in 14 p2304 N68-24645 14 p2319 N68-25497 Polarization experiments of T and CPT invariance test in nucleon-nucleon and nucleon-antinucleon scat-16 p2726 N68-27954 Elastic scattering of high energy protons on various 16 p2727 N68-27981 17 p2933 N68-29030 22 p3923 N68-34990 22 p3933 N68-35761

Hartree-Fock approximation for isotope shift due to ucleon-nucleon interactions

18 p3134 N68-30469

Bremsstrahlung by nucleon collisions in low approximation [JINR-P2-3830] 22 p3934 N68-35803 Energy graphs for real part of elastic pion nucleon and nucleon-nucleon scattering amplitude
[JINR-P2-3850] 22 p3935 N68-35832 ng amplitude 22 p3935 N68-35832 Research programs and nucreus and sucreus and sucre vestigations with [ORO-3398-12] Velocity dependent ran scleon scattering analyses m potential for nucleon 23 p4136 N68-37351 Pion absorption in rescattering effect of lithium-heli-m reaction [KG-I] 24 p4314 N68-37847 NUCLEON POTENTIAL 09 p1394 N68-19135 Heavy nucleon isobars in high multiplicity inelastic

10 p1565 N68-19725 hematical model for attractive and repulsive ials in two nucleon system 13 p2117 N68-23612 Proton-proton bremsstrahlung cross section calcula-ons for investigation of shell behavior of nucleon

17 p2927 N68-28637 Energy spectrum of tin 116 and effective nuclear forces derived from realistic nucleon-nucleon potentials of Yale and Tabakin [IC-68-4] 17 p2928 N68-28646 Calculated parity violating nucleon-nucleon poten-tial due to pion exchange

21 p3737 N68-34015 Green functions used to develop formula for T matrix of inelastic nucleon scattering on nonlinear nuclei

23 p4125 N68-36968 Two and four quasi-particle Tamm-Dancoff theories of vibrational states applied to even tin isotopes with realistic nucleon-nucleon potential [IC-68-29] 23 p4128 N68-37029 Self consistent approach to effective nuclear force of salistic nucleon-nucleon potential

23 p4128 N68-37030 Approximation method for nucleon transfer reactions, and spectroscopic analysis [CEA-R-3574] 23 p4129 N68-37069

One-neutron transfer reactions in even and odd tinotopes and realistic nucleon-nucleon potential C-68-33] 23 p4130 N68-37089 [IC-68-33]

Nonleptonic weak interactions and infinite com-ponent wave equations [COO-1428-28] 01 p0102 N68-10138 01 p0102 N68-10138 Numerical bound-state solutions to pion-nucleon Bethe-Salpeter equations [UCRL-17671] 02 p0244 N68-11391 Uz p0244 N68-11391 isotopic spin state as series of K-harmonics [NP-16946]

Contributions from scalar mesons in derivation of nucleon axial vector form factor [TR-736] 02 p0250 N68-11888 Intermediate bosons produced in proton-nucleon 03 p0392 N68-12510 ering cross section ob-

Proton-sucleon el tained in TeV region (INR-802/VI/PH) 03 p0393 N68-12561 Primary cosmic radia and nucleon component sounding balloon data [REPT.-2/1959]

04 p0503 N68-13624 nd nucleon isobars on [SAO-SR-259] 04 p0571 N68-13780 Spectra and angular distributions,d/ two-nucleon stripping ions for /He-3,p/ and eactions on carbon 12

05 p0707 N68-14207 Model for low energy kaon-ni of p0883 N68-15182

Cross section experiments, pion and kaon produc-tion, and nucleon and hyperon excitation related to haryon resonances 06 p0885 N68-15853

A-844

Energy spectrum of tin 116 and effective nuclear locus derived from realistic nucleon-nucleon poten-ials of Yale and Tabakin 17 u2028 M48.28646

SURJECT INDEX FORTRAN computer program for cross sections, and particle emission analysis in nucleon-nucleus collisions [NASA-CR-93127] Nucleon interactions and emulsion nuclei in large emulsion stacks [INR-813/VI/PH] 07 p1054 N68-17121 Fermion trajectory interference, and exchange mechanisms in backward pion-nucleon scattering [TH/236] 09 p1389 N68-18621 Pion S wave model for calculating nucleon-nucleon phase shift IPNO/TH-88] Theoretical interpretation for photoproduction of single pseudoscalar mesons on nucleons [NP-17221] 11 p1754 N68-21131 Finite energy sum rules and crossover problem in kaon-nucleon scattering Unitary impulse approximation method applied to pion-mucleon collisions Nucleon Born computation for gradient coupling and exchange in low energy pion-nucleon scattering [EFINS-67-98] 12 p1926 N68-22365 Energy dependence of angular aninotropy of fission of uranium 233, uranium 235, and plutonium 239 irradiated with neutrona [ANL-TRANS-50] 12 p1927 N68-22375 Expressions for describing pion-nucleon differential scattering cross sections in terms of Coulomb scattering amplitude, Coulomb phase shifts, and nuclear phase shifts ORNL-41971 Asymptotic equality of cross sections of neutrino and antineutrino interaction with nucleon [JINR-P2-3647] 13 p2119 N68-23757 Dispersion equations for nucleon-deuteron vortices
13 p2121 N68-24059 Relation between nucleon clustering and quantum number of shall model wave function Nuclear isobar model of Compton effect photon scattering by nucleons 14 p2308 N68-24891 Angular distributions, recoil proton polarizations, and total cross sections for pi-nucleon elastic scattering [CEA-R-3401] [JINR-E2-3715]

07 p1054 N68-17100

10 p1562 N68-19557

11 p1755 N68-21266

12 p1919 N68-22003

12 p1933 N68-22658

tion 13 p2121 N68-24060

14 p2313 N68-25132

16 p2718 N68-27079

17 p2928 N68-28661

EX

2003

leon

5832

in-

5976

7351

heli-

7847

135

astic

9718 , in-

2725

laive

3612

cula-

8637

clear oten-

8646

oten-

4013 or T

ories with

3624

n on

3780

and in 12

4207

5182

ed to 5853

7029 ce of Distribution changes of meson and nucleon com-onents of cosmic rays and solar activity 14 p2341 N68-25550 7030 reac-SU/3/ crossing relation for meson-baryon scattering and Regge pole theory [TUEP-68-6] 15 p2513 NAS-25P06 7069 d tin Cross section sum rules test for nucleon magnetic 7089 15 p2520 N68-26448 Electromagnetic form factors of nucleons in model of quasi-independent quarks [ITF-67-52] 15 p2522 N68-26541 com-0138 One channel static model of pion-nucleon scattering amplitude cleon 1391 Low energy interactions of kaon nucleon system 16 p2719 N68-27143 and 16 p.2719 N68-27143
Summary of studies on Monte Carlo method for succieon transport through dense matter
[NASA-CR-83623] 16 p.2722 N68-27561
Radiative correction to high energy elastic neutrinonucleon scattering by technique developed for correcting electron scattering 1547 on of 1888 leon 2510 Lorentz pole analysis of high energy reaction piN yield omega N3/2 [IC-68-7] do e 2561 Nucleon correlations in helium, using wave func-tions, from elastic electron scattering [LAL-1191] 17 p2932 N68-28939

Further analysis of nucleon rho meson and nucleon omega meson quasi two body reactions by high energy positive pion mesons on protons 17 = 2044 M48 20403 17 p2944 N68-29493 Forward scuttering dispersion and cross sections, and coupling coefficients for K-meson nucleon system [AECD/TP-22] 19 p3327 N68-31206 (AECD/TP-22)
Mass formula in broken SC/2/C/ and application to nucleon and delta Regge trajectories
[KFKI-5/1968]
19 p3328 N68-31210 Quasi-elastic electron scattering on nucleons bound in light nuclei [LNF-68/29] 19 p3331 N68-31573

Symmetry breaking of chiral SU/3/XSU/3/ and kaon-nucleon scattering lengths [RIFP-73] 20 p3542 N68-32402 20 p3542 N68-32402 Quark model superconductivity and nucleon [JINR-P2-3819] 20 p3547 N68-33064 Analytical representation of nucleon and pion emission spectra from nucleon-nucleus collisions in energy range 750-2000 MeV [NASA-CR-96371] 20 p3550 N68-33376 Finite energy sum rules and crossover problem in kaon-nucleon elastic scattering [NP-17490] 20 p3551 N68-33492 Pion production and pion mu leon scattering 21 p3736 N68-33893 Nuclear interactions between nucleons of energies higher than 10 eV-12 and emulsion nuclei [ORNL-TR-1956] 22 p3931 N66-35577 dels for predicting resonances and pion-nucleon interactions 23 p4111 N68-36036 Dyson-Salam renormalization approach applied to meson scattering theory and pseudoscalar pion-nucleon theory 23 p4112 N68-36101 Quantitative features for two nucleon transfer reac-(UCRL-18225) 23 p4114 N68-36229 Knon-nucleon total cross sections [RPP/H-31] 23 p4121 N68-36825 Classification of Regge trajectories according to broken SL/2.C/ algebra [KFKI-1/1968] 23 p4122 N68-36846 Experiments for measuring full cross sections of in-peraction between elementary particles and nucleons a superhigh energy accelerators 24 p4319 N68-38186 NUCLEOSIDES

NT ADENINES

NT ADENOSINE DIPHOSPHATE (ADP)

NT ADENOSINE TRIPHOSPHATE (ATP) Temperature dependent properties of dinucleoside phosphates [UCRL-17966] II p1648 N68-20945 Absorption of pyrimidines, purises, and sucleosides by copper, sickel, cobalt, and iron montmoralionite [NASA-CR-89255] 21 p3649 N68-33906 NUCLEOSYNTHESIS NUCLEOTIDES
NT ADENINES
NT ADENINES
NT ADENOSINE DIPHOSPHATE [ADP]
NT ADENOSINE TRIPHOSPHATE [ATP]
NT PYRIDINE NUCLEOTIDES Radiation effects on free nucleotides in yeast after amma irradiation [SGAE-BL-22/1967] . 01 p0014 N68-10993 Biological macromolecules and kinetics of biopolymer formation with and without templates, and sequence structure in polynucleotides [AD-662276] 06 p0887 N68-16016 Optical properties, fit spectra of reduced nicotin [NASA-CR-94931] prescence, and absorption mide adenine dinucleotide 15 p2392 N68-25944 Cation and anion requirements of nicotinamide adenine dinucleotide hydrochloride oxidane in extracts from an extreme halophile [NASA-TM-X-6026] 15 p2398 N68-26839 Solutions of time-dependent differential equations for tastomeric interconversion in A-T and G-C base pairs of DNA [UCRL-50412] 24 p4205 N68-38367 CUCRL-50412] 24 p4205 N68-38367

NUCLIDES
NT AMERICIUM ISOTOPES
NT AMERICIUM 241
NT ARGON ISOTOPES
NT BERYLLIUM 7
NT BERYLLIUM 9
NT BERYLLIUM 9
NT BERYLLIUM 19
NT BERYLLIUM 10
NT BERYLLIUM ISOTOPES
NT BORON 10
NT BORON 10
NT BROMINE BOTOPES
NT CALDIUM ISOTOPES
NT CALCIUM ISOTOPES
NT CALBON 101
NT CARBON 12
NT CARBON 13
NT CARBON 13
NT CARBON 14
NT CESIUM ISOTOPES
NT CESIUM ISOTOPES
NT CALBON 114
NT CESIUM ISOTOPES

NT CESIUM 137
NT COBALT BOTOPES
NT COBALT 60
NT CURIUM BOTOPES
NT CURIUM 242
NT DEUTERIUM
NT DYSPROSIUM ISOTOPES
NT ERBIUM ISOTOPES
NT GOLD 196
NT HELIUM 3
NT HELIUM 3
NT HYDROGEN ISOTOPES
NT HOLDIN ISOTOPES
NT HYDROGEN A
NT HON SOTOPES
NT IRON 57
NT IRON 57
NT IRON 59
NT IRON 59
NT ISOTOPES I IODINE 131
I IRON SOTOPES
I IRON 57
I IRON 5 Extraction photometric tech extred nuclides and determina [JAERI-1148] 01 p0027 N66-10965 Fortran code for spherical optical model used in nalysis of light and intermediate weight paclides scattering [NAA-SR-MEMO-12531] 05 p0699 Net-14260 Counterpy muclife production in netterrites and on [NYO-844-72] 05 p0714 N63-14515 Production and release rat-um oxide fuel elements (RT/FIMA/67/2) ne for muchides from urani-07 p1032 N66-17037 Gamma ray spectrometers for anny of complex mi-tures of low concentration of radiomedidas in biologi-cal materials [UCRL-70544] 06 p1176 N68-17379 Least squares method of analysis of growth decay counting data and time dependent gamma ray pathogist special data obtained from mixtures of generally related mechanics (USNRDL-TR-64-5) 10 p1493 1468-20452

SUI

fer str [A

soli tios (T)

ort

hyp (ES)

CTO

Foradii [NA

Li

stabi

N

ters (

of up

Ba analy (VP-

N

RE

Nu fields circu

NA.

Lie

UCI

mosp

Tre proble soddi (RM-

Bia puter specif NAS

(EUR

The

Nu

arizations using local optiial with average param neters 12 p1930 N68-22561 [LA-3788] Standardization of modified efficiency to [PEL-162] ing nuclides using 18 p3140 N68-30851 ry nuclides 21 p3745 N68-34658 [UR-3591-9] distributions near isotropic point and plan rees in air and water for 37 nuclides calculate soenergetic electron dose distributions - table [AECL-2793] 23 p3999 N68-36760 Error detection on and error correction in null communication systems [TR-400-170] 11 p1662 N68-214e8 Goodness of fit with [AROD-4721-13-M] 24 p4278 N68-38274 NULL REFERENCE GLIDE PATH U GLIDE PATHS NULL ZONES Harmonic and null descriptions of gravitation radiation [AD-666049] 12 p1919 N68-21939 Neutron spectrum mo tching by null reactivity [RT/FI/67/30] 14 p2296 N68-25419 Null interference rejection for navigation system in reraft-satellite link [NASA-CR-86061] 17 p2911 N68-28570 NUMBER THEORY NT ADDITION THEOREM NT ARITHMETIC CONGRUENCES DIVIDING [MATHEMATICS] NT **EXPONENTS** INDUCTION [MATHEMATICS] INTEGERS MULTIPLICATION SUBTRACTION arch for simple groups of orders less than one mil-and construction of one new group group 03 p0359 N68-12207 [AD-660717] Asymptotic distribution inc numbers and associated ze of Beurling generalized d zeta function 03 p0360 N68-12287 TR-171 Daughter Regge trajectory tion of field theoretical model [TH/233] in Bethe-Salpeter equa-10 p1562 N68-19569 quence of numbers related to exponential function 10 p1545 N68-19670 Problems in partition th analysis, and number theory [AD-665400] ory, topology, asymptotic 11 p1721 N68-20613 cimal digit in scientific computing with IRM 360 co [RM-5496-PR] 11 p1732 N68-21555 Theory and prop for computers [REPT - 230] 12 p1846 N68-22373 Model theory and metamat matics of set theory 12 p1899 N68-22948 bers by polynominals etation of simple num 16 p2698 N68-27772 ications of mathematics in mechanical en-ng - boundary value problems, shear and defor-processes, mechanical properties of materials, and extend theory. 20 p3515 N68-33115 **CMBERS** g legibility of standard (AMRL-TR-67-116) 03 p0308 N68-12403 RICAL ANALYSIS
APPROXIMATION
BORN APPROXIMATION
BORN-OPPENHEIMER APPROXIMATION BORN-OPPENHEDMER APPROXICATIONS CHEBYSHEV APPROXIMATION DIFFERENCE EQUATIONS ERROR ANALYSIS FINITE DIFFERENCE THEORY HARTREE APPROXIMATION ITERATIVE SOLUTION ITERATIVE SOLUTION LEAST SQUARES METHOD MONTE CARLO METHOD NEWTON-RAPHSON METHOD NOMOGRAPHS
OSEEN APPROXIMATION PADE APPROXIMATION PADE APPROXIMATION NT NT MI

NT Computer prostates of deformer [JINR-P4-3326] for dynamic [MML-10] [AFOSR-67-1876] [INP-533/PL] Solution function [GDC-DHE67-12] with homogeneous [BNWL-SA-780] siender axisymmetric be [TR-0158/3240-10/-1] Forward eliminati and reconditioning diagonal matrices (GA-7164, PT. 1) (JINR-P2-3009) Direct and inverse pr via initial value methods [RM-5447-PR] tors with standing waves [FTD-MT-66-159] viscous flow [C7-2239/020]

NT RAYLEIGH-RITZ METHOD Approximate so tions for superson [DLR-FB-67-34] RATLEASH-RITE METHOD [MATHEMATICS]
RITZ AVERAGING METHOD
RUNGE-RUTTA METHOD
SCHWARTZ METHOD
SOMMERFELD APPROXIMATION
TRUNCATION ERRORS nd circular cylinder 04 p0436 N68-13458 Empirically derived appropriation with launch angle oximations for describing of sounding rocket per-04 p0583 N68-13586 dden-freezing criteria and n predicting nonequilibrium i fic impulse performance of n from balloon tracking 04 p0503 N68-13601 Blue Goose wind weighting n 01 p0147 N68-10116 04 p05u3 N68-13602 ter program for calculating single particle eformed nuclei Data reduction methods for analyzing meteorologi-il data gathered above 30 kilometers 01 p0104 N68-10359 eters 04 p0533 N68-13605 Numerical analysis of forced oscillations governed Duffing differential equation by Duffing differenti [ARC-R&M-3516] 01 p0142 N68-10486 04 p0545 N68-13676 Numerical analysis of electric current and potential ionless supersonic, and int bodies of revolution 05 p0601 N68-13910 Numerical analyses for friction opersonic gas flows around blue custributions in linear Faraday p [NASA-TN-D-4239] 01 p0128 N68-10502 Solving potential problems involving conductis solids of revolution, particularly right circular cylinder Approximate equations for gradient pressure, and in poros [AERE-R-5492] ns for capillary gas flow under porous media 05 p0647 N68-14080 01 p0099 N68-10639 Numerical solutions for syste linear partial differential equi chemical reaction and convec and hydrogen through graphite [K-1724] ms of ordinary and non-itions for simultaneous Calculation method for stray accelerator radiation fluxes of varying energies
[JINR-P9-3402] 01 p0112 N68-10751 Handbook containing of eference material for therm tion methods and mic properties of in 05 p0619 N68-14118 Transfer efficiencies of several diffusely reflecting dividual substances [FTD-HT-66-251, V. 1, PT. 3] [REPT.-292] 05 p0671 N68-14122 02 p0280 N68-11073 Attenuation and phase shift computations of elec-omagnetic waves in exhaust gas jet of ELDO launch thicle third stage Axial flow effects on [NASA-TM-X-54065] of wall constricted arc 02 p0251 N68-11083 [ERNO-AB-RTT-1/65/65] Computer program for spectrum analysis, for use ith Soviet computer 05 p0629 N68-14165 02 p0183 N68-11104 Compliance analysis of structurally orthotropic als of Fredholm integral equations shells [NASA-CR-91671] with displacement kernels [RM-5459-PR] 05 p0747 N68-14211 02 p0227 N68-11159 Numerical analysis of gas pro urning area during ignition to progen ignited solid propellan sure, temperature, and nsient in hypothetical Numerical solution of differential equations by linear programming techniques
[RT/FIMA/67/3] 03 p0357 N68-11914 pyrogen ignited sond [NASA-CR-91778] 03 p0357 N68-11914 05 p0732 N68-14368 Computer program and m Reynolds number flow over bi merical analysis of low int wedge with rearward Numerical calcula two center problem in quantum mechanics [SC-T-67-0952] 05 p0711 N68-14417 03 p0334 N68-11966 Optimal reactor control con utations with restraints Streamlines and density co from supersonic axisymmetric numerical methods [RAE-TR-67016] contours calculated for flow tric nozzles into vacuums by for nuclear rocket [SC-CR-67-2723] 05 p0694 N68-14432 03 p0336 N68-12198 Theoretical, and no rrical calculations on optimal is for structural analysis of nucleur rocket read [SC-CR-67-2746] 95 p0694 N68-14433 incompressible, three-dim layer separation on flat plate with half cone at incidence 03 p0421 N68-12296 nerical analysis of data from clean experiments omogeneous plutonium fueled assemblies (L-SA-780) 03 p0374 N68-12464 with half o 05 p0647 N68-14572 Numerical analysis of sextupoles effect in alternating Viscous interaction effects for hypersonic flow over BNL-117591 05 p0718 N68-14757 Numerical analysis of method for calculating three imensional supersonic flow fields 03 p0298 N68-12536 al analyses of collision hanomalous friction 03 p0402 N68-12562 Numerical and expe free compression of plas [CONF-661041-14] 05 p0649 N68-14964 Atmospheric refraction a traveling in gravitational field [ISL-T-44/66, PT. 3] analysis for shock wave 06 p0825 N68-15217 03 p0361 N68-12604 sonic gas jet impact Numerical analysis of two-center problem in quanagninut rigid surf [TG-230-T535] 06 p0825 N68-15293 03 p0397 N68-12720 using method of Selected problems of numerical analysis performed on electronic desk calculator for solving problems in-(AFCRL-67-0558) 06 p0833 N68-15340 Numerical calculat-ric functions, and m radiation from lunar s [NASA-CR-61481] ation of photomet-sodel for infrared [AFCRL-67-0392, PT. 1] 03 p0327 N68-12781 06 p0910 N68-15550 for integral equations odd integers 06 p0866 N68-15772 04 p0528 N68-13034 [P-3744] Numerical analysis of electron bunching in accelera-Numerical procedures calculating real fluid and t normal and parahydrogen [NASA-TN-D-4341] computer program for nodynamic properties of 04 p0547 N68-13040 06 p0812 N68-15798 Numerical stability analysis for two dimensi lving Dirichlet problems for quations in arbitrary two 04 p0493 N68-13110 Numerical analysis of axilated to magnetically protric are columns 06 p0866 N68-16030 d ares 04 p0553 N68-13173 related to magneti [RAF-TR-67076] Current and driving po nce computations er smooth, three dime Digital computer assisted cor flow of inviacid, reacting gas ov-sional body using method of cha [CAL-AM-1800-Y-4] for long resonant cylind [NASA-TM-X-63087] 07 p0961 N68-16295 Generalized Rayleigh th 04 p0495 N68-13303

EX

458

bing per-

586

king

601

602

605

676

and ion 910

080

118

ting

122

165

opic

211

368

417

432

433 lary

572

ting

757

964

217

293

of

340

550

772

for s of

for

030

ons

295

SUBJECT INDEX g convective motions in stratified layer [ARL-1515-2] 07 p1016 N68-16326 r set of linearized variable ations governing convective ed layer heated at base and 07 p1016 N68-16328 tion (TR-15) 07 p1089 N68-16408 crthogonal polyno [BRL-[380] 07 p1014 N68-16420 Numerical analysis of finite etic waves in model magne amplitude hydromag-tosphere with density (ISAS-417, V. 32, NO. 10) 07 p0991 N68-16471 Shock wave and viscous layer structure in raref hypersonic flow near leading edge of sharp flat plate [ISAS-418, V. 32, NO. 11]

Gravity gradient a [NASA-CR-93142] 07 p0991 N68-16571 Microwave research propagation, electronic optics, plasma physics, electromagnetic wave ment, field theory, laser onducting film, informaoptics, plasma physics, se tion theory, and computer [PIBMRI-R-452.32-67]

07 p0985 N68-16549

07 p0978 N68-16927 Approximation analysis for plane wave scattering oss section on dielectric apheres

07 p0965 N68-16934 Numerical error analysis for approximated band mited signals, and Hankel transforms 07 p0979 N68-16991

Feasibility of supporting liquid fuel on solid wall in radiating liquid core nuclear rocket concept [NASA-TN-D-4413] 07 p1072 N68-17093

Numerical analysis on negative plasma confinement by application of helical multipolar fields on toroidal magnetic field [IPPJ-61] 07 p1064 N68-17097

Method for computing flutter derivatives in aircraft ability and control based on exponential solution of tro-mechanical equations of motion 08 pl109 N68-17443

Liapunov functions and other numerical methods for stability analysis 08 p1208 N68-17509

Numerical method for calculating criticality parameters of two zone reflected reactor with flat central zone (IBK-466) 08 pl 205 N68-17661

Solution of large systems of linear equations with undratic or non-quadratic matrices and deconvolution

08 p1193 N68-17670 ster program for stress tropic wood slices 08 p1251 N68-17689 Numerical analysis overse scattering in elec-

tromagnetic fields. (REPT.-8579-2-O) 08 p1215 N68-17938 Numerical analysis of surface currents and near fields of infinite cylindrical dipole antennas excited at circumferential gape of non-zero thickness in a lossy

plasma medium NASA-CR-93357] 08 pl 149 N68-18036 onvergent iteration methods for outlied differential equations 08 p1194 N68-18045 Linearization, and numerical solution of [UCRL-17739]

Numerical study of nonlinear inversion applied to at-expheric temperature profiles 08 pl 198 N68-18110

ise effects upon perceived incisiness 09 p1286 N68-18329 Background noi [FAA-D8-67-22] Transformation of linear two point boundary value problem into initial value problem by invariant im-

(RM-5366-PR) 09 pl357 N68-18348 Black body radiatio puter and hand calc specified spectral range [NASA-TR-D-4446] merical solution for com-

09 p1359 N68-18455 dependent neutron dif-Numerical solu

fusion equations (EUR-3742.E) 09 p1387 N68-18496 Theoretical and numerical digital tracking filters with appl [IDA/HQ-67-6715] al design considerations for opplication to radar 09 p1303 N68-18618 Thermal stability of reactor feel rode in narrow annular coolant channel
[AERE-R-3601] 09 p1376 N68-1889 09 p1376 N68-18897

s for computing gase-in successful cabin at-09 p1289 N68-18919

mmary of studies on guidance techniques and con-quipment, spacecraft computers, and mathemati-nethods for optimal control of spacecraft and INASA-TM-X-537091 09 p1423 N68-18983

09 p1311 N68-18986 al unalysis by spacecraft

09 p1372 N68-18988 nd for ducted ship propellers

09 p1415 N68-19148 es for Mayrer classical and ectory optimization 09 p1426 N68-19315 Three numerical non-classical probl (NASA-CR-1012)

d rain erosion test pro-09 p1356 N68-19420

Numerical solution of radiative heat transfer equa-[TR-67-55] 09 p1452 N68-19465

c components of steady uniform of motion 09 p1322 N68-19474 Characteristics of harmoniate solution of differential ec ts by polynomials for

Strip, and block adju-synthetic aerial triangulat [PB-176461] togrammetry 10 p1527 N68-19519 Numerical analysis of continuous rectangular plate systems using slope deflection equations and finite difference method

10 m1602 N68-19643 shined hydrodynamic and shells [NASA-CR-92023] 10 p1603 N68-19699

Analytical and numerical solutions of partial dif-trential equations for effect of viscosity on transmic [AROD-3537-5-E] 10 p1455 N68-19732

Numerical analysis of st response to water impact load [NASA-CR-92024] c, and dynamic shell 10 p1604 N68-19867

[AD-665015] le earthquake data 10 p1522 N68-19989 sollo water impact data with scale model exp INASA-CR-92022 10 p1605 N68-19994

Numerical analysis frequencies in Apollo wa [NASA-CR-92025] ceal modes and ict 10 p1606 N68-20069

compressible, luminar 10 p1516 N68-20200

umerical analysis of planar omplementary potential en es loaded normally 10 p1608 N68-20235

ad approximation techniques external electric field 10 p1574 N68-20289 for plasma oscillatio [ENR-829/XXI/PP] orial and polar orbits

Numerical and suitable for teleco [NLR-G.35] 0 p1597 N68-20415 Numerical and liquid filled shells [BRL-MR-1892] yeis of flight stabi

10 p1609 N68-20470 Numerical analysis of a variations based on satelli [RAE-TR-67171] is of upper atmospheric air density satellite 1966-101G orbit changes 10 p1525 N68-20500

FORTRAN 4 co yais of temperature distri sion through conical dist

11 p1702 N68-20605 or analyzing bou

11 p1723 N68-20643 nerical method for a flow problems appli-mal convection

11 p1801 N68-20 ting natural frequency (SAMSO-TR-68-37) 11 p1792 N68-20727

(MRC-TSR-408) 16 - 11 m1726 N68-20820 Point eleve

11 p1780 N68-20966 rical analysis fo I deflections in wel [ORNL-TM-1990]

11 p1795 N63-21163

[RR-56-8] 11 p1795 N68-21164 termine interference effects laturn 5 launcher umbilica

INASA-CR-611981 11 p1709 166-21296

BEPT 451 11 p1730 NAS-21312 ectromagnetic acuttering ty distributions for long

ITN-1967-551 11 pi661 N64-21333

(NASA-CR-1025) 11 p1747 N68-21444

MRC-TSR-729 11 p1731 N68-21466

MRC-TSR-754] 11 p1731 N68-21491 intion /1900 to 1965/ 11 p1692 N68-21543 Geomagnetic field: [NASA-TN-D-4527]

[NASA-CR-94140] 11 p1786 N48-21710 11 p1786 Man-21710 afrared rediation from element above surface 11 p1780 Men-21731 tem of motion for ejec-NASA-TM-X-15671

Centered di for experient exhibition forcestal equations for scharging from taken 12 p.1358 Non-22043

12 p1860 N68-22169

12 p1940 N68-22182

Keplerian orbits (NASA-TT-F-11590) 12 p1906 NGB-22247 ds for calculating energy

transfer in molec [CALT-532-19] 12 p1931 N69-22605 nce data of h

ing amplitude phase shifts (ORNL-4197) 12 91933 168-2263 es in hydrogen b

12 p1933 N68-22 (UCRL-18041) TOR-0158/53930-43/-31

ए के क्या 13 p2051 1968-23276 1965 [ACIC-TC-1319]

13 p2040 NGD-23017

SUBJEC

AEC-TI

verses of (MRC-T

FTD-H

predictio EMM-6

by laser is [IPP-3/74

Compu

for zero e

FTD-HT

NASA-T

Labora tolerance merical co [SCL-DC

Use of

Approx nt boun

VKI-TN-

Numeri (UCRL-7)

R67SD5

transfer or [NASA-C

Fortran

Effect ariner

and numm

NASA-CI

Air velo

TR-821

Variable ferential ec [NASA-CI

(UCID-15

ES-TRAN

RAE-TR

NUMERICA

NUMBERIC

Fourier analysis of Burger equation to obtain di-rete infinity of equations in discrete infinity of varia-13 p2054 N68-23847 Numerical calculation between ions and polar s [NASA-TM-X-1586] re cross sections 13 p2120 N68-23893 lating time functions of Incar transmission systems (RAE-LIB-TRANS-1283) 13 p2046 N68-24342 numerical solution of sd other applied mathe-14 p2297 N68-24698 e dependent boundary 14 p2241 N68-24931 nice of deforma-14 p2357 N68-24954 egenerate extra orbi for .nondegenerate and ies of dilute metal alloys 14 p2331 N68-25085 14 p2362 N68-25499 ns of Navy shock analysis 14 p2366 N68-25534 ique for digital computer to solve elastic stress wave prof (SC-CR-68-3501) 15 p2565 N68-25660 nsteady nonlinear three ack wing in supersonic [SUDAAR-339] 15 p2381 N68-26104 graphical form for shock (IDL-TM-87-18) 15 p2570 N68-26271 bearing film pressure dis-REPT-111 15 p2473 N68-26365 merical calculation of Mathematical model flow profiles in open cha (NASA-CR-87688) 15 n2455 N68-26528 15 p2495 N68-26769 [NOLTR-68-7] mg diffe ethematical method for vior of gases in rigid polyn 15 p2446 N68-26902 [ORA-68-0003] 16 p2754 N68-27029 TUCRL-50354, PT. 11 16 p2651 N68-27087 Numerical analysis of retion of air storage cylinde [REPT - 2693] cts in depressuriza-16 p2641 N68-27097 ary layer calculations for bodies of 16 p2643 N68-27254 ic response of propel-MASA-TM-X-52195) 16 p2750 N68-27410 charged particle in 16 p2729 N68-28071 w fields surrounding Saturn NASA-CR-41856] 16 p2771 N68-28309 on of gust of wind on 17 p2801 N68-28439 p2848 N68-28442 (TR./T.47531 17 p2801 N68-28450 of CDC 6600 computer, seming techniques, basic rio method, and numerical 17 p2856 N68-28578

17 p2857 N68-28586

Detached shock calculation by second order finite ifference methods 17 p2979 N68-28643 eric refraction of high frequency radio waves g between earth and orbiting satellites 17 p2851 N68-29087 Ionospheric effects of solar X ray enhancements 17 p2880 N68-29099 Analytical approach to compiracy problem for ar-17 p2942 N68-29484 Counterexample to Tangherlini argument leading to Schwarzschild metric without use of field equations [NASA-CR-95733] 17 p2922 N68-29559 Numerical solution for problem of stress concentra-on in infinite plate with two circular holes 18 p3174 N68-29664 Orthogonal polynomial sets for representing partial and total thermodynamic excess functions for binary systems 18 p3184 N68-29782 Numerical analysis of interface onic jet directed against superrface layer generated by supersonic stream using stagnation point flow 18 p3050 N68-29815 [MC-66-268-R1] Chiral symmetry, superconvergence sum rules for [IC-67-47] 18 p3129 N68-29842 al aspects of optimal [RAE-TR-67320] 18 p3050 N68-29865 Computer progra nerical evaluation of tem-ce position as function of lergoing solidification 18 p3186 N68-30023 time for cylindric [ARL-68-0064] erical ana dy flow in two die sional square cavities [NASA-TM-X-52459] 18 p2997 N68-30043 Feasibility of using stindrical shells from al shields for protecting pulse loading ts of pulse loading 18 p3182 N68-30653 tationary radi g of cylindrical body 18 p3190 N68-30654 merical analysis of nonst dtilayer cylinders - appr action equation for infini onary heat conduction imate solution of heat multilayer cylinders 18 p3190 N68-30655 of field of plate vibra-18 g3182 N68-30660 c rods fabricated 18 p3182 N68-30661 merical solution for laminar wake behind finite [AFOSR-68-1018] 18 p3065 N68-30826 Numerical analysis of non gular wing of low aspect ratio [NASA-TT-F-11823] ionary flow past rectan-18 p3000 N68-30828 thod for inviscid hyper-ymmetric body 19 p3261 N68-30988 Graphical meth central temperatur [KAPL-M-0914] od for calculating fuel plate flux and 19 p3308 N68-30992 s for set of linearized variable equations governing convective ified atmospheric layer heated at 19 p3268 N68-31084 mplex species formed in on of copper 2 with series ines and hydrocide ion ntion by in 19 p3225 N68-31276 e calc AD-671201) eson parameters 19 p3329 N68-31302 on of orbits asymp Numerical analysis a tatic to periodic orbit {D1-82-0715} 19 p3366 N68-31778 ng surface analyses of cir-19 p3196 N68-32042 Effect of Coulor ismagnetic suscep 20 p3565 N68-32647 20 p3470 N68-32752 ysis applications to

20 p3516 N68-33245

Multigroup diffusion fast reactor contro (PNR/SETR-R-022) Numerical analysis of planar mo model representing kilometer wave to investigate feasibility of concept [NASA-CR-96630] 21 p Convolution techniques distributed networks with n Numerical analysis of stress herical shell loaded by concen Numerical methods in gravi Numerical studies relating to star formation and Jeans theory applied to gravitational collapse Anisotropic discrete ordi easured neutron spectra [AD-672225] Subroutines and alg ry functions on Soviet [FTD-MT-66-164] Richardson num (DPG-T68-106) Combinational arith Numerical method for evaluating geometrical optics radar cross section of general doubly curved convex conducting body [MTR-431] 22 p3835 N68-35486 Numerical method for calculating Doppler effect of radio waves coherently emitted from satellite [NASA-CR-97013] 22 p3871 N68-35629 Numerical analysis of criticality and breeding ratio alculations for cylindrical reactors and partially inserted control ro [KFK-741] Numerical calculation metho-physics and controlled fusion pro-(UCRL-71205) ods for various plasma Numerical methods and existence theorems for linear boundary value problems finasa-TM-X-6[284] Empirical formula derived connecting creepage omponents and tangential force transmitted by two olling elastic bodies rolling clasti WTHD-31 23 p4179 N68-36244 computer programs 23 p4026 N68-36444 [AI-MEMO-64] ed accounting for diffrac-23 p4108 N68-36742 pe-Kutta formulas of high order with stepsize through leading truncation error term -TR-1/-287] 23 p4089 N68-36753 control through lead [NASA-TR-R-287] n of axisymmetric cavity flows 23 p4050 N68-36941 (NPL-SHIP-114) Thermal disadve fuel rod and water [WAPD-TM-672] r calculations for clad 23 p4103 N68-36974 of partial wave scattering am-NYO-2262TA-163] 23 p4130 N68-37083 of winding power loss of rotating illed atmospheres 23 p3995 N68-37162 ac generators in contr [NASA-TN-D-4849] Heating cal on product gamma ray absorption in graphite is (BNWL-625) 23 p4104 N68-37170 ctron mean free paths and 23 p4135 N68-37322 clear RPA f ation using Bruekner reaction matrix and effective force operators [JINR-P4-3849] 23 p4136 N68-37371 nic energy levels and nuclear structure (JINR-P4-3873) 23 p4136 N68-37372

X

25

05

41

of

44

09

nd

27

eh kd

55

ity

54

63

cs

of

29

18

19

15

19

14

12

13

4

13

2

Ŋ

2

17

Performance analysis of velocity launcher based on nu cial viscosity technique [UTIAS-TN-121]

of implosion-driven hyperon numerical code using artifi-

06 p0822 N68-15344

acterizing pumped varactor ical techniques for analyzing circuits, and au impedances 24 p4234 N68-37457 General numerical procedure to a such le flows with shock waves 24 p4243 N68-37501 ns for observable meteor trails 24 p4340 N68-37581 Use of small computers for evaluation of gamma [AEC-TR-6942] 24 p4231 N68-37814 Existence and properties of spectral generalized inverses of square matrices
[MRC-TSR-823] 24 p4277 N68-38153 24 p4277 N68-38153 ns for orthotropic thin plates 24 p4351 N68-38234 [FTD-HT-23-624-67] Smoothing effect of turbulence term in numerical prediction of upper air flow patterns [EMM-67-166] 24 p4253 N68-38238 lence term in numerical Numerical calculation of dense plasms preduction by laser irradiation of solid hydrogen block. [IPP-3/74] 24 p4326 N68-38329 NUMERICAL CONTROL Computer programs and tape controlled drilling tachine for production of fuel assembly cluster plates for zero energy reactors [AEEW-M-699] 03 p0347 N68-12162 Digital techniques for automatic control systems to regulate azimuthally mounted instruments [FTD-HT-66-451] 05 p0661 N68-14348 atic control systems to Onboard computer for control synthesis of manned NASA-TT-F-115701 08 p1243 N68-18203 Numerical ictometer with variable time constants and integrated circuits CEA-R-33311 Laboratory manual on fabrication process for close tolerance multilayered printed wiring boards, using numerical control equipment [SCL-DC-67-80] 16 p2631 N68-29734 14 p2262 N68-25594 Use of numerically controlled machine took in RAE (RAE-TR-66408) 18 p3080 N68-29600 NUMERICAL INTEGRATION NT RUNGE-KUTTA METHOD Approximate integral method for solution of turbu-nt boundary layer displacement effects in hypersonic VKI-TN-341 01 p0002 N68-10814 ion of shock tube flow 02 p0199 N68-11452 Numerical sim (UCRL-70443) Numerical integration b ed upon dependent varia-02 p0230 N68-11655 Fortran 4 program for calculating multigroup elastic transfer coefficients [NASA-CR-91134] 03 p0387 N68-12245 Effect of infrared spectrometer gas jetting on Mariner Mars 1969 celestial mechanics experiment and preparations for numerical integration of hunar mo-03 p0414 N68-12307 Numerical integration of hunar ephemeris and nu-merical differentiation and interpolation of ephemeris DE19 03 p0414 N68-12308 Measurability, finitens and summability of set fur [ORNL-TM-1952] iness, derivation 03 p0361 N68-12609 variety of nonlinear slue problems, and con-procedures 04 p0527 N68-12903 vergence of amociate (NASA-CR-91294) Air velocity profile above progressive waves investigated in wind and wave facility with emphasis on propagating wave influence on mean velocity profiles [TR-2] 04 pd#93 N88-13049 ie mesh multistep methods for ordinary differential equations [NASA-CR-91341] 04 p0529 N68-13301 Transient development of hose instability of tickled (UCID-15127) 04 p0554 N68-13639 Prismatic cross-slip of dislocations in vicinity of 05 p0698 N68-14132

inalytical formulations and monorical integration thous for many body problem and special perturbative techniques NASA-CR-95836) 18 p3104 N68-30120 06 p0913 N68-15741 (FTD-MT-43-215) 20 p3589 N68-33131 or flow over cold surface 20 p3613 N68-33360 06 p0966 N68-16027 chaique for determining ular plates and cylindrical ry and constant velocity ential and radial discharge 21 p3657 N68-33986 ofic equations with two spe-Kutta method 21 p3714 N68-34456 prating systems of first 07 p1090 N68-16669 INASA-CR-978811 predicting electromag-plane shield case 07 p1036 N68-16671 independent variables (INASA-TM-X-61184) Integration of Boltzm (EP-RR-15) collision integrals 07 p1049 N68-16726 22 p3902 N66-35753 of high order with stepsize scation error term 23 p4009 N68-38753 in for deriving optimum nu-nes for real time flight state-Computer program for equations of motion for artific (NASA-TM-X-63085) merical integration of earth satellite orbits 07 p0971 N68-17080 pration of initial value quations 08 p1193 N68-17508 AMRL-TR-68-41 23 p4027 N68-36767 Numerical integration of bupplications to computer d-limited signals, with implemented signal Basic outline of me synchronous satellite [ESRO-SM-73/ESOC/] 23 p4972 N68-36991 edaptive Monte Carlo MTR-4731 09 p1301 N68-18321 Numerical methods [NP-17485] ion method of solving laminar m on semi-infinite body with suc-23 p4090 N6B-37046 cal integration of dif-Three methods for 09 p1326 N68-18650 ory equations for charged parti-etween charged plates to assess for precipitating particles from 24 p4276 N68-37978 UMERICAL WEATHER PORECASTING cie in Possieme il electric field pote viscous oil [D1-82-0661] Euler equations of m forecasting out to six days [WBTM-NMC-TM-39] 10 p1517 N68-20206 63 p0362 N68-11945 not by con 10 p1547 N68-20209 SRDS-RD-67-651 06 p0868 N68-15116 nisc 3 engineering activity, man machine project, a stimulator computer research, retrieval by con-oc of binary attributes, and numerical stability in Numerical analysis of vec cal cyclones for predictin movements r motion in severe tropi-harricase and typhoon (COO-614-37) [PR-1] 11 p1668 N68-21000 OR p2197 NSS-17940 ration of diffusion equa-Method of numerical in cal prediction model NPS-S1DDB011A1 31DD001(A) 13 p2096 N68-23204 raction of digital hemispherical temperature and lity data fields from U.S. Flort Numerical Facility neversion to National Meteorological Center grid [UCRL-TRANS-10190] 11 p1730 N68-21271 Algorithm for nu gration of coupled dif-11 p1732 N68-21587 REPT.-675D245] Numerical integration hange of lunar satellite or NASA-CR-62056] equations for time rate for Apollo project 11 p1785 N68-21702 13 p2103 TH68-24252 for integrating coupled equations with parasitic 15 p2460 N69-26297 in numerical weather eignevalues [NASA-TN-D-4547] 12 p1897 N68-21978 AFCRL-68-0206 18 p3109 N48-30199 & data for short range reather Numerical analysis of per plane within supersonic flow [NASA-TT-F-[1687] netration of plate in half 12 p1862 N68-22424 20 p3521 Nes 32716 Numerical calculation of at [AECL-3041] lear Slater integrals 12 p1936 N68-22743 20 p3522 Nee-32772 lock-hour cainful rates al value proble APOSR-68-0712 Ctimatological cuing annual reinfi [AWS-TR-202] 14 p2280 N68-24526 21 p3718 N68-34339 15 p2431 N68-25711 tion of numerical in-WRTM-WR-101 23 p4095 N63-34902 In in numerical weather tegration orbit calculate (NASA-TN-D-4542) tegra 15 p2558 N68-25867 forecasting [EMM-66-63] rediction of flow pat-r granuler materials 13 p2452 N66-26067 ity theory appu 24 p4283 N68-31266 NUTATION Jet Propulsion Lab innetury and lunar po-utation rates in long Gravitational field of a of Lunar Orbiter tracking [NASA-TM-X-59860] 16 p2767 N68-27696 1949 to Jan. 2000 ution applied to ph CERN-60-151 17 p2924 N68-28413 APL-TO-997) forcest method for solving nonsimilar laminar addry layer equations for three dimensional cross 20 p3585 N60-32514 deformable builds - op al deformation 20 p3602 MAS-330 a manifest damper for ig Procession and nutr tions of section for spi [D1-82-6721] NASA-CR-95404) 17 p2872 Nos-28914 iculations of transport 17 p2937 N68-29219

grating nonlinear difcipervalues 17 p2905 N68-29275

ferential equations with par [NASA-TN-D-4703]

20 p3596 N68-33334

OCEAN Stre ocean netic-(AD-6 Hyd Baltic [NOO Airt

SUBJ

Geo raphy, stracts (JPRS CU-2 Dyn (CU-2-Acce AD-6

Astro

Then

geophy abstrac [JPRS-

INEL-

Paper ocean v for 196 (CU-26 Trans Sovie 1966 (NIC-TI Photo MPL-T Electrions of depths (NOO-T

> serial se Scient (RE-314 Ray re REF-67

y of Sea

Ocean

Anisot |MPL-U-JPRS-44

Hydroc Lithogo INOO-TI

Rising

NOO-TI Current of Japan (REPT.-3

Fluoronilicon O rings tested to determine resistance to high pressure, high temperature oxygen [NASA-CR-61807] 15 p2476 N68-26856 NT VISUAL OBSERVATION Decametric observations of Jupiter during 1967 ap-Elastomer O ring seals for piston ring and shaft seal operation in dry helium atmosphere [ORNL-TM-1661] 20 p3488 N68-32955 NASA-TM-X-55996] 01 p0132 N68-10003 20 p3488 N68-32955 Emission spectrum of Venus between 8 and 13 icrom observed with telescope using Michelson inter-NASA-TM-X-63217) - 14 p2344 N68-24730 Theoretical and observational data compariso Observation of vertical oscillations of lower solar photosphere mamive stars [NASA-TM-X-60774] 04 p0571 N68-12861 15 p2554 N68-26514 Spectroscopic and p E region lifetime and prece [UCID-15294] on observations 15 p2449 N68-26822 24 p4341 N68-37656 OAK RIDGE ISOCHRONOUS CYCLOTRON Criteria for degree of observ bility in control system 21 p3672 N68-33974 for sochronous cyclotron [ORNL-4175] OBSERVATION AIRCRAFT U MIRAGE 3 AIRCRAFT U P-1127 AIRCRAFT U TSR-2 AIRCRAFT 10 p1512 N68-19905 Reduction of OAO spacecraft data handling equip-U U-2 AIRCRAFT
U WEATHER RECONNAISSANCE AIRCRAFT ment telemetry data (NASA-CR-901091 01 p0032 N68-10870 Stability analysis algorithm for um state of OAO control system [NASA-CR-73164] m for estimating equilibri-ERVATORIES AOSO
ASTRONOMICAL OBSERVATORIES
GEOPHYSICAL OBSERVATORIES 04 p0584 N68-13613 Stability criteria for OAO coarse pointing mode [NASA-CR-73165] 04 p0579 N68-13763 **LUNAR OBSERVATORIES** OAO Attitude control requirements for ESRO large as-onomical satellite to derive telescope pointing con-000-A 000-B 000-C os p1199 N68-17415 NT NT FORTRAN 4 computer program for stability criteria nalysis of orbiting astronomical observatory course 050 050-C NT

12 p1844 N68-21899

nal control coatings of

14 p2369 N68-24465

tered in design of star mical observatory 15 p2447 N68-26910

18 m3171 N68-30193

19 p3366 N68-31631

21 p3770 N68-34266

23 p4177 N68-37147

on criteria using satellite obser-

ed orbital observa-

SOLAR OBSERVATORIES Radio-radar telescope and related studies at Arecibo lonspheric Observatory [AFOSR-67-2037] 01 p0047 N68-10617 Work report 1966 of Institute for Satellite and Space search at Bochum Observatory 05 p0758 N68-14119

matic multichannel recorder circuit for cosmic 06 p0843 N68-15071

First decade of satellite tracking at Royal Observatory, Edinburgh (ROE-STS-64) 06 p0801 N68-15837 n of observation locations

Dynamicar uing Geos 1 data 23 p4053 N68-36177

--- (0.0.RC)438V1

OBSTACLES U BARRIERS OBSTRUCTING BLOCKING OCCLUSION

Effects of nasal occlusion itering on perception of nas on, com mant context, and 15 p2403 N68-26922

OCCULTATION

NT LUNAR OCCULTATION

NT SOLAR ECLIPSES

NT STELLAR OCCULTATION

Mariner 5 space probe radio occultation analysis, Pioneer 8 space probe data, and bistatic radar data reduction from Lunar Orbiter and Mariner 5 [NASA-CR-92363] 06 p0914 N68-16085

Integral inversion of Mariner 4 occultation data for Mars atmosphere and [NASA-CR-92718] 07 p1081 N68-16732 Effect of earth occultation n on astronomical observations from earth orbiting satellite [NASA-CR-93474]

09 p1426 N68-19353 Calculation of occultation of satellite telescope by spherical celestial body (ESRO-SN-73/ESDAC/) 13 p2153 N68-24176

Temporal estimation in perception of occluded mo-15 p2537 N68-26167

Preliminary results of Mariner 4 radio occultation 17 p2851 N68-29086

Radio refraction and occultation techniques for at-mospheric density measurements between multiple sateflites [NASA-CR-97115] 23 p4095 N68-36731 Occultation of sun's disk during eclipse as seen from sounding rocket [ESRO-5M-68/ESDAC/] 23 p4172 N68-36992

OCCUPATION New jobs created in induresuit of national space effort [NASA-CR-96808]

lustry and governm

21 p3797 N68-34391

Viscous notation damper with cantilevered mass for dual-spin spacecraft stabilization 20 p3596 N68-33535 ular accelerometer and hydrazine thruster for in control of spinning spacecraft 20 p3597 N68-33536

NUTATIONAL OSCILLATION NUTATION

NUTRIENTS

Biological value of unicellular algae proteins in rat 09 p1282 N68-18917

Nutritional properties of Hydrogenomonas eutropha diets for manned space flight 15 p2393 N68-26214

DAO

pointing mode [NASA-CR-73166]

OAO [NASA-CR-94684]

(RM-415)

U OAO

Outgassing problems en tracker used on orbiting as

Irradiation effects on thern

Working specifications for m tory and telescopic optics

QAO success evaluation and orbit lifetime

Conversion of human wastes, carbon dioxide water, and urea into food for space rations [NASA-TM-X-59839] 16 p2597 N68-27463

NUTRITION tinal bacteria for sutrition of chickem [NASA-TT-F-11362] 01 p0007 N68-10135 Nutritional adequacy evi tableted diet for chimpannes [ARL-TR-67-21] ion of pelleted and

03 p0305 N68-12097 Pelletizer for ma ng peliets from powdered (SAM-TR-67-75) 06 p0772 N68-15135

id diet effect on adult pocket mice (2835) 07 p0945 N68-16617 Semipurified diet (NASA-CR-92835) Feasibility of frozen, precooked, foil packaged meals feeding system ISAM-TR-67-841 11-p1639 N68-20923 NUTRITIONAL REQUIREMENTS

Minimum protein and caloric requionged manned spaceflight and space [NASA-CR-91287] 04 p ot and space stations 04 p0457 N68-13776

Biochemical, physiological and metabolic evaluation of human subjects wearing pressure suits and on diet of precooked frozen dehydrated foods precooked from de [NASA-CR-91680] 05 p0608 N68-13947

Nutritional requirer ts and breeding behavior of NASA-CR-92980) 07 p0948 N68-17148

tation requirements during pro-vironment simulation with human 10 p1473 N68-20567

Survey on food requires its for manned space

INASA FACTS NF-41/12-67] 12 p1823 N68-22045 Diet and feeding habi of Sahara nomadic tribe and

adaptation to desert cli [NASA-TT-F-11612] 12 p1823 N68-22210 Biochemical, physiological, and metabolic analysis of subjects in life support system on liquid food diets

(NASA-CR-94860) tton 15 p2398 N68-26777 Chemical feasibility of edible fatty acids as for space flight feeding [NASA-CR-1104] and nutrional value in synthesis id lipids from metabolic wastes

17 p2820 N68-28829 NUTS (FASTENERS)

ner safety devices and methods for engineering [NADC-MA-6702] 06 p0849 N68-15237

NYLON RESINS U POLYAMIDE RESINS NYSTAGMUS U ASTIGMATISM

0

O RING SEALS

Leskage of large diameter O ring seals on spacecraft [NASA-TN-D-4394] 08 pl244 N68-17498

Theoretical and experimental study of convective in-ertin and gas ingestion effects on flow regimes of (NASA-TM-X-52283)

14 p2265 N68-25416 Theoretical and experim tal evaluation of fluid ing shaft and belical 14 p2266 N68-25471 NASA-CR-834981

d results of studies with 15 p2476 N68-26843

Harmonic analysis for spheroidal earth [P-3684] 01 p0060 N68-10750 comparative analysis of current Survey and NASA-TM-X-536771 07 p0992 N68-17043 Potential theory for satellite motion about triaxially ellipsoidal planet [NASA-CR-96145] 19 p3369 N68-32024

Synopsis of full design study of European Large Astronomical Satellite
[ESRO-SP-5] 23 p4177 N68-37147

Bibliographic review on OGO, OSO, OAO, and Transit satellites [LRBA-45-64-EN] 17 p2975 N68-28462

Stability analysis of OAO attitude control system in ourse pointing mode

OBLIQUE SHOCK WAVES

OBLATE SPHEROIDS

peed of sound behind stationary oblique shock in y block containing 93 percent aluminum 05 p0752 N68-14938

tion aspects of oblique reaction waves 06 p0825 N68-15315 (DVI_684) Shock interactions between supersonic body and obliquely approaching blast waves [SC-CR-67-2533] 12 p1814 N68-22891 Oblique collisionless shock wave structure in deu-terium and hydrogen, and plasma turbulesce [ORO-3647-2] 16 p2739 N6E-28171

Effect of N waves at oblique incidence on response of simply supported plate to transient loads [NASA-CR-1176] 20 p3604 N68-33168

Shock temors and shock polars - refraction law for velocity at oblique shock in compressible fluid [BRL-1399] 22 p3858 N68-35244

Shock-panel coupling effects of supersonic turbulent flow drives by impedance head [NASA-CR-61986] 23 p3983 N68-36038

U OCCULTATION

DESERVATION NT SATELLITÉ OBSERVATION

A-850

OCEANOGRAPHY

967 ap-1-10003 and 13

NDEX

-24730 er solar -26514

-26822 -33974

AFT

Arecibo -10617

d Space -14119 cosmic -15071

ervalo--15837 cations -36177

st, and -26922

-16085 inta for

-16732 beerva--19353 ope by -24176

ed mo--26167 ultation -29086 for at-

-36731 n from -36992

nent as -34391

Stream function for nondivergent parts of observed oceanic surface currents determined from geomagnetic-electrokinetograph data (AD-659125) 01 e0060 N62-10746

Hydrological and hydroche Baltic Sea during IGY period [NOO-TRANS-295] ical conditions in south 01 p0060 N68-10781 Airborne and spaceborne sensors for oceanographic

(AD-659174) 01 p0061 N68-10843 Geophysics, astronomy, meteorology, oceanog-raphy, and aerospace sciences - bibliography with ab-stracts [JPRS-43576] 02 p0206 N68-11457

Linearized equations of mo cumpolar current dynamics [CU-2-67, PT. 2] 02 p0233 N68-11886

Dynamics of ocean currents around Antarctica, and frictional boundary layer [CU-2-67, PT. 3] 02 p0208 N68-11898 Accomplishments and future prospects for U.S. Navy occanographic research programs [AD-657389] 02 p0209 N68-11901

Astronomy, meteorology, oceanography, terrestrial geophysics, and upper atmosphere - bibliography with abstracts [JPRS-43755] 03 p0339 N68-12124 Thermistor chain for measuring sea temperature structure of upper layers [NEL-1395] 03 p0340 N68-12486

Papers on mixing, diffusion and circulation rates in ocean waters and on physical oceanography programs for 1966-67 [CU-2663-8] 03 p0340 N68-12506 03 p0340 N68-12506

Translations of Sino-Soviet publications in astronomy, meteorology, oceanography, geophysics, and upper atmosphere and spice research [JPRS-43878] 04 p0499 N68-13178 04 p0499 N68-13178

Soviet Antarctic scientific investigations - 1936 to 1966 [NIC-TRANS-2464] 04 p0500 N68-13390

Photographic compass inclinometer design for recording orientation of deep sea sampling devices [MPL-TM-149] 04 p0509 N68-13423

Electronic instruments for recording turbulent pulsa-ions of current velocity and temperature at great

[NOO-TRANS-376] 04 p0510 N68-13644 ution, and salini-

05 p0650 N68-14083 Oceanographic and hydrographic applications of aerial survey techniques [FTD-MT-64-347] 05 p0651 N68-14347

Scientific, technological, and economic evolution of nderwater occumographic activity RE-314) 05 p0761 N68-14377

Ray representation of diffraction effects, shallow and deep water propagation experiments, acoustical instru-mentation, and ambient noise in arctic waters [REF-67-5] 05 p0653 N88-14669

05 p0653 N68-14690 Maps and charts based on ge S. Naval Oceanographic Office [REPT.-67-52] agnetic surveys by U.

05 p0656 N68-14977 Anisotropy of Pacific upper mantle (MPL-U-21/66) 05 p0656 N68-14996

Oceanography, meteorology, astronomy, upper at-mosphere, and earth planetary structure [JPRS-44033] 06 p0832 N68-15026 Oceanographic studies on b turbulent mixing, and waves m relief, sediments,

06 p0832 N68-15029 Rising of ocean levels in equ

orial zone 06 p0836 N68-15391 Hydrochemical and magnetic methods of analyzing hemical characteristics and patterns of sediments from ocean bottom sampling [NOO-TRANS-346] 06 p0839 N68-15628

Lithogenesis of plastic clay sediments in sens [NOO-TRANS-355] 06 p0841 N68-15820 Hydrological charts of Black Sea during fishing

Current flow and effect on water temperature in Sea (REPT.-358)

Spectral ocean wave forecasting using automated prediction program [IR-67-78] 07 p1017 H68-16487

(USNRDL-TR-67-129) 07 p0958 N68-16693

Soviet-bloc research in astronomy, meteorology, occanography, geology, upper atmosphere, and space [JPRS-44234] 06 pl 167 N68-17526

Oceanography, seismic wave data on earth crust, and size distribution of ice flors

08 p1167 N68-17529 Soviet bloc research in astronomy, meteorology and upper atmosphere, oceanography, and histories of geology in U.S.S.R. [JPRS-44416] 08 pl 167 N68-17597

08 p1167 N68-17597

Wind-sea wave energy transfer, acoustic scattering ocean bottoms, ocean circulation, and hydrography 08 p1168 N66-17600

Sampled data and correlation methods for determining surface and bottom drifts of continental shelf water off Chesspeake Bight 08 p1175 N68-18177

ographic evaluation of Apollo mission photographic recordings [NASA-CR-93429] 09 p1341 N68-18773

Potential applications of geodetic satellites to geology, oceanography, glaciology, and atmospheric physics [NASA-SP-158] 09 p1334 N66-18902

Geological structure of ocean floor, wind profile stu-dies, see water circulation, and other oceanographic research in U.S.S.R. 09 p1335 N68-19170

USS Pioneer ocean survey data for 1961-1963 [C/GSDR-1] 10 p1521 N68-19838

Southern oscillations in East Indies and Indonesia re-lated to meteorological and occanographic data from other parts of world [REPT-88] 10 p1552 N68-1085

Bathymetry and subbottom profiling, magnetic and geophysical survey data
[SP-96-HH-2] 10 p1521 N68-19902

Ground truth requirements for remote sensing of oceanographic features [AD-663438] 10 p1522 N68-19951

Upwelling in bounded oceanic basins similar to steady wind-driven currents [RN4-3594-NSF] 10 p1522 N68-19988 Parachete drugue trajectories, mean velocities, identifying data tables, wind observations, and computer programs used in processing data on subsurface ocean currents off Oregon

(REPT.-26) 10 p1522 N68-20019 Aircraft and spacecraft semote sensing of oceanographic features and interpretation of photography taken during Apollo 501 mission [NASA-CR-93779] 10 p1522 N68-20041

Soviet-boc research in astronomy, meteorology, oceanography, terrestrial geophysics, and upper atmosphere and space research [JPS-44901]

Soviet-bloc research abstracts on oceanography, proclinic dynamics, and wave motion 10 p1526 N68-20532

Literature survey of Soviet blue research in geophysics, astronomy, and space sciences [JPRS-45076] 11 p1689 N68-21276

Literature survey of Soviet bloc research in ocea raphy 11 p1690 N68-21279

Computer reduction of data from engineering tests on oceanographic soil samples (R-566) 11 p1691 N68-21358 nity content along court

11 p1691 N68-21420 Bathymetric observations and track charts for survey operations in southeastern Pacific Ocean during February - March 1967 (CU-169-67-ONR-266-PHYS.)

11 p1692 N68-21497 ques for oceanographic survey data (SP-95-2-7) 11 p1692 N68-21550

truments, data acquisition, and data trine peophysical survey of North At-rwegian Sea, and Mediterranean Sea 11 p1693 H48-21566 ers for m Inntic Ocean (SP-95-2-8)

Effect of topography on Yucatan Current IREPT.-67-24T 11 p1693 N68-21657

12 p1868 N68-22482 Inverted barometer effects and steric changes effects on hydrostatic response of ocean [NASA-CR-94354] 12 p1869 N66-22769

Tabulated physical, chemical, and biological data collected from Columbia River offburn area during nearch vomel flower flows 1965 craims [RLO-1725-91, V. 1] 12 p1869 888-22827 Tabulated physical, chemical, and biological data collected within Columbia River offburn area during [RLO-1725-92, V. 2] 12 p1870 1668-22856

[P-3801] 13 p2097 N68-23203

Hydrographic study of circulation and distribution of physical properties of northeast Gulf of Mexico [AD-666629] 13 p2039 1668-23375

off Southwest [OARI-1-68] 13 p2098 N68-23435

[ACIC-TC-1284] Maditerranem Sea 13 p2060 N68-23578

13 p2060 N68-23679

13 p2070 N68-24009 Fine-scale topography and magnetic anomalies of deep sea floor of southern California [MPL-U-3/68] 13 p2063 N68-24013

Tabulated data on temperatial, and acoustic velocity of N [CG-373-9] th Atlantic Ocum 14 p2245 N68-24525

Mineral resources of ocean, underwater research scilities and photography, and economic and other spects of oceanography reported in Soviet-blec litera

14 p2245 N68-24533

Soviet developments in magnetic surveys on oceans and results obtained with nonmagnetic side during IGV

[NASA-TT-F-11471] 14 p2247 N68-24831 Analysis of sea current velocity and direction off

[JAERI-4044] 14 p2251 N68-25371 nt of deep oco night and period mes

[UCRL-50379] 14 p2261 N68-25454 Soviet bloc read occumography, group [JPRS-45575] tonomy, meteorology, tonomherics 15 p2458 Nee-25822

Soviet bloc oceanographic research activities on ermal conductivity of waves, distribution of ocean diments, and flow models

15 p2458 N68-25825 ocean temperature in-transcention 15 p245E N68-25E35 (JPRS-45681)

Bathymetric and geomagnetic two crossings of Atlantic Ocean (CU-167-68-ONR-266-PHYS.) 15 p2461 NGB-26333

on northwar Athenic re-n, core physical proper-terior place had 20034 SP-95-24)

Soviet research accompany JPRS-453441 17 p2881 N68-29450

ch is Seviet-blee, including

18 p3009 1468-30544 office from aircraft and of from tentifica 18 p3070 1468-30779

19 p3267 Non-3082

19 p3242 1449-30032 (AD-670539)

19 p3303 N48-31074 of deep sea revenda 19 53239 1006-31725 NUWC-TP-27

179-177724) 19 p3389 N68-31739

SUBJ

Am turbul [NAS.

Electronium (NAS.

Elec

Ohr

approx

Anti

Add organi and co (NRL-

Mat

migrat [NR-1

Thic

Oil

CEA-

Con

Opti

Space surveillance system for ocean observations [PB-177726] 19 p3274 N68-31894 Oceanography /review of Soviet news items and scientific articles/ 22 p3865 N68-34838 Optical properties of wave churned sea surface, energy spectrum and length of wind waves, and estimation of energy dissipation in surface layer of sea [JPR3-46563] 23 p4054 N68-36413 Mathematical estimation of turbulent energy dissipation in surface layer of sea 23 p4054 N68-36414 Spectral theory method for calculating two dimen-onal energy spectrum and length of wind waves 23 p4055 N68-36415 Selected Soviet abstracts in fields of geophysics, as-trophysics, meteorology, space, oceanography, and ter-restrial geophysics [JPRS-461/2] 23 p4055 N68-36550 Selected abstracts of Soviet literature on oceanog-23 p4055 N68-36553 Naval capabilities and developments in deep ocean technology, surveying, and underwater engineering [AD-663974] 24 p4249 N68-37692 Soviet-bloc research in geophysics, meteorology, oceanography, astronomy, and upper atmosphere and space - news items and abstracts
[JPRS-46568] 24 p4251 N68-38035 24 p4251 N68-38035 Exploratory deployment configurations of buoys in North Pacific for meteorological and occanographic [GDC-AAX68-003] 24 p4283 N68-38320 buoyant structure 24 p4254 N68-38358 [WHOI-REF-68-42] OCEANS NT ARCTIC OCEAN NT ATLANTIC OCEAN NT INDIAN OCEAN NT PACIFIC OCEAN Evaluation of sea surface temperature as measured by Nimbus 1 satellite high resolution infrared radiome-01 p0087 N68-10222 [NASA-TN-D-4078] Radiative heat transfer in surface layers above (FTD-HT-67-415) 02 p0204 N68-11181 Oceanic electric currents, geomagnetic variations, and deep electrical conductivity of transition between ocean and continent of central California (SIO-REF-67-18) 03 p0341 N68-12796 Computer processing of satellite infrared data for determining sea surface temperature [NASA-CK-91732] 05 p0650 N68-14108 Surface wind observations and analysis over ocean (REPT.-89) 10 p1551 N68-19679 Electromagnetic wave propagation in lithosphice, and water - radio communications, electrical measurements, antenna efficiencies, mathematical models mathematical mode [AGARD-CP-20] 14 p2223 N68-25187 Surface waves and electromagnetic properties of ocean-air interface 14 p2223 N68-25188 Mathematical model for calculating electromagnetic fields in ocean from ground wave excitations over land 14 p2249 N68-25191 Electromagnetic monitoring at very low frequencies made by bathyscaph in deep ocean water 14 p2251 N68-25213 Reception in ocean by volumetric antenna and low frequency magnetic dipoles 14 p2226 N68-25215 Propagation of long waves over wavy bottoms [TR-1] 15 p2462 N6B-26489 Numerical model of world oceans based on equa-tions of state [UCRL-50354, PT. 1] 16 p2651 N68-27087 16 p2651 N68-27087 Random functions theory w mutural electric field in ocean [AWRE-TRANS-56] ory used to study variations of 16 p2658 N68-28322 Cross correlations of isc thermal vertical variations of [M-7378] 22 p3904 N68-35271

tion of depth of isothermal layer of sea 22 p3904 N68-35272

Duration and distribution of anomalies in ocean nu-face temperature between 1948 and 1959 measured by weather ships and coastal stations [M-7374] 22 p3907 N68-35565

Ocean diffusion models for predicting radioactive oncentration levels associated with accidental release om isotopic heat sources for future use in SNAP [SC-CR-68-3532] 22 p3871 N68-35583 Optimal processing of Nimbus 2 data for observation of ocean surface temperature patterns and synoptic [NASA-CR-97280] 23 p4096 N68-36931 Salinity of ocean water and sea ice and ice formation [NOO-TRANS-370] 24 p4250 N68-37757 OCTAHEDRITE U ANATASE U MINERALS OCTAHEDRONS Natural bending frequency of fifty story octagonal tower calculated by displacement matrix analysis and from wind tunnel experiment (NPL-AERO-1239) 17 p2982 N68-29388 SU/3/ symmetry breakdown in system of pseu-oscalar meson and baryon octets 23 p4119 N68-36688 OCULAR CIRCULATION Prolonged weightlessness effects on human otolith puaratus and ocular counterrolling olling 10 p1471 N68-20554 OCULOGRAVIC ILLUSIONS Perception of oculogravic illusion in normal and labyrinthine-defective subjects related to water immer-[NASA-CR-91451] 04 p0451 N68-12963 Oculogravic illusion as indicator of otolith function based on specific testing conditions 17 p2824 N68-29148 Stimulus size and viewing distance effects on duration of illusory motion in spiral aftereff [FAA-AM-68-10] 20 p3411 N68-32920 Human perception of angular acceleration during and after rotation [NASA-CR-96631] 21 p3635 N68-34013 Oculogyral illusion and vestibular thresholds for ross-coupled acceleration exposure in relation to Apollo Applications [NASA-CR-66684] 22 p3816 N68-35155 OFF-ON CONTROL Closed loop, manual, time optimal, bang bang con-trol of high order systems using concept of switching surface 06 p0784 N68-15928 Feedback system for op-tochastic system with noise nal bang-bang control of 07 p0978 N68-16972 Off-on dielectrophoretic propellant orientation in low gravity environment [NASA-CR-93334] 08 p1220 N68-17955 Comparison of spring centered displacement, on-off, and pressure controls on third order compensatory tracking functi [NRL-6646] 10 p1475 N68-19915 Simple automatic control for scan repetition and cycle selection on mass spectrom [JUL-505-RC] 17 p2884 N68-28812 Dynamic model of on-off control systems for auto-matic attitude control system of VTOL aircraft [NAL-TR-142] 17 p2865 N68-29260 Adaptation of bang-bang switching system for con-trol of artificial arm [TR-43] 19 p3217 N68-31734 OGEE SHAPE Aerodynamic ground effect measurements on low aspect ratio ogee wings [NASA-TN-D-4329] 05 p0604 N68-14090 OGEE WINGS
U VARIABLE SWEEP WINGS Pressure distributions over spherically blunted ogive omputed for perfect gas, equilibrium air, and onequilibrium inviscid outer flow fields with reacting and nonreacting bour [AEDC-TR-68-31] 13 p1987 N68-23267 Surface roughness effect on flared ogive cylinder at 24 p4248 N68-38449 NT OGO-B 000-8 000-C

cle emission [NASA-CR-91510] [NASA-CR-94761] [LRBA-45-64-EN] Mass distribution a photometry in airgiow ba [NASA-TM-X-63299] NASA-CR-96144] [NASA-CR-89092] OGO-A OCO-B (R-3) OGO-C OGO-C observation of sudden magnetic field change and propagation of perturbation to magnetotall on 8 July 1966 [NASA-TM-X-63247] 16 p2753 N68-28248 OCO-F Summarized prelaunch, launch, flight performance, and range information for Atlas Agena 26 launch vehicle for OGO-E spacecraft (NASA-TM-X-60997) 17 p.2976 N68-28671 OGO-F Instrumentation data for low energy solar cosmic ray measurements using OGO-F satellite [NASA-CR-96312] 20 p3582 N68-33161

Correlation of orbiting geophysical satellite solar are observations with solar radio and energetic parti-OHMIC 04 p0570 N68-13579 Field aligned electron bursts at high latitudes ob-served by polar orbiting satellite OGO-4 [NASA-TM-X-63093] 07 p1077 N68-17072 07 p1077 N68-17072 Very low frequency ground stati rvations of whistler mode signals in station transmitter ob-als in OGO satellites 09 p1336 N68-19310 Design criteria for solid state detectors for orbiting geophysical observatory onboard electron flux and spectra measurements [NASA-TM-X-63195] 12 p1876 N68-22703 lonization rate profiles from solar flare X rays observed by ion chambers abourd OGO 1 and OGO 3 [NASA-CR-94429] 12 p.1963 N68-23026 Computer programs for OGO data processing, trajectory analysis, and magnetic field analysis [AFCRL-68-0046] 13 p2149 N68-23150 OGO operations monitor computer programming and cathode ray tube display subsystem [NASA-CR-94581] 13 p2036 N68-23948 Data tables for calculating flow fields of satellite plasma interactions in atmosphere [NASA-CR-94792] 14 p2247 N68-24916 r Calculation ns in atmosphere 21 14 p2247 N68-24916 Computer program for OGO-E vehicle response nalysis to transient loading during Atlas booster burономи Dev ohmic electri [AFO 14 p2351 N68-24918 Random vibration response data for orbiting ophysical observatory - comparative analysis of OIL AD 14 p2363 N68-25501 Mathematical model for calculating optimal dynamic absorber design for maximal vibration damping of OGO satellite 16 p2781 N68-27711 Bibliographic review on OGO, OSO, OAO, and OILS NT C NT I 17 p2975 N68-28462 ix of micrometeoroids and radio meteors using OGO-2 satellite [NASA-CR-95692] 17 p2970 N68-28892 Analytical method for finding heat balance of insu-lated OGO experiment packages from thermal stability data and without solar simulation [NASA-TN-D-4644] 17 p2870 N68-29478 ignic oxygen [U413 17 p2870 N68-29478 Fabrication of beryllium mirrors for OGO by spark machining, nickel coating, and polishing 19 p3285 N68-31536 ults from multispectral ads by OGO-4 satellite 19 p3305 N68-32086 FTDtic and mechanical vibrahroud enclosed spacecraft anical vibration transmission 19 p3383 N68-32127 Instrumentation data for low energy solar cosmic ray measurements using OGO-F satellite [NASA-CR-96312] 20 p3582 N68-33161 (NASA Low energy electrons in magnetosphere as observed OGO satellites [FTD-21 p3762 N68-34286 Development history and design modifications for at-titude control subsystem of OGO [NASA-CR-86107] 23 p4178 N68-37394 Vapor Polo OGO-A scintillation counter to detect 3 to 90 MeV protons in solar cosmic rays [NASA-CR-96278] 20 p3591 N68-33302 COO-OLEFIN Magnetic disturbances examined for correlation of surface and satellite magnetic field measurements [NASA-TM-X-63142] 09 p1338 N68-19435 OLEIC A Data correlation of Explorer 20 observations of elec-tron density irregularities with OGO-2 VLF hiss obser-vations, and satellite experiments to determine auroral Prepoleic a matogr (BM-R 21 p3683 N68-33625 OLIVINI Expo wind fl [NASA

20 p3582 N68-33161

OMNIDI NT N

OMEGA

Proje

[M-7381]

OHMIC DISSIPATION NT SHOCK HEATING parti-13579

DEX

es ob-

17072

er ob-

tes 19310

biting and

22703

ob-

23026

saing.

23150

nming

3948

tellite

4916

4918

5501

ng of

7711

and

8462

s and

8892

9478

park

1536

ectral

2086

2127

C FRY

3161

rved

4286

or at-

7394

MeV

3302

n of

1435

625

1248

671

TRY

161

oule heat dissipation in channels with dielectric is and one nonconductive partition when conduc-media in inhomogeneous magnetic fields flow

02 p0256 N68-11684 Stray loss measurements for three phase induction

06 p0814 N68-15046 ice of magnetic fields in

Amplification and maint turbulent conducting fluids [NASA-TM-X-60924] 09 p1402 N68-19005 Electrical, and calorimet ating current loss in ni-tanium, and niobium stam tric measurements on alter-obium zirconium, niobium

[NASA-CR-61654] 09 p1410 N68-19140 tivity, by Ohms law, for Electrical resistance and re-agnetohydrodynamic genera

17 p2948 N68-28828

Ohmic heating of fully ionized plasmas studied from approximations to Boltzmann transport equation [TR-49] ization of hydrogen gas

Mathematical model for is by ohmicly heated electrons [IPP-1/79] 20 p3553 N68-32358

OHMMETERS

Device for measurement of hmic law by recording seco-lectric bipole current-voltage ent of small deviations from second derivative of passive haracteristics 06 p0880 N68-15634 electric bipole curre [AFOSR-67-2785]

OIL ADDITIVES

r additives for oils 08 p1183 N68-17912 (FTD-MT-64-388) Additives for jet engine lubricating oils and effect of rganic phosphorus compounds on thermal stability ad corrosion prevention [NRL-6667] 17 p2895 N68-29280

NT CRUDE OIL

NT FUEL OILS
NT LUBRICATING OILS
NT MINERAL OILS

Ignition and flame propagation in oil contaminated 01 p0148 N68-10154

Mathematical model of two dimensional flow for oil signation studies (NR-168) 05 p0649 N68-14980

Thickening effect of lithium soap in oil-soap filler three component systems [FTD-HT-67-225] 07 p1012 N68-16725

Oil leak detection warning system to detect small changes in reservoir capacity
[CEA-R-3322] 12 p1877 N68-22724 12 p1877 N68-22724 Ultraviolet measurements of oil contamination in op-

(NASA-TN-D-4612) 14 p2259 N68-25375 Corrosion resistance from antioxidant and lubricant additives studied in oils [FTD-HT-23-902-67] 18 p3097 N68-29619

Sulfonates effect on permeability of oil films to water [RIA-68-1187] 19 p3296 N68-30956

Polographic study of corrosion preventive oils [RIA-68-1210] 19 p3297 N68-31060

Optical spectroscopy and oil drop techniques used in earch for stable fractionally charged particles called (COO-1112-155) 20 p3547 N68-33096

OLEFINS U ALKENES OLEIC ACID

Preparing flotation products, and measurement of laic acid on mineral surfaces using gas-liquid chromatograph [BM-RI-7135] 12 p1839 N68-22753

OLIVINE

Exposure of simulated lunar anil to simulated solar wind flux [NASA-CR-93535] 09 p1428 N68-19381 OMEGA NAVIGATION SYSTEM

Project management and phase difference and field stensity patterns for Omega system noise and antenna [P&B-PUBL.-979-8, V. 2] 21 p3722 N68-34748

OMNIDIRECTIONAL ANTENNAS NT MONOPOLE ANTENNAS NT TURNSTILE ANTENNAS

General method for designing ci has to obtain quasi-omnidirectional (NASA-TN-D-4254) U2 nal petterns 02 p0181 N68-11475 and testing of vertically polarized, idirectional Discase antenna for 2 to

Quasi-omnidirectional resonant array of circum-erential abunt slots in ring waveguides for narrow andwidth space vehicle applications at microwave

[NASA-TN-D-4362]

Omnidirectional microwave parallel plate broadband antenna for spacecraft communications [NASA-TN-D-4555] 15 p2423 N68-23918

17 p2912 N68-29058

OMNIRANGE NAVIGATION
U VHF OMNIRANGE NAVIGATION

tions of data [TM-2621/003/00] 04 p0481 N68-13006

research [DOC.-66SD295] 04 p0485 N68-13833

lation models on tal simu

Remote control of time shared computers for data and information processing [PB-175666]

Automatic digital computer program analysis [MAC-TR-43] 06 p0807 N68-15373

Conference papers from space seminar - multiprocessor requi and computer aids [NASA-CR-91825] borne multiprocessing ments, error control, 06 p0808 N68-15437

Brief review of on-line compu ter techniques 06 p0809 N68-15446

06 p0809 N68-15447

Debugging programs, graphic software, display programs, and utility routines for enhanced performance of on line medium size processor used for statistical information handling

[AFCRL-67-0605] 06 p0812 N68-15775

UCRL-17918) 11 p1668 N68-21082 odel for studying on-line, man-computer interac-

BBN-15931 13 p2033 N68-23259

BMWF-FB-W-68-02] 13 p2036 N68-24118 On-line, interactive refer niversal Decimal Classifi

tem for small digital

Time of flight analyzer be used on small on-line digital (EUR-3933.E) 18 p3041 N68-30201

On-line typewriter access to claimdexing and retrieving information (REPT.-67-23) 20 p3443 N68-32815

20 p3533 N68-33369 correlation and power

Mc/sec bas VELC-15041 04 p0479 N68-13448

09 p1303 N68-18616

Low cost aircraft landing aid providing localizer guidance with standard VHF considerational range receiver and instrumentation [NA-68-19] 17 p.2912 N68-29058

ON-LINE PROGRAMMING

Analog to digital converters for on-line correction of wind tunnel force and moment data [ARC-CP-946] 03 p0327 N68-12557

Handbooks for users of JOSS language (RM-5377-PR/1) 03 p0327 N68-12693

TRACE Model 2 user guide - instruction manual ontaining timeshared computer routines for restatistical manipulations of large, complex collec-

Use of time sharing on ne systems for operation

Bubble chamber geometry measurements on-line with PDP-5 to IBM 360-50 connection [PPAD-629C] 05 p0633 N68-14412

PL/1 program for increntime shared computers [MAC-TR-48] 06 p0803 N68-15096

On-line simulation in on-line process synthesizer

Computerized electronic of semiconductor thin film active de [NASA-CR-92929] circuit design, and evices 07 p0973 N68-16548

07 p0973 N68-16548 instrumentation and control of Canberra homopolar generator by on-line computer [EP-RR-11]

On-line computer data link for high energy physics

Construction and programming of automated obysics laboratory measuring system using on-line

nce retrieval system uning tion as index language in field of nuclear [AIP/UDC-7] 14 p2377 N68-25412

On-line image processing at computers using image dissector (TR-5) camera 16 p2629 N68-27777

On-line process o nuclear rocket engine [LA-DC-9460] for use in prototype

Digital progr pectral density NRC-MK-23 22 p3840 N68-35064 On-line data processing with hybrid computers [AFCRL-68-0353] 22 p3845 N68-35895

Flow charts for recognizing hand printed characters on-line in real time of NASA-CR-86108] 24 p4231 N68-37582

NBOARD EQUIPMENT
NT AIRBORNE EQUIPMENT
NT SPACECRAFT ELECTRONIC EQUIPMENT

planetary space prob NASA-CR-925241 06 p0906 N68-15940

Intermediate, and microwave infrared means by weather satellites [NASA-CR-91902] 06 p0870 N6 06 p0870 N68-16104

Onboard computer for control synthesis of man spacecraft [NASA-TT-F-11570] 06 p1243 N68-18203

and launch windows for Black Payload preparations, Brant sounding rockets [SRFB-009] 09 p1429 N68-18494

Parallel system analysis, poi tions, input-output achemes, ar tion of spaceborne multiple cor [NASA-CR-93431]. point to point communica-and organizational opera-09 p1308 N68-18536

Accuracy of simplified onboard midcourse guidance [NASA-CR-70791] 09 p1371 N68-18730 Performance/design criteria for aid in selecting on-oard checkout and data management system compu-

INASA-CR-61613] 09 p1309 N68-18742 Spacocraft attitude determination using single on-board camera [NASA-TN-D-4359] 09 p1438 N68-19275

Radio frequency interference analysis for onboard transmitter of ELDO launch vehicle configuration [ELDO-RFI-11] 10 p1498 N68-20102

Thermal control system for balloon flight packages INCAR-TN-321 10 p1614 N68-20336

Design and construction processor for onboard proce [NASA-CR-94331] work on spacecraft array using of experimental data 12 p1846 N68-22422

Analog to digital on small earth-orbiting sat [APL-TR-954] overter for telemetry system of 13 p2034 N68-23348 ents for determining

Free flight missile mer longitudinal stability derive [REPT.-66-053] 15 p2381 N68-26023 for vibration qualifica-

Vibroacoustic test method tion of Apollo flight hardware 16 p2788 N68-27999

on equipment onboard Soviet satellites, and transmission of space exploration feats. 754] 17 p2883 N68-28800 television transi

Procedures, ground equipment for optical communication t, and onboard equip-experiment of Gemini 19 p3244 N68-31768

guration of orbital on sysiological experiment 20 p3411 N68-33296

d support equipm d support equipm ation equipment with minima of and applicable to magnera NASA-CR-96543 21 p3639 N68-34262

Man computer roles avigation and guidan ware requirements for

[NASA-CR-86098] 22 p3908 N68-34882 methods for solution of optical data sources for orbit determination, and Automation of var-ptimum control pro lars-encounter carti-perational support e

NAVIGATION

ONE DIMENSIONAL PLOW Steady one dimensional gas flow with them is relaxation

01 p0049 N68-10109 d, lecompromible, leviscid Stability of one dimensi

(TAE-72) 01 p0051 N68-10337 roff-design conditions 04 p0436 N68-13442 Calculation of one dime (FTD-MT-45-472)

ical model for e

23 p4099 N68-37402

Applicat reliability, JPRS-445

SUBJECT

Synthesis implex sta

bility distri Cost opt correspond to given cor [TN-6] Solution games in ch RM-5567-

(COO-101) Applicati results in so [REPT.-1] Input-out RM-5540-

[R-1876]

Associate D1-82-069 RM-5456-IREPT.-67: Informati NASA-CR Operation craft noise [INC/C2/P5

Digital si [D6-19535 Managem MAM-68-Reference AAEC/TM

Joint Gk ganizing Co 20 April 196

ORC-67-4 ment planna (P-3600/17 Quantitat portance in [TR-54]

Planning 1 [PB-177801 Mathema line and and and costs [TR-36]

(PIBMRI-13

Aircraft

Mathematical model for dynamic behavior and re-sistance during one and two dimensional flow 05 p0703 N68-14898 Stability of one din

ompressible flows 09 p1329 N68-19003 [TAE-74] Moment approximation effects of thermal condu r determining combined in and radiation on one 10 p1615 N68-20458 [NSRDC-2525]

Self modeling problems of one dimensional or as-isymmetric supersonic flows of combustible gas mis-nare around cone, wedge, or curved wall [FTD-MT-24-299-67] 11 p1804 N68-21391 11 p1804 N68-21391 Quasi one dimensio tor with sonic it [ARC-29341] 13 p2055 N68-24143

One dimensional m on of ideal gas, and gas dynamics of supersonic wind tunnels [FTD-MT-67-66] 16 p2642 N68-27139 One dimensional energy spectra in turbulent boundary layer with analysis of surface roughness effects on spectral shape (CEMS7-95CYL10) 17 p2874 N68-29202

Dynamics of bounded one dimensional plasma [NASA-TN-D-4651] 18 p3143 N68-30031

Semidiscrete partial differential equation for one mensional linear conductive heat flow in solids AAB-TN-63] 18 p3188 N68-30300 Mathematical model of structural cavitation by wave propagation in bilinear fluids [CU-1-68-ONR-266/86/-CE]

19 p3264 N68-31331 One dimensional calc netohydrodynamic induc [UCRL-70795] ns on finite length mag-19 p3206 N68-31910

ent, two phase flow of gh nozzles 20 p3464 N68-33072 Behavior of single composinam and water droplets thro

One dimensional, unsteady flow of relaxing gases 20 p3393 N68-33219 20 p3393 Nos-33219 Validity of Vlasov equation for one-dimensional self-gravitating gas

21 p3769 N68-34221

Parabolic body shock wave propagation in one dimensional hypersonic flow [ARL/A-298] 23 p4048 N68-36562 23 p4048 N68-36562 Computer program for one calculations in cylindrical geo [ORNL-TM-1942]

23 p4101 N68-36735 Eulerian-Lagrangian time a cale relationship in one 24 p4288 N68-38412

U ANISOTROPY

ONSAGER RELATIONSHIP Onsager relationships for energy levels in crystals in uniform magnetic fields by use of effective Hamiltonian formalism

17 p2956 N68-28592

f Onsager reciprocity artic solids 24 p4350 N68-38108 of On relations for anisotropic viacoe [AFML-TR-67-424] OPACITY

Listing of authors, subjects and researchers on opaci-(LA-3002-MS, SUP. 2)

01 p0116 N68-10972 FORTRAN program for co um absorption spectra, electr on conduction data emputing stellar opacity ron scattering, and elec-[NASA-TM-X-63119] 08 p1216 N68-18064

Infrared opacity of hot water vapor based on tratoscope telescope observations of cool stars

08 p1241 N68-18086

OPEN CHANNEL FLOW

oretical, and engineering studies for construction at spillway model for flood water dams 7.-9] O4 p0491 N68-13815 of chute ap

OPENINGS
MT APERTURES
MT IRISES [MECHANICAL APERTURES]
MT PORTS [OPENINGS]
MT SLITS

Elimitoplastic deformation of cylindrical shells with openings and photoclastic reinforcement coverings [FTD-RT-67-421] 24 p4351 N68-38310 24 p4351 N68-38310 OPERATING TEMPERATURE

Internal temperatures, and gassing characteristics of nickel cadmium electrochemical cell discharge cycle [NASA-TM-X-63067] 04 p0449 N68-13611

IBM 7094 digital computer program for simulati-steady state operation of NERVA hot-bleed engin over full chamber pressure and temperature oper

[NASA-CR-91269] 08 p1202 N68-17267 OPERATIONAL CALCULUS

Tensor operators in U/n/ and operator calculus of 01 p0109 N68-10520 IC-67-52] ion method for calculating non-standard

OPERATIONAL HAZARDS

Operational safety of nuclear rocket engines, and untermeasure developments

24 p4276 N68-37982

03 p0371 N68-12190 nic behavior of steam cooled fast power reac-respect to stability, transients due to moderate tor with respect to stability, to perturbations at operating po ts, and accidents 21 p3723 N68-34107 AE-3211

21 p3723 N68-34107 erational significance of flash blindness - Navy som for minimizing hazards of flash blindness mena on performance capabilities of aviation mel program for m

21 p3643 N68-34535 ociated with nap-of-the-

21 p3644 N68-34543 Operational aspects of visual problems associated with use of low flying, high speed aircraft in close-sup-port and interdiction type missions into enemy territory

21 p3644 N68-34544

OPERATIONAL PROBLEMS

M-20 electronic digital computer operation and [FTD-HT-67-247] 05 p0633 N68-14471 Operational problem tarts and map displays of Royal Air Force in using 05 p0689 N68-14840

n problems in relation to Map and chart display des arious military aircraft flight ode requirements 05 p0655 N68-14849

Design, and operating trolyte pumps of fuel cel [BMWF-FB-W-67-03] ons for gas, and elec-06 p0768 N68-15249

Operational problems and performance of BR-5 eactor /1939-1966/, and maximum activity of fission 08 p1204 N68-17536

Operational reliability and failure probability of digital computers 09 p1310 N68-18802

Operational problems of us cumulators in homopolar gen {EP-RR-18} ses as current ac-09 p1275 N68-18904

Aerospace medical probl 10 p1473 N68-20574 Operational problems in graphic data processing by

[UCRL-70902] 14 p2228 N68-25146 Surface cleanlin lack of sufficient m testing problems arising from er of trained and knowledgeable

17 p2896 N68-29337 problems during low visibility landing of sup [NASA-CR-73241] 19 p3201 N68-32045

flight control problems [FTD-MT-24-224-67] 22 p3806 N68-35557 Aerodynamic load measurements during flight of agricultural aircraft in normal phosphorus spreading

[AR/SM-320] 23 p3990 N68-36513 effectiveness optimization for ital computer system 24 p4231 N68-37744 Operation and cost effective meralized model of digital con-

OPERATIONS RESEARCH
NT CRITICAL PATH METHOD
NT DYNAMIC PROGRAMMING
NT GAME THEORY
NT LINEAR PROGRAMMING
NT MINIMAX TECHNIQUE
NT NONLINEAR PROGRAMMING
NT SADDLE POINTS (GAME THEORY)

Engineering psychology aspects of human in processes - memory capacity and information coding and mnemitic activity, learning and open (FTD-HT-66-220) 02 p0168 N68-11236 Formation of operative memory units in human ac-tivities 02 p0169 N68-11239

tion of coded informa-02 p0169 N68-11240

ions research is in relation to phi proved social system

03 p0429 N68-12086 Priority model concept for flight operations planning of manned spacecraft [MTR-256] 03 p0414 N68-12227

Effects of design pa ers on profit potential of (REPT.-67/26-EP10) 03 p0301 N68-12298 Operation and utili of 5.5 MeV Van de Graaff

(BARC-291) 03 p0390 N68-12408 **Agglomeration fact** d ownership of indivisible

(NASA-CR-91058) 03 p0430 N68-12525 s with infinite number of 04 p0528 N68-12935

essing worth of complex Systematic proceed 04 p0599 N68-13095

Operational performs of linear accele ce, and improvement pro-SLAC-PUB-351) 04 p0491 N68-13756

Fuel element irradiations, as data of high flux isotope reactor [ORNL-TM-2017] and operational systems 04 p0541 N68-13757 Use of time sharing on-line systems for operations

04 p0485 N68-13833 Technical parameters, and operational planning for large heavy liquid bubble chamber 05 p0642 N68-14289

Mixed integer programming algorithms for site selec-on and other fixed charge problems having capacity [NASA-CR-91906] 06 p0807 N68-15421

Syntheses, and analyses of cybernetic problems athematical models for man machine systems wit primal control, operations research, economics research, eco ptimal control, operati robability statistics, and co 06 p0819 N68-15576 JPRS-44[14]

Development history, and applications of bernetics 06 p0819 N68-15577

Theory and applications of opti otimal control systems 06 p0819 N68-15578

Information value, and dyn selection of optimal control sys amic programming for 06 p0799 N68-15582

06 p0864 N68-15585

Analysis of single queue system for two priority request flows 06 p0864 N68-15586

Operational reliability of hierarchical branched con-rol system with ranked output elements 06 p0864 N68-15587

Classifications for self adjusting systems in automatic 06 p0820 N68-15592 Synthesis of optimal adaptive control system for nellite stabilization

06 p0820 N68-15596 cal models of competitive bidding trategy descisions under uncertainty 08 p1194 N68-17866 processes as strategy descir

Computer controlled state space model for remote atomic manipulation tasks [NASA-CR-93360] 08 p1137 N68-18080

Mechanical and electrical components, electronic quipment, general operation, and expansion studies of turn model experimental heavy liquid bubble 08 p1160 N68-18164

classes [P-3772] 09 p1357 N68-18265 g model for scheduling 09 p1357 N68-18347

ing reward system with several customer

dentify dynamic chara-

18 p3017 N68-3

ion and training, proup acc, teaching machines

19 p3216 N68-31447

20 p3527 N68-33006

21 p3642 N68-34532

s of Navy radio operators

22 p3810 N68-35207

22 p3817 N68-35942

22 p3818 N68-35945

rof theory with appli-

23 p4001 N68-36304

al pumping and weak

ng effects on side looking radar

Applications of mathematics in operations research, reliability, automata, pattern recognition, and auto-[JPRS-44576] 09 p1360 N68-18577 thesis of linear forecast systems with respect to ex statistical quality criteria 09 p1360 N68-18578 Stochastic structure in algorithm for analyzing PERT 09 p1360 N68-18583 Distribution parameters of linear dimensions in 09 p1362 N68-18681 Parametric environment related functional analysis coding system for combining cybernetics, operations research, and systems analysis in problem solving 19 g1433 N6E-19345 Selection procedures for restricted families of probability distributions with increasing failure rate [ORC-67-10] 10 p1547 N68-19903 ration of allocating sets of tolerances on sets of random imput variables, subject aints on output variables Cost optimization of a orresponding sets of ra given constraints on o 10 p1534 N68-19919 Solution concept for multiple person cooperative ames in characteristic function form games in characte (RM-5567-PR) 10 p1547 N68-20001 (COO-1018-1132) n development studies 10 p1503 N68-20197 Applications of research projects and experimental sults in social sciences 10 p1616 N68-20345 (REPT-11 Input-output change effects on digital computer [RM-5540-PR] 11 p1666 N68-20737 Systems analysis and operations research for developing environmental criteria and simulation methods for testing weapons and weapon systems weapon systems 11 p1808 N68-21505 [R-1876] Associated random variables defined and results ap-lied to reliability models of various types of main-[D1-82-0696] 13 p2093 N68-23394 Network analysis using algorithms and computer programming for operations research problems [RM-5456-PR] 13 p2095 N68-23997 Economic growth analysis for planning advanced technologies [REPT.-67SD257] 14 p2376 N68-24494 Information theory of complex systems [NASA-CR-94698] 14 p2221 N68-24573 Operations research on methods for reducing aircraft noise (INC/C2/P5) 14 p2188 N68-25552 Digital simulation for operational analysis of time-equency collision avoidance system for aircraft D6-19535] 15 p2385 N68-26058 [D6-19535] Management planning for effective use of federal [MAM-68-61 15 p2580 N68-26275 Reference bibliography for closed loop water tunnel [AAEC/TM-410] 16 p2639 N68-28012 Joint Global Atmospheric Research Program Or-ganizing Committee report of first session, Geneva, 16-20 April 1968 17 p2989 N68-28827 Operational evaluation of filtered and unfiltered white aircraft instrument lighting 17 p2834 N68-29253 System reliability approximations using modular [ORC-67-42] 18 p3106 N68-30517 Soviet news items on cybernetics applications to perations research, aerospace medicine, and manageoperations researce ment planning [P-3600/17] 18 p3053 N68-30551 atitative definition of notion of component im-ce in multicomponent coherent structures 1) 19 p3283 N68-31265 TR-54] Planning for regional airport system [PB-177801] 19 p3389 N68-31736

Mathematical models of inspection along production e and analysis of various quality control procedures

Aircraft integrated data system for accident in-stigation, project design, reliability, maintenance, d mission performance analyses

19 p3286 N68-31882

21 p3623 N68-33875

20 p3485 N68-32524

ions for system re-

and costs [TR-36]

liability and availability [PIBMRI-1365-67]

Closed loop, manual, time optimal, bang bang con-trol of high order systems using concept of switching surface Application of human transfer functions in design adjusts of hunar landing simulator drive system 06 p0784 N68-15931 Adaptive behavior of human operators to failure transitions in controlled element dynamics, and identi-fying unknown sampling frequencies in dynamic [NASA-CR-93766] (17E-19

Research methodology for studying problems of analysis, design, and control in complex service systems Applicability of nonlinear time domain maryan problem of modeling human operator /pilot/ NASA-TM-X-60996] 17 p2830 N68-29920 [WMSI WORKING PAPER-139] 22 p3882 N68-35265 Linear systems analysis to it eristics of human operator has NASA-CR-86067] Mankine cycle power conversion sys [AGC-1464] rmance for organic n systems 24 p4199 N68-37637 Soviet problems in e-mamics, operator per OPERATOR PERFORMANCE and psychometries [ATD-68-34-108-2] Engineering psychology aspects of human in recesses - memory capacity and information oding and mnemitic activity, learning and open mearch narine sextants NASA-TN-D-4781) [FTD-HT-66-220] 02 p0168 N68-11236 demory and learning processes in operator handling 02 p0169 N68-11237 nposition of mnem ry reproduction of hu activity as functional Code-copying capabilities of 02 p0169 N68-11241 in identifying and con-chine system 04 p0464 N68-13901 conditions (RM-392) ted task loadie ndy of compensatory ity of linearity theorem scribing human operatarget recognition Effect of auxiliary magni-looking radar turget recognition [AMRL-TR-67-134] 06 p0780 N68-15909 rmation processing rate to tracking tasks 06 p0781 N68-15911 Reliability evaluation of parameter tracking we of proposed crossover model for measuring in operator performance in low order compens manual control systems. eractions during per tasks using high inertia play and control systems manual contro 06 p0781 N68-15915 PERATORS [MATHEMATICS] Operator formalism in optic monochromatic light absorption [AD-636474] 06 p0782 N68-15917 de, pulse width human ag discrete outputs in ented Gaussian random 06 p0782 N68-15918 to assess random sand data model of huma IC-67-52) 06 p0782 N68-15920 06 p0783 N68-15921 tem engineering mode scle spindle and input tering manual control

06 p0783 N68-15923

for eliminating human manipulator control 06 p0783 N68-15925

06 p0784 N68-15928

06 p0784 N68-15929

10 p1509 N68-19930

in methods and devices radar operator training 15 p2399 N68-25762

15 p2400 N68-26256

y degree of stress in hom

cts on human physiological

16 p2605 N68-27534

nan operator adaptive finite state mathematical

Information processing rate as influenced by degree of response difficulty studied in discrete tracking task [NASA-TM-X-59802] 16 p2603 N66-27160

Finite-state machines and evolutionary programming is representing and analyzing performance of human perator in control of dynamic systems.

Acceleration stress effect raponses, control task per

human operator charact (NASA-TM-X-59063)

for representing an operator in control (NASA-CR-1112)

01 p0098 N68-10076 Generalization of sum re by direct application of clos of hermitian operators ules for quantum mechanics sure relations for eigenstates 01 p0104 N68-10296 Tensor operators in U/n/ and operator calculus of Matria elements of translation generators of Poin-care algebra with respect to Lorentz-basis [NP-16860] 01 p0112 Nes-10699 or equation for flat shell General nonli [FTD-HT-66-745] 02 p0274 N68-11171 Collective compact sets for aproximating nonlinear operators of sign reals eigenvector problems [JARC-178-75] 02 pa227 N88-11222 Operator method for humanic analysis on locally Operator method for compact Abelian group [MRC-TSR-725] 02 p0228 N68-11258 Iterated deferred or na for auniment operator cretization algorithms 02 p0229 N68-11502 equations - convergence of d [MRC-TSR-763] Collectively con d totally bounded sets of 02 p0229 N68-11517 Friedrichs-Scholev averaging operator used to construct continous functions autisfying Cauchys theorem.

[REPT.-67-23] 02 p0241 N64-11705 Friedriche-So topology, and monotone Problems in algebra, homogenous operate (NASA-CR-90753) 02 a0231 N68-11905 of vacuum expectation perators 05 p0713 N68-14434 Integral representations lines for products of field of

rs generalised to complex Banach spaces MRC-TSR-785] vely compact seas of Spectral prope mear operators MRC-TER-767) 06 p0063 1460-15528 Uniqueness theorem for partial differential equation and representation of potential ocationing operator [MRC-TSR-783] O6 poets 1668-15533 ni equations for solution of hematics, mechanics, and so

[FTD-MT-45-03] conditions of strong stability of Hamilton is unlimited periodic operational coeffi-06 p0865 N68-13603

SUB

lite

intr [N/

tion tion [Q-

tech (NA

G

ratio

la

C

tecti addi [NA

Ti

Q

(FI

tion, catic [NA

Fe

De

Pr

Ce Gem prov

Co

Pe

(IZ p0241 N68-11864

ville polynomial opera-us involving approxima-06 p0865 N68-15608 fect indices of Hermitian operators in case of linear operators in Banach infect is TG-230-T53. 06 p0881 N68-15880 tion processes do not converge terms of linear polynomial opera ous functions for which Fe Conti Lagrange interpolation evenly generalized in term 06 p0867 N68-16031 Absence of positive discrete spectra for Lapince operators of Dirichlet problems in unbounded domains 06 p0867 N68-16043 ity matrix analysis 06 p0868 N68-16105 [UCD-CNL-84] Weak Newton method of approximating zeros of onlinear operators from Banch space X to Banach (REPL-67-7) 07 p1013 N68-16187 Diagrammatic calculus for to nsor operators in unita-[AD-662755] 07 p1014 N68-16515 Matrix theory, and ca operators in finite dimes [RADC-TR-67-376] entation of linear op p1357 N68-18267 teins theorem and diffe (AD-664473) 09 p1358 N68-18445 Faithful represe ns of algebras of test functions 09 p1388 N68-18601 Maximum principle for one cleas of operators in flanach space 09 p1362 N68-18640 Criteria on compactness of imi oesiling operator 09 p1362 N68-18651 Inverse operator metho ulticurcuit control system od of synthesizing automatic 09 p1319 N68-18797 Derivative method in many body theory 09 p1395 N68-19230 Generalized theory of compact operators and Fredholm operators relative to Von Neuman algebra [TR-14] 09 p1366 N68-19463 egral operators on Hilbert 10 p1544 N68-19597 havestigation of Yukawa-type interaction with baryon, antiburyon and means multiplet invariant under group U/6,6/ (IC-67-10) 10 p1570 N68-20439 ed sets of prec inpact linear operators 11 p1721 N68-20587 ns of algebra of bounded operators in 11 p1722 N68-20642 ator of field operators at Lie fields for which commu two space-time points is linear 11 p1725 N68-20787 tic solution of one operator differential 11 p1727 N68-20906 Variation method of determining asymptotic havior of negative spectrum of one dimensional dif-11 p1728 N68-20914 perturbation theory with application to annihilation-creation operator 11 p1754 N68-21109 Formalism for C-m quantum field theory [TH/68/6] nerating functionals of 12 p1913 N68-21848 s of continuous, weakly ar mappings on operator 12 p1897 N68-22146 s of Green function of (IC-67-231 12 p1922 N68-22158 e bilinear forms in Hilbert 12 p1898 N68-22206 on tables for m rix elements of atomic Calc quantity operators of partially (ANL-TRANS-563) 12 p1935 N68-22729

ves model - unitarity 12 p1937 N68-22797

metry [IC-67-18] [TTF-67-20]

Operators and matrix theory solutions for botters problems

22 p3928 N68-35195

Eigenfunction expansion perators in Hilbert space ns for self adjoint biline 13 p2094 N68-23549 [D1-82-0677] Fundamental theorems on extension of Hermitian operators and application to theory of orthogonal Solving sings tion or integral operat [NOLTR-68-105] TG-230-T5361 15 p2493 N68-26511 Condition for discret Upper and low for eigenvalues of integral Schroedinger operato [APL-CLB-3-T-554] [TG-979] 15 p2494 N68-26630 inite difference appr formly elliptic operate Soviet textbook on fur methods, including opera space, conical space, qua-ized functions tional analysis concepts ar ors in Hilbert space, Banac turn mechanics, and gener Convergence of operator s kov processes [FTD-MT-65-573] 16 p2693 N68-27174 e groups related to Generation of guivalent norms classical network theory resul 16 p2696 N68-27459 berg and cu urrent-like operators, and in field theory 16 p2725 N68-27961 [FTF-67-41] ties of paramagnetic salts [AFCRL-68-0363] Classification and cons jection operators for re subspaces of total Hilbert [NASA-TN-D-4633] on of open-channel pro-ement collisions using Feynman formalism tators and functions of [NASA-TN-D-4857] of system 16 p2732 N68-28265 ate density operator for Space time locali 17 p2919 N68-28536 (CNAEM-53) ic solution to dynamical stem with known sym-17 p2928 N68-28647 Convergence orithms for soli of discretization al-sear operator equations OPERATORS (PERSONNEL)

NT AIRCRAFT PILOTS

NT PILOTS (PERSONNEL)

NT TEST PILOTS 17 p2905 N68-28683 Normal form of open (JINR-P2-3739) rs in Fock space 17 p2941 N68-29429 Feasibility of comp operties of set of linear [NASA-CR-917] 18 p3102 N68-29791 Continuity of function associated with Fredholm operators in Banach space, with application to perturbation theory, is analyzed 18 p3103 N68-29974 ons of evolution and used in analyzing h pensatory tracking (NYO-1480-87) 18 p3106 N68-30532 Convergence of grid po parabolic differential equal [NASA-TT-F-11815] ojection method using 18 p3107 N68-30632 Singular elliptic operat liptic partial differential o [AFOSR-68-1147] tions of linear el-18 p3107 N68-30645 [NASA-CR-87264] of covariance operators, and 19 p3236 N68-31016 [NASA-CR-87265] n Hilbert space 19 p3299 N68-31045 m antisubmarii [AD-668968] tions for set of interacting boson rm generalized Lie algebra 19 p3328 N68-31254 operators on reactor physics topics [ORNL-TM-2034, V. 3] of functions for operator (AFOSR-68-1295) 19 p3250 N68-31853 Analytical properties of exponential operator in Hil-19 p3318 N68-31975 of lower bounds of eigenvalues and noss in scattering of electrons from **OPHTHALMODYNAMOMETRY** 20 p3542 N68-32485 ons of operator theory and partial differential equations [AFOSR-68-1579] 20 p3514 N68-32696 U EYE EXAMINATIONS orming graded algebra for coinciding dmitting asymptotic expansions in rs and powers of basic differentia Differentioids forming a with operators admitting terms of multipliers and operators [MRC-TSR-771] 20 µ3515 N68-33059 space of radon measures OPTICAL AMPLIPIERS
U LIGHT AMPLIFIERS 21 p3710 N64-33691 OFFICAL COMMUNICATION Coordinability in a two level system [SRC-68-3] 21 p3713 N68-34453 Approximate internal symmetry, interaction Hamil-nian, set of operators, and structure of SU/3/ algebra 22 p3919 N65-34826

SUBJECT INDEX Fractional integral operators for solving non-omogeneous differential equations 22 p3899 N68-35201 ems using tran 22 p3900 N68-35394 of negative spectrum of 22 p3901 N68-35479 ons for eigenvalues of 23 p4086 N68-36016 igroups applied to Mar-23 p4086 N68-36035 or techniques to extend its to linear time-variable 23 p4034 N68-36047 Operators derived for electrical and optical proper-23 p4151 N68-36490 for expressing iterated comm 23 p4088 N68-36525 on operators for unphysical a groups in field theory 23 p4124 N68-36944 Hartree-Fock calculations for light nuclei [IC-68-30] 23 p4130 N68-37112 Weyl coefficients defined as matrix elements of Weyl operators in unitary groups 24 p4310 N68-37619 ster assisted flight controller 04 p0485 N68-13897 Human operator describing functions with visual and tactile displays 06 p0780 N68-15906 nt of frequency and time domain methods yzing human control responses during com-O6 p0780 N68-15910 Systems analysis of TEPPS computer program for establishing performance standards of corrective main-tenance and operator tasks [AD-665689] 15 p2399 N68-25748 te pulse width model of 15 p2400 N68-26158 oral tasks of personnel 16 p2603 N68-27325 al for nuclear reactor 20 p3531 N68-33078 n operator as optimal controller and information processor [NASA-CR-1151] 20 p3413 N68-33304 Visual masking using different test stimulus patterns relationship between human visual perception latency and object luminance during high velocity flight: 21 p3642 N68-34531 lysis of flight stress- in-19 p3214 N68-32154 OPTICAL ABSORPTION

U ELECTROMAGNETIC ABSORPTION

U LIGHT TRANSMISSION Laser detector utilizing photodielectric effect in coled semiconductors applied in communication (AFOSR-67-2138) 02 p0257 N68-11127 Optical design co d communications,

DEX

35201

35394

rum of

35479

ues of

36016

Mar-

36035

extend

36047

roper-

36490

mmu-

36525

ysical

7112 Weyl

7619

roller

3897

dand

thods com-

5910

0753

5748

el of

6158

7325

ector

3078

3304

ency

1531

in-

1154

t in

127

Statistical behavior of photoelectrons in photodetec-tors for describing sampling theorems in communica-[Q-71] Data transmission in ideal phot (FTD-MT-24-151-67)

ton channel 11 p1663 N68-21584 Evaluation of microwave, millimeter, and optical omnunication systems for space communications 12 p1843 N68-22019 Frequency stability of carb optical communication system [NASA-CR-95055] n dictide laser used in 15 p2476 N68-25723 Optical space comm technology satellites [NASA-TM-X-63233] on laser for applications 15 p2477 N68-25773 Frequency stability of carl deep space communication n diaxide laser design for ications 15 p2477 N68-25782 Gallium arsenide la cients, and semicond [NASA-TN-D-4608] 15 p2507 N68-25868 electricity, signal to noise sed to Poisson process 15 p2426 N68-26231 Information capacity of pl tion of optical systems for init [NASA-TT-F-11744] on field and option tation transmission 16 p2626 N68-28063 lence effects on per-17 p2897 N68-29109 Comparison of alternative me communication from deep spa space navigation by orbiting spac [NASA-CR-95571] means for high data rate space probes, and deep spacecraft 17 p2855 N68-29521 maximum likelihood de-cemes in background of Optical communicatection of M-ary Point additive Poisson noise [NASA-TN-D-4623] 17 p2855 N68-29528 rier methods in optical leations 18 p3033 N68-29822 Quantum generator light beams as detectors and as (FTD-HT-23-809-67) 18 p3083 N68-30106 Computer simulation investigation of control and acking problems associated with optical communication systems for deep space ps [NASA-CR-86090] es 19 p3242 N68-31730 Conference presentations on optical communica-tion, sensing, and tracking technologies for space appli-(NASA-TM-X-61037] 19 n3243 N68-31759 Equipment and ground stations for laser radar and ommunication experiment MSC-4 on Gemini 7 flight 19 p3288 N68-31760 Nike-Ajax system and Real-t Optical Tracker /RADOT/ m spacecraft tracking and commun eal-time Automatic Digital multimode telescope for ication 19 p3243 N68-31761 Feasibility study for tention system for Mars probe 19 p3243 N68-31762 19 p3243 N68-31762 Spherical Modulation Inducing Retrodirective Opti-cal System MIROS/ for laser communication relay via 19 p3243 N68-31763 ssibility of optical space 19 p3243 N68-31766 nt, and onboard equip-experiment of Gemini 19 p3244 N68-31768 Programs and plans for o tical communications in and laser radar for Lunar 19 p3288 N68-31769 Collection and interpretation of statistical data from Gemini 7 optical communication experiment for im-proving atmospheric models 19 p3244 N68-31770 r optical technology exepts and techniques in its of Apollo Applicat 19 p3244 N68-31772 (ECOM-2967) 1 10 20 p3435 N68-32355

.11 p1663 N68-21558 Optical module Laser aiming dans satellite optical comm [NASA-CR-61975] Haystack ante OPTICAL COUPLING and animals [NASA-CR-92318] OPTICAL DENSITY

20 p3439 N64-33141 telescopes for estellite studies on es and optical space communica-Airborne lasers and te tmospheric properties NASA-TM-X-597861 ZI p3700 N68-34676 Design of pulse pos nication system [NASA-TN-D-4814] n optical com 22 p3834 N68-35174 Optical modulator de transmission using base (FTD-MT-24-222-67). 22 p3886 N68-35445 Direct current biased reception of wideband of [NASA-TM-X-63336] enductive detectors for oxide laser signals 23 p4146 NSS-36032 odels for synchronous systems 23 p4671 N68-36186 Design considerations ion links between sync itiple laser communic TR-0158/9230-02/-1] 23 p4020 N68-36503 Photoelectric function co lectrical and optical signals rters for conversion of 23 p4039 N68-37300 OFFICAL CORRECTION PROCEDURE nna reflector surfa rface improvement 13 p2031 N68-24298 Astrometric and photogrammetric plate reduction chaiques evaluated for error reduction in photographic satellite tracking NASA-CR-95379] 17 p2883 N68-28630 Analytical methods for determining signal errors due geometric deviations and nonlinearities in coherent to geometric deviations optical data processors [NASA-CR-95803] 18 p3083 N68-30047 Advanced computer design techniques for optical stems based on ray tracing 19 p3249 N68-31765 Physical and optical coupling, apparent and real rela-tive movement, and distributions and mass ratios of bi-nary stars 05 p0738 N68-14693 Optical mode coupling in lasers by intracavity time varying perturbation 13 p2078 N68-23096 Thin film optical trans [C7-929.1/501] 15 p2438 N68-26957 cal backscatter for con-oxygenation in humans 23 p3998 N68-36572 Correlation of heat of finisher to the control of t m and optical density in sing proposed spectrum 02 p0224 N68-11288 Absolute optical flux of eclipse on 18 October 1967 [NASA-CR-92527] stions of total moon 06 p0908 N68-15167 [RADC-TR-67-638] 13 p2066 N68-23253 of quantitative stress sciarization study on 22 p3974 N68-33610 OPTICAL EMISSION
U LIGHT EMISSION
OPTICAL EMISSION SPECTROSCOPY Reflection spectra of optical phonons in hexagonal sized crystals of cadmium sulfide and selentism 04 posses N68-13465 Optical heterodyne spectroscopy, and ultrasorralisation diffraction of light emission from liquid a faces and single crystals 04 p0545 N68-13468

al emission produced by proton and bydr 19 p3321 N68-3 attenuation in Brillouis que 23 p4110 N48-37279 OPTICAL EQUIPMENT
NT ASTRONOMICAL TELESCOPES
NT BALESTIC CAMERAS
NT GAMERAS

CINETHEODOLITES
COLLIMATORS
CORONAGRAPHS
DIFFRACTOMISTIES
ELCTROPHOTOMETERS
ELLIPOMETERS
EVERBERS NT DUFFRACTIONATIERS

NT ELLUSOMETERS

NT ELLUSOMETERS

NT FYEFFECES

NT FRAMING CAMERAS

NT HELDOMETERS

NT HIGH SPEED CAMERAS

NT HIGH SPEED CAMERAS

NT HIGH SPEED CAMERAS

NT HARAED SPECTROMETERS

NT HIFRARED SPECTROMETERS

NT HIGH SCATTERING METERS

NT PRESSORES

NT PRODECTIONATIONS

NT PRESSORES

NT PRIMETERS

NT PRESSORES

NT REFLACTOMETERS

NT REFLACTOMETERS

NT SPECTROMETERS

NT TRANSITS

NT TRANSITS

NT TRANSITS

NT TRANSITS

NT TRANSITS

NT TRANSITS

NT VICENTIAL VICENSES

NT TRANSITS

NT VICENTIAL VICENSES

NT VICENTIAL ol poles Nes-101 integration of experiments, quescent en-t, reliability prediction, and ground station for optical technology development of Topics for American d2 p0266 N68-11317 and state and option lid state devices, optical 03 p0330 NGC-11930 ical and photographic [ESD-TR-67-467] ion criteria for o NAVTRADEVCEN-IH-137 05 p0343 N68-12289 Design and development of high resolution man tics technology chi 03 p0344 N68-12524 \$-44272 0 TO 07 p1038 N68-17841 melty flower OE p1177 NSO-17485 United bydrogen byddd Micros, and cylinds place projection of hi [DLR-MITT.-67-16] Design concepts for M P1139 NOS-101 AFCEL-48-00221 10 pisst Nee-Temperature effects actrolytic chromium sirror NASA-CR-94043) Combined fluoresci effection for multico 11 p1715 Nee-21007 12 ploss Nes-20115 BM-RI-7142) 14 p2192 Nos-249

ments raphy IONE

Kirc

(NAS

Sun techni of solid (ESD-

Con light n slides i [AMR

Opti film ci (SC-C

Opti in high [ARL

Fligh

Airb

NAS/

(LA-3

Commicroc tion of (UUIP-

Intri

(FTD-I

Optio

Optical marking equipmen stereophotography applications [TR-39-TR] Perceived changes in size and shape of highly luminous target and relation to associated stimuli [NASA-TM-X-39064] 16 p2606 N68-28157 nt for variable scale 18 p3071 N68-29719 lon-optical system for increasing yield of ion source OPTICAL IMAGES for electromagnetic separ [FTD-MT-24-231-67] 18 p3145 N68-30618 OPTICAL MASER MODULATION U LIGHT MODULATION Dynamitron accelerator and its optical system and OPTICAL MASERS U LASERS NP-173591 18 p3056 N68-30623 U LASERS
OPTICAL MEASUREMENT
NT ASTRONOMICAL PHOTOMETRY
NT COLORIMETRY
NT ELECTROPHOTOMETRY
NT PHOTOMETRY
NT POLARIMETRY
NT SPECTROPHOTOMETRY
NT STELLAR SPECTROPHOTOMETRY
NT ULTRAVIOLET PHOTOMETRY
NT ULTRAVIOLET PHOTOMETRY
NT VISUAL PHOTOMETRY
NT VISUAL PHOTOMETRY Equipment and methods for continuous measure-ent of microstructure of clouds and fog by small an-RAE-LIB-TRANS-1301) 19 p3318 N68-31950 Resources analyses and or plan for optical technology Ap [NASA-CR-61926] estimates of program lo Extension System 20 p3595 N68-33483 Soviet developme [ATD-68-16-75-1] 22 p3877 N64-35453 ed diffraction pattern to describe coherent optics [NASA-TM-X-63347] 22 g3918 N68-35749 Performance of electro-optical gun bore telemetry [CEA-R-3118] 03 p0318 N68-12725 Radiometric, and in measurements by Gemin [AFCRL-67-0563] [PA-TR-3708] 24 p4226 N68-37924 etric optical spectral OPTICAL FILTERS

NT INFRARED FILTERS 04 p0574 N68-13102 Photography, expansion properties, and optical in-omogeneities in heavy liquid bubble chamber 05 p0661 N68-14299 Specifications for dichr tive multicolor large scale [RADC-TR-67-513] ers employed in addi-01 p0015 N68-10272 dispersion of pinacyanol leic acid 05 p0610 N68-14380 Multilayer, dielectric tion using cathodo ray t [NASA-TM-X-58013] cal filter evalu (REPT.-11-32-67) 04 p0542 N68-12909 Optical interferometry concepts for ultraprecise geodetic baselines with accuracies approaching one part in ten to the eighth power [RN-24] 05 p0662 N68-14661 matical spec for FORTRAN Optical m/FOLDP/ Lens Design Program INASA-CR-94323] 12 p1916 N68-22242 05 p0662 N68-14661 of filtered and unfiltered Optical system for 3.5 m telescope, astronomical sirrors and mountines, and fused silicon disk for Euors and mountings, and fu an Southern Observatory 17 p2834 N68-29253 Cathode my tube with a techniques for viewing un [NASA-CR-1185] reciprocal optical filtering r high ambient 20 p3452 N68-33224 06 p0844 N68-15371 Internal reflection spectros opy of powdered quartz [NASA-CR-92572] nference proceedings cover-es, photography, equipment, 06 p0796 N68-16097 Interference optical measuremen radiation by increased thickness on in [ISL-T-25/66] 07 p its of microwave on impacted thin film 07 p1034 N68-16156 23 p4167 N68-36492 restion transits in 23 p4168 N68-36494 07 p1061 N68-16848 for filters to protect Ray optic analysis of lateral wave excitation on asma half space with symmetrical variation 07 p1063 N68-16931 REPT.-6339-F) 24 p4207 N68-37897 rrow band optical fi factic X ray asurce de-try, and redundancy se radiation coeffi-[NASA-TM-X-53760] 07 p0965 N68-16932 24 p4228 N68-38161 ues and optical diagfiye protecti transmittances using 08 pl164 N68-18094 REPT. 314] 24 p4263 N68-38446 Optical methods for sound velocity measurements in OPTICAL GENERATORS (TR-17) 10 p1559 N68-20003 OPTICAL GYBOSCOPES Interferometric measurements of electron density in plasma pinch with rotating high frequency field [LRP-36/67] 12 p1950 N68-22736 ocing machines for aeron utical and gyroscopic [FTD-MT-24-98-67] 06 p0843 N68-15156 ts of oil contamination in op-Ultraviolet m OPTICAL HETERODYNING tical mirrors [NASA-TN-D-4612] 14 p2259 N68-25375 rical technology, heter t, and atmospheric of se detection, commu-s for Apollo externi X ray and optical electron distribution fu [NP-TR-1624] nts for determ toroidial systems 14 p2318 N68-25399 [NASA-CR-90305] 02 p0180 N68-11099 defect complex in irradiated silicon [NASA-CR-94916] 15 p2533 N68-25718 [NASA-CR-90304] 02 p0270 N68-11100 Optical and X ray and lanes in synthetic coru of fracturing and cleavage Optical propa nt atmosphere, optical sceborne heterodyne 16 p2689 N68-27378 ting zodiacal light out-02 g0180 N68-11105 16 p2763 N68-27510 acopy, and ultrasonic nimon from liquid surated flow around oscil-ck angles 17 p2804 N68-29427 04 p0545 N68-13468 [NAL-TR-148] dyne system for broadband al vibrations and calibration of of hydroxide radical in cyanide radical using in-vave excitation, and gas 07 p1000 N68-17052 d spectro NASA-CR-73137 [AFCRL-68-0247] 18 p3019 N68-29806

Advanced computer design techniques for optical stems based on ray tracing 19 p3249 N68-31765 Diffraction method for measuring intensity curves of electrons scattered from helium, neon, argon, krypton, and sense 20 p3544 N68-32896 Test equipment for in-situ optical reflectance measurement of zinc titanate over Lexan target material on RAE-A satellite after proton and ultraviolet irradiation [NASA-TM-X-63354] 22 p3896 N68-35589 hoton beam analysis of in graphite 27 p3932 N68-35673 onning technique and fluorine distr (ORNL-TM-2238) dolite T1 for angular measurements at oints and for polygonometry 22 p3881 N68-35974 (JPRS-46457) Optical and mi plasma discharge [AASU-287] rements of 2450 MHz alar nitrogen 23 p4139 N68-36259 Airborne atmospheric vicinity of Crater Lake, O [SIO-REF.-68-18, PT. 1] ric optical measurements in 23 p4054 N68-36408 sive satellite trail from ball [NASA-CR-97187] rtic evaluation of pasc camera photographs 23 p4168 N68-36510 rticle size and distribution from Fraunhofer [AEDC-TR-68-125] 24 p4260 N68-38476 (AEDC-1R-09-125) 24 p4260 N68OPTICAL MEASUBBNG INSTRUMENTS
NT CINETHEODOLITES
NT CORONAGRAPHS
NT DIFFRACTOMETERS
NT ELECTROPHOTOMETERS
NT INFRARED SPECTROPHOTOMETERS
NT INFRARED SPECTROPHOTOMETERS
NT INFRARED SPECTROPHOTOMETERS
NT LIGHT SCATTERING METERS
NT MICROOPENSITOMETERS
NT MICROOPENSITOMETERS MICRODENSITOMET PHOTOMETERS POLARIMETERS REFLECTOMETERS REFRACTOMETERS SITOMETERS SEXTANTS SPECTROHELIOGRAPHS SPECTROPHOTOMETERS THEODOLITES
TRANSITS
TRANSMISSOMETERS
ULTRAVIOLET SPECTROPHOTOMETERS
ULTRAVIOLET SPECTROPHOTOMETERS Optical design concept, optical communications of optical technology Apoll [NASA-CR-90530] 02 p0241 N68-11864 03 p0333 N68-12314 ertial guidance systems for unmanned interp [NASA-CR-86011] ary flight 03 p0367 N68-12345 sility of opti or with digital output for [ESRO-TM/P/-95] 04 p0534 N68-13240 etric recording 05 p0699 N68-14295 for aerosol density mea-05 p0661 N68-14373 e of photoplastic film recording, an (\$-67-1139) 06 p0847 N68-15873

Laser appli stics, cinema

ric velocity me (ISL-T-31/66)

Optical and m

Photon fill-tin (UCID-15224)

Motal target foils for low energy ion transmission

19 p3325 N68-31131

ence measurements of crystals 19 p3298 N68-31648

[COO-1053-9]

suring atmospheric degs [NASA-CR-86030]

Appl in detec [NASA Optio NASA improduced in the last of the Confi Cations [NASA

07 p1004 N68-16152

ection imagery for im-

07 p0994 N68-16153

strumentation for mea-of laser beams 07 p1004 N68-16369

lications of various in-

07 p1001 N68-17202

07 p1001 N68-17203

ne of Fabry-Perut spectrometer 07 p0999 N68-16879

Resolution criteria for Fabry-Perot and Fizeau multi-ple beam interferometers

AGA

INASA-CR-73167]

OPTICAL ILLUSION

07 p1000 N&E-17069

10 p1478 N68-20560

Optical liturion effects in astronaut vision during nee flight

n effects on optical properties of educad photologicas and

04 p0558 N68-13682

SUBJECT INDEX interferometry applied to optical 07 p1001 N68-17204 23 p4108 N68-36528 for testing of parabo-lor large high resolution by balloon at high alor particle impact stu-(NASA-CR-73266) 23 p4062 N68-36623 07 p1001 N68-17205 180 degrees Celaius 23 p4136 N68-37388 ILAL-11821 interferometer, and difthods for solution of cal data sources for it determination, and ronic equipment 07 p1001 N68-17206 itions of Moire, Twyms 23 p4099 N68-37402 07 p1001 N68-17207 and position and frequency ns of Fizeau interferometer a produced by tunable single U OPTICS OPTICAL MICROSCOPES Polishing and grinding of ceramic materials for transmission electron and optical microscopy
[BNWL-652] 18 p3094 N68-30580 07 p1001 N68-17208 ersion of convolution product for optical instru-with linear filters - literature survey with bibliog-U LIGHT MODULATION (ONERA-NT-121) 08 p1155 N68-17433 OPTICAL PATHS Kirchhoff-Fresnel analy surements on radio wave p [NASA-CR-91264] Normalized probability distribution of photon opti-cal paths for radiative transfer equations to determine diffuse reflection and transmission by cloud and dust hifting by aurora 08 pl 170 N68-17962 Design, and perform INASA-CR-70496] 09 p1384 N68-19219 09 p1335 N68-19015 OPTICAL POLARIZATION Research objectives of astronomy and optical space stronomy, and development of large orbital telescope 10 p1595 N68-20378 Optical characterization of orientation of amorphous polymers and amorphous parts of crystalline polymers [ONR-TR-94] 10 p1577 N68-19884 immary of research on solid state devices, optical hniques and devices, materials research, and physics olids Second harmonic light generation in pieacelectric crystals with natural optical activity by circularly polarized laser beam 11 p1770 N68-20816 TR-554] 13 p2140 N68-24249 Comparing behind lens meter readings and incident light meter readings in producing 35 millimeter color sides for technical training classes [AMRL-TR-66-112] 11 p1697 N68-21160 Parameters of reflected polarized light by terrestrial Optical profilometer for measuring precision thin film circuit elements [SC-CR-67-2509] 11 p1698 N68-21244 Single and multiclem tor feasibility from po-ducting and electrolum [CAL-RF-2455-0-1] tro-optic image subtrac-on control of photocon-16 p2714 N68-27565 Optical measurement of radial density distributions in high speed confined air vortex
[ARL-67-0234] 11 p1685 N68-21303 Spin dependent atomic re d extraction of helium ph larized helium 3 gas sour actions in helium discharge is 3 ion beam from optically Flight prototype model meteor flash analyzer [NASA-CR-92047] 11 p1699 N68-21440 22 p3925 N68-35012 OPTICAL PROPERTIES
NT ABSORPTIVITY
NT BIBGEPINGENCE Airborne Fraunhof [NASA-CR-92065] 12 p1847 N68-21919 Recent techniques and instrumentation for solar of [NASA-CR-94365] BIREFRINGENCE BRIGHTNESS 12 p1966 N68-22253 COLOR DICHROISM LUMINOSITY Multiple image objective system for rotating mirror camera to record progress of nonplanar [LA-3797] 12 p1877 N68-22804 LUMINOSITY
OPACITY
PHOSPHORESCENCE
PHOTOCONDUCTIVITY
PHOTOELECTRIC EFFECT
PHOTOELECTRIC EFFECT
PHOTOELICTRIC MISSION
PHOTOIONIZATION
PHOTOIONIZATION
PHOTOLICAN EFFECT
RADIANCE
RADIANCE
REFLECTANCE Construction and operation of photoelectric sicrocator for rapid measurements of changes in posi-14 p2259 N68-25355 Intrinsic thermal radiation of n tive cell telescopes with optical a [FTD-MT-67-25] tion of moon by photoconduc-optical acoustic receiver 16 p2754 N68-27058 Optical measuring insomogeneities in synthetic ents for observing in-indum crystals 16 p2678 N68-27373 REFLECTANCE REFLECTANCE
REFRACTIVITY
SKY BRIGHTNESS
SPECTRAL REFLECTANCE
STELLAR LUMINOSITY
TRANSMISSIVITY
TRANSMISTANCE
TRANSPARENCE
TURBIDITY NT NT Kosters interferometers ptical telescopes 17 p2884 N68-28923 Applicability of shi in detecting musiligm [NASA-CR-95486] t flown on IMP satellite to memitry spacecraft of [NASA-TM-X-63279] 18 p3073 N68-29834 Improved calibration of opt sky light during climbing flight [T-2/67] ctrical and optical properties of amorphous thin il measuring devices of (NASA-CR-89982) 01 p0123 N68-10300 18 p3077 N68-30436 linked amorpi Temperature depender polyethylone photoelastic [COA-NOTE-MAT-11] 01 p0081 N68-10494 [NASA-TM-X-61037] 19 p3243 N68-31759 Problems of interplans position, physical properti perties of moon and plans [FTD-MT-66-104] ry flight - Chemical comiderations related

19 p3280 N68-31773

natellite surveillance ms, radar scanning, infrared imaging, and

20 p3481 N68-33392

combined with Moire surements 21 p3786 N68-33811

uph for analysis of ele-

21 p3689 N68-34021

recommissance an techniques - television sys microwave radiometry, lasers photographic observations (AGARD-CP-29)
Taleger

prescent X ray spectro boron through fluorine

al optical model used in diate weight muclides scat-[NAA-SR-MEMO-12531] 05 p0699 N68-14260 tric recording Optical distortions in photograms bubble chamber windows 05 p0699 N68-14295 05 p0699 N68-14303 Ultraviolet optical properties of polymers in terms of conformational properties of oligonucleotides for pre-dicting optical properties of ribonucleic acids OS p0610 N68-14611 Optical and electrical prop (AD-662692) 05 p0729 N68-14676 mmaries of research activities in solid state cs, chemistry, metallurgy, and electronic, mag-, and optical properties of materials 663181] 06 p0894 N66-15732 physics, chem setic, and optic [AD-663181] thed applied to form of 06 p0891 N68-15937 spectra of rock-forming nineral grains found on huner [NASA-CR-92508] 06 p0895 N68-15975 Optical parametri ihydrogen phosphate MSC-TR-21) 07 p1005 N68-16735 Point defects studied for effects on physical and opti-cal properties of NiAl, CuAl, NiGa, and CuGa com-AFOSR-67-27901 07 p1071 N68-17208 Optical and anhamiated and verified for 6 [UCRL-70723] ranal properties calcu-solocular solid 07 p1100 N68-17216 reptic storage and di-rties of lead sirconasc OR p1153 N68-17224 ical properties of uranium core nuclear rockets 08 p1217 N6E-17430 plasma in proposed pa NASA-CR-72348) FORTRAN program for computing stellar opacity from absorption spectra, electron scattering, and elec-tron conduction data [NASA-TM-X-63119] 08 p1216 N68-13064 Optical dispersion curv 09 pl387 N68-18493 NASA-TT-F-114971 ORNI-TM-20231 09 p1408 N68-18941 sec analysis for infrared Luminescent phosphor imaging of cool efficient of (EOG-1183-2151) 09 p1409 N68-19089 Preparation, and optical properties of metal blacks, of carbon blacks 10 p1558 N68-19784 tance and reflectance of thin films of all wulfenite for infrared filters 10 p1579 2468-20132 (QR-6) evaluation of refractive mospheric optics 11 p1687 N68-20830 dex structure co 11 p1696 N68-21032 etic properties of alpha ray band structure 11 p1771 N68-21045 Optical and photoelectric properties, including clarization offects, of gold and aluminum in extreme INASA-CR-935711 11 p1772 H68-21212 alpha fiber to determine optical characteristics II p1746 N68-21291 ins of cylindrical capaci-particles - extension to Bundpass testing of Zeim is wavelength of transmission or [NASA-CR-94087] Dynamic and optical propertie or as analyzer for charged po [LA-1131] 11 pieso N68-21443 11 p1775 N60-21632

01 p0135 N68-10614

03 p0404 N68-12111

d optical properties of pa-fluoride single crystals 04 p0557 Neb-13306

Optical properties of commercially premed cadmium

Optical properties of safety glass repeatedly exposed to mine environment [BM-RI-7062] O4 p0544 N68-13258

TR-0158/9260-01/-11

Con

Crystal

Spar diodes (NAS

Resistate r

Dyn by opt

Opt

NAS

Spin and ex polaris

Free

Opti

UTE

Pul

FTD

Ger trasho [G-92

Opt

(AD-

AD-

Mu

(FTD

Brie in alka [AFO

OPTICA

Nec and si

Las

[NAS

Opi GON [PNE

Las comm tracki [NAS

Mu

Selected bibliography and abstracts of high tempera-ture optical properties and measurements [NASA-TM-X-53679] 12 p1914 N68-21895 m mechanics of photon counting, opticoherence, and space-tin (TR-0158/S3816-88/-1) 12 p1914 N68-21895 18 p3126 N68-29669 Research and develope play devices and compone ent in cathode ray tube dis-Mathematical model for calculatin figurations for photographic lens corre [PROM.-4061] 18 p3 ing diapoint con-12 p1849 N68-22306 18 p3123 N68-30270 Properties and applications of photochromic glasses 12 p1849 N68-22309 Properties of potas im bromide crystals as optical data storage media [NASA-CR-86075] Properties and applications of magnetic display 18 p3041 N68-30275 Preparation and optical properties of epitaxial thin films of semiconductor compounds, and effects of deposition parameters on electron diffraction of CdTe and CdSe [HP-22] 18 p3154 N68-30427 12 p1849 N68-22311 Human psychological engineering factors in develop-ment and implementation of display media 12 p1827 N68-22316 Reflectometric measurement of optical constants of beta brass alloys Electrical and optical properties of gold-doped ail-icon p-i-n diodes at low and moderate current injection 12 p1888 N68-22357 Optical properties and stimula groups of mixed fluorides with ne [RRE-TRANS-162] 19 p3347 N68-30913 ated emission of crystal Optical properties and electronic band structure of nc reflectance and photoemission 12 p1956 N68-22427 19 p3348 N68-30931 Ellipsometric me is of palladium optical Optical and electrical properties of thin films of rare earth elements constants in ultrahigh vacuu [ORNL-TM-2114] m region 12 p1917 N68-22709 19 p3349 N68-30973 Nonlinearity effects in optical data processing, and FORTRAN program for analyzing nonlinearities in appectorscopic photographic plates [NASA-CR-94405] 2 p1917 N68-22845 Thermal radiation in metals as related to optical and electrical properties [RE-335] 19 p3354 N68-31366 Filament formation in liquids and difference frequency generation by two ruby laser beams [AD-6706[5] 19 p3316 N68-31399 Correlated magnetic states with optical and electri-[MC-63-172-R1] 13 p2131 N68-23235 Electron paramagnetic resonance spectrum and opti-cal properties of trivalent iron in cubic and axial fields in zinc selenside information on various studies to deter-argical, electrical, and optical properties of NASA-CR-95950] 13 p2133 N68-23426 19 p3354 N68-31416 Photoemission and optical properties of cobalt, pal-ladium, platinum, and gadolinium [SU-SEL-67-045] 13 p2137 N68-23854 Laser standards research properties of laser materials [NBS-TN-449] arch, and optical and chemical 19 p3288 N68-31464 Second harmonic light generation in piezoelectric crystals with natural optical activity by circularly solarized laser beam Working specifications for manned orbital observa-tory and telescopic optics 19 p3366 N68-31631 TR-554) 13 p2140 N68-24249 Optical design, control, and prelin or manned orbital telescope Changes in atmospheric transparency analyzed to etermine stability of atmospheric optical properties FTD-MT-24-167-67] 13 p2111 N68-24257 19 p3280 N68-31767 determine stability of a [FTD-MT-24-167-67] States of vibration and optical properties of molecu-Mechanical, optical, and electrical characteristics of and-held sextant for space flight (NRC-TT-1313) 19 p3355 N68-31802 [NASA-TN-D-4585] 14 p2286 N68-24512 Optical anisotro nium element nuclei 19 p3317 N68-31901 Polymer film birefringence effect on photographic Polarization analyses for various parts of Arend-Ro-land comet ight scattering pattern 14 p2276 N68-24584 19 p3370 N68-32061 Corrosion rates of zinc and galvanized steel, and relation of optical properties to amount of corrosion in radiation spectrum Transformations of optical information using holography and laser [EE-TRANS-1785] 20 p3535 N68-32468 14 p2273 N68-25247 Electromagnetic rac propagation, corrugat notated bibliography (PIBEP-68-011) Photoelectric and optical properties of selected com-sercial metal foils and films in extreme ultraviolet adiation, acoustic scattering, wave sted surfaces, nonlinear optics - an-14 p2335 N68-25311 20 m3537 N68-32697 Optical properties and stability silver and dielectric film coatings [NASA-CR-73228] Optical and electrical properties of ytterbium thin lity of vacuum deposited 20 p3570 N68-32883 14 p2374 N68-25326 Optical properties and applications of regenerative optical quantum amplifiers Particle optical properties of electrostatic deflector in magnetic field [UCIL-TRANS-10214] 14 p2319 N68-25452 20 p3493 N68-33280 Optical and radio emis Optical properties, flu spectra of reduced nicotina [NASA-CR-94931] rence, and absorption operties of quasars 20 p3583 N68-33564 adenine dinucleotide 15 p2392 N68-25944 Geometric optics and focal region fields of spherical Optical properties and electrical conductivity of zinc mide monocrystals with excessive zinc [RRE-TRANS-165] 15 p2543 N68-26708 21 p3730 N68-33884 Properties of pulsed liquid lasers with selenium ox-hloride or phosphorus oxychloride matrices d optical properties of semiconychloride or phosp TR-68-826.4] 21 p3700 N68-34566 16 p2741 N68-27123 Optical properties of electrons in alkali metals [FA-R-1889] 21 p3756 N68-34703 Physical chemistry, solid state devices, optical, mag-tic, chemical, and mechanical properties and appli-tions to devices, and chemical and structural eny used to determine depen-of macromolecules on pro-Birefringence and vis dence of optical anisot perties of polyvinyl solvents [FTD-MT-24-212-67] AR-71 22 p3823 N68-35286 16 p2743 N68-27326 Fourier theory of statis dum and relation to age formation 23 p4106 N68-36260 16 p2688 N68-27374 Method for computing optical properties of wave charned sea surface Polarized light studies on optical anomalies caused corundum inhomogeneities 23 p4055 N68-36416 Atmospheric optical data recorded in Oregon during aircraft descent over lake [SIO-REF.-68-19] 23 p4055 N68-36445 16 p2688 N68-27375

23 p4055 N68-36445

23 p4151 N68-36464

on optical qualities of

23 p4108 N68-36470

erties of iron and gadolinium

Static and dynamic prop

Effects of edge co Gemini spacecraft win [NASA-TN-D-4845]

Operators derived for electrical and optical properties of paramagnetic [AFCRL-68-0363] 23 p4151 N68-36490 Optical, mechanical, electrical, and computational low of photometric observational data for dual chan-sel electrophotometer 23 p4063 N68-36724 Reflectance and photoemission measurements used to determine optical properties and electronic band [UCRL-50307] 23 p4154 N68-36852 Modulation udied for dependence mulsion layer tion trans n of photographic films ical properties and struc-23 p4063 N68-36977 Calibration and optical sensi prometer with chopped light be ivity of photoelectric 23 p4064 N68-36983 Electrical and optical characteristics of electrolu-inescent indicator 23 p4033 N68-37303 X ray analysis of block dimensions in cast monocrystals of aluminum [NRC-TT-1330] 24 p4270 N68-38347 OPTICAL PUMPING formalism in optical pumping and weak tic light absorption Operator form [AD-656474] 01 p0098 N68-10076 Bibliography, theory, and experiments on optical ixing in bulk semiconductors for millimeter wave NASA-CR-860071 02 p0259 N68-11439 Dynamic nuclear orientation by nuclear spin refrigerators, microwave dynamic orientation, and opfucil pumping fucil-34P20-OR41 03 p0397 N68-12704 Luminescence effect on generation capacity of solid state lasers, and thermal deformation of laser resonator 04 p0518 N68-13426 [FTD-HT-67-59] Thermal deform 04 p0518 N68-13428 Eigenvalues for electron configurations of rare earth ons in yttrium-aluminum garnet by optically pumped [NASA-CR-86020] 04 p0558 N68-13622 Self-oscillating helium magnetometer suitable for space probes operated on locked oscillator technique as ground magnetometer [REPT.-1966/3] 05 p0657 N68-14008 Optical pumping in atom [UCRL-17765] 05 p0704 N68-14044 Transfer efficiencies of several diffusely reflecting REPT.-292 05 p0671 N68-14122 Optical pumping of xenon flash lamps, performance orediction for pumped continuous wave laser, and octamium-mercury lamp for pumping neodymium yt-(ECOM-02097-5) 05 p0671 N68-14774 [FTD-HT-23-699-67] 06 p0852 N68-15302 n from cylindrical neodymium glass rods FTD-HT-66-520] 06 p0858 N68-15657 Experimental verification index during laser operation [TR-5] of variations in refractive 07 p1005 N68-16908 Pump source effect on operating frequency, and one limitations in gas filled amplifier 07 p0978 N68-16939 Low frequency model for st tering, and photoelastic ampl range of pumped laser stimulated Brillouin scat-hillication in microwave Electrical and optical parameters of high power incoherent light source [ECOM-2899] 09 p1314 N68-18359 Spin relaxation in optically pumped rubidium and use of optical pumping to detect free radicals in photol-ysis of simple alkanes 10 p1488 N68-20110 ser pumped ammonium 11 p1768 N68-20726 Optical pumping in atomic hy 12 p1916 N68-22268 Calculation of ground energies in optical pumpi vapors state populations and self-ng of hydrogen and alkali

14 p2317 N68-25348

ion cross sections for ical pumping 13 p2514 N68-25911

Electron spin exchange of

[NASA-CR-95355]

modynamics of solid s [NABA-CR-95358]

Research projects on defect s shavior, electrical and optical

Ellipsometric method for measuring optical parameters of substrate and oxidation surface layer thickness

16 p2692 N68-28043

16 p2746 N68-28194

ct structure, mechanical cal properties, and ther-

15 p2478 N68-26648

18 p3084 N68-30248

18 p3085 N68-30509

19 p3315 N68-31049

20 p3422 N68-32787

20 p3476 N68-33588

21 p3733 N68-33704

22 p3925 N68-35012

23 p4071 N68-36255

23 p4072 N68-36282

n gallium arsenide laser

EX

per-400

mai un-

724

sed and

352

ims uc-

77 ric

83

60

47

76

19

16

2

Continuous wave voltage tunable optical parametric cillator design with monobasic potassium phosphate (UTEC-MD-68-035) Space radiation effects on diodes and optically pumped la (NASA-CR-86068) Resonator losses during optical pumping of solid state ruby laser [FTD-HT-23-579-67] Dynamic nuclear spin polarization of liquid helium 3 by optical pumping Atomic and molecular reactions in optically pumped lium discharge Optical pumping magnetometer for studying geomagnetic gradients [NASA-CR-96275] 20 p3476 N68-33588 Optical pumping, spin exchange, and light modula-on experiments in samples containing sodium and Spin dependent atomic reactions in helium discharge nd extraction of helium plus 3 ion beam from optically olarized helium 3 gas source Free and forced procession of nuclear moments, nuclear spin and optical pumping generators for precession, and design of nuclear magnetometers [JPRS-46444] 22 p3881 N68-35973 Optical pumping used as source for millimeter wave TUTEC-MD-68-0531 Pulsed electrodeless discharge as light source for [FTD-HT-67-392] OPTICAL RADAR [PNE-1110]

Generation, detection, and measurement of ul-trashort optical pulses [G-920479-8] 23 p4072 N68-36339 Optical energy transfer processes in barium and titanium systems [AD-673937] 24 p4219 N68-38228 Multiphoton absorption means of optically pumping gallium arsenide lasers
[AD-673983] 24 p4334 N68-38297 Multi-prism Q switch laser consisting of rotating prisms on motor and series of reflecting prisms mounted on outer faced annulus 4 PTD-HT-67-404 24 p4265 N68-38301 Brief accounts of work on excitation energy transfer in alkali metal vapors [AFOSR-68-1768] 24 p4220 N68-38433 Neodymium laser radar /lidar/ observation of dust and steam clouds from pre-gondola 1 chemical explo-sions. 01 p0058 N68-10661 Laser backscatter calculations and ruby laser radar measurements of atmosphere [NASA-TM-X-61083] 13 p2079 N68-23359 Optical radar observation of debris cloud from pre-GONDOLA 2 explosion [PNE-1119] 15 p2478 N68-26619 Nightly average optical radar measurements of icrometeoritic or estraterrestrial dust influx in earth 16 p2761 N68-27494 Optical radar to study clear air turbulence, at-coapheric aerosols, and mass distribution stribution 17 p2907 N68-28482 Laser applications in the fields of optical radar, space ommunications, industrial application, and space tracking and navigation [NASA FACTS, V. 3, NO. 6] 17 p2897 N68-28949 Equipment and ground stations for laser radar and ommunication experiment MSC-4 on Gemini 7 flight 19 p3288 N68-3 1760 Programs and plans for optical communications in manned deep space missions and laser radar for Lunar Excursion Module 19 p3288 N68-31769 Optical radar and tracker development for pacecraft automatic guidance during rendezvous 19 p3306 N68-31771 Solid state laser rada (WRE-TN-PAD-146) 20 p3492 N68-32447 Airborne lasers and tele imospheric properties as pes for satellite studies on optical space communica-NASA-TM-X-597861 21 p3700 N68-34676

Remote probing-of cirrus clouds via satellite-tiorn optical radar [NASA-CR-96893] 22 p3903 N68-35145 and range formulas for om aerosol clouds 23 p4073 N68-36762 Optical radar system de predicting reflected radiat [SC-DR-67-115] Design concepts and operating principles of low al-titude and high frequency radio altimeters, and inter-cept and righting radar [JPRS-4626] 24 p4290 N68-37730 PRS-46620] Intercept and sighting radar /RP-1/ 24 p4290 N68-37732 OPTICAL RANGE PINDERS Atmospheric effects on beam energy distribution of aser range finder BRL-MR-1871] 08 p1183 N68-17773 Gas loser optical range finder for geodetic high precision measurements
[FTD-MT-24-201-67] 18 p3083 N68-30174 OPTICAL REFLECTION Techniques for, and applications of preferenti-etching of crystal surfaces to produce optical refle-tions for crystal orientation and optical alignment in si-con crystals icon crystals [NASA-TN-D-4187] 01 p0098 N68-10354 Calculations of reflected and for earth atmosphere by Monte C [NASA-CR-91228] transmitted radiance Carlo method 03 p0339 N68-12064 Ray tracing optics for a ristics of transparent bea sis of reflective characting 05 p0699 N68-14297 Dark field photography for large bubble chamber ith transparent bead sheeting 05 p0660 N68-14298 thickness and other proper-cryodeposits by optical In situ measurement of th [AEDC-TR-67-226] 06 p0877 N68-15097 Combined schlieren, and reflection imagery for improved differential analysis
[ISL-T-30/66] 07 p0994 N68-16153 by reflection from galli-Second harmonic ger INRL-66621 11 p1776 N68-21717 Heat balance equations for ing patterns for spacecraft ten [NASA-CR-1041] for optimizing optical contemperature control system 12 p1894 N68-22391 Use of various metals for optical reflecting elements [NASA-CR-94577] 13 p2081 N68-23437 Parameters of reflected polarized light by terrestrial FTD-HT-67-172] 15 p2510 N68-26584 ization, reflection, and scat-m of sky radiation 18 p3068 N68-30384 tering in spectral distribution [ISR-6] Aerial color phenography of oceanic surface and olar radiation incident and reflection measurements on sea water (SERG-TR-02) Electrophotometric investi

20 p3478 N68-32722 tion of nebulae reflec-20 p3593 N68-33457 Development of grazing incidence vacuum ul-fixed exit slit 22 p3879 N68-35842 (DESY-68/21) otoemission and optics shalt, palladium, platin reflectivity measurements im, and gadolinium 23 p4148 N68-36125 Optical resonator desi d for use with curbon diox ide liners [NASA-TM-X-55994] 01 p0071 N68-10049 Microwave generation and amplification by elec-onic interaction with optical resonators REPT.-341-8Q] OI p0036 N68-10202 (REPT.-341-80) Electronic intereventigated for micro [REPT.-341-Q] with optical resonators inol p0038 N68-10584 Review and analysis of last properties, and design of optic [WRE-TN-PAD-134] ser resonators, laser beam 07 p1005 N68-16910 Loss mechanisms in ruby laser crystals, and theory and designs of spherical-mirror Fabry-Perot inter-[AFCRL-68-0061] 13 p2079 N68-24011 Resonant reflector for narrowing line width of pu 20 p3492 N68-32495 d optical h

tor with nonlinear crystal (RAE-LIB-TRANS-1300)

e in laser res

22 p3887 N68-35924

OPTICAL RESONATORS OPTICAL SATELLITE TRACKING PROGRAM Optical satellite observations during Oct. 1967 [ROE-STS-66] 07 p1086 N68-16553 Description and test evaluatellite tracking system [NASA-CR-96739] ation of prototype laser 21 p3701 N68-34735 letic parameters derived Earth radius and other ge om optical satellite data 23 p4054 N68-36180 OPTICAL SCANNERS Data acquisition and an tained by combined a mechanical acamers in agr [NASA-CR-89993] is of crop signatures ob-trometer and optical-ltural survey 01 p0063 N68-19268 es of automatic search mal element scaming 03 p0332 N68-12265 FID-MT-67-69 nd color analyzer med semiconductor crystal Spatial intensity distril with spectrography for a target plates for imaging [ARL-67-0180] 04 p0510 N68-13430 determination system [NASA-CR-91532] 04 p0534 N68-13515 Extraction of wanted s saps by separating optics hich were converted colors from multicolor mais into color channels electronic signals for FTR-60311 06 ±0620 N68-15689 Print reader based on optical correlation principle [FTD-MT-66-117] 06 p0812 N68-15782 ocusing transducer for eam to locate objects in high temperate (APDA-210) 07 p0998 N68-16672 recording frequency Rotary scar nning device for rec TR-1001/2307/-171 GS p1179 N68-17680 Ultralinear flying spot sca (ECOM-2889) os p1179 N68-17861 Computer methods of optical image scanning for ottern and character recognition 09 p1310 N68-18805 Optical slide scanner for input pattern trans to hybrid graphic computer [REPT.-249] 10 p1503 N6 10 p1503 N68-20104 Users manual for FORTRAN optical less design pro-NASA-CR-94311] 12 p1915 N68-22116 Survey on scanning laser display systems and holo-aphic laser displays 12 p1884 N68-22313 tomated stellar proper Design and operation of a motion measuring syst [NASA-CR-94336] 12 p1874 N68-22454 stablish feesibility of using anning assure on IMP of spacecraft attitude by System design analysis ectro-optical celestial accorat for determina NASA-CR-958081 18 p3111 N68-29707 and conte 20 p3477 NKE-32384 Fiber optical scarme [FTD-MT-24-314-67] ing of coherent optical rel analysis 20 p3536 N68-32636 Mathematical mode system for high-resolu [FSN-AD3-06-68.1] 20 p3494 N68-33411 nterpretation of line-scan pictures at function of 20 p3483 N68-33414 21 p3665 N68-34421 [AD-672078] Optical scanning for switch driving signal with concenductive cells

OPTICAL SPECTRUM
U LIGHT [VISIBLE RADIATION]
U SPECTRA
OPTICAL TRECENESS Optical diffraction met tructures of current and s ook of determining vertex ALTRANS 21 03 p0406 N68-12493 od medium 04 p0497 N68-12820

REPT.-270]

22 p3847 N68-35449

04 p0535 N68-13628

05 p0694 N68-14432

05 p0694 N68-14433

05 p0640 N68-14871

05 p0640 N68-14872

dels in linear optimal con-ity aircraft control system 05 p0640 N68-14915

06 p0817 N68-15023

06 p0859 N68-15041

que for orbital injection

06 p0870 N68-15331

06 p0818 N68-15434

of p0819 N68-15576

near control system with

rsion 06 p0819 N68-15579

o6 p0799 N68-15582

rarchical branched con-

lements 06 p0864 N68-15587

06 p0864 N68-15588

06 p0820 N68-15594

06 p0820 N68-15595

06 p0820 N68-15596

06 p0930 N68-15817

06 p0781 N68-15914

06 p0784 N68-15930

06 p0882 N68-16040

07 p0935 N68-16476

07 p0977 N68-16539

07 p0977 N68-16918

ant solutions of linear regu-

m theory for optimal estimation discrete, stochastic, dynamic

n expansion methods foundary value problems a

nal control theory in synthesis of n - human compensatory tracking ckened display, state variable dis-

aptive control system for

mata for reliability

listributed parame-

es to automatic control

rical calculations on optimal

ns with restrai

Con

App

FID

eperati

probler timal as

(DLR-

Noni space v ries [NASA

Dual

D1-82

NASA

TR-01

Appi reliabili matic o [JPRS-

Teem

timal or

Optin ferentia theorem

for grav

trol equi cal mer launch v [NASA

Math

Relia

Soluti ybrid c

Sumn timizati systems [NASA

Optin back co [NASA-

Differ second or dete NASA

Tangential radiography methods for measuring wall thickness and individual layer thickness in multilayered structures having spherical, cylindrical, and related momentage. Y-DA-1583] 05 p0666 N68-14097 Value for emergent light thus from homogeneous spherical dust nebula with star in center [RTS-4380] 20 p3584 N68-32310 OPTICAL TRACKING Lunar specular reflection: ties for optical tracking of lu of reflector data, and analysis [D1-82-0648] alysis of lunar surface flashes 04 p0577 N68-13486 Analog computer simulation study of precise hybrid servo system to control experimental optical tracking [NASA-TM-X-63068] 04 p0489 N68-13807 Dependence of human information processing rate on degree of response or discrete tracking tasks 06 p0781 N68-15911 Optical techniques for infrared detectors as pilot arning devices of approaching aircraft 08 p1117 N68-18237 ary of radar radio, and optical spacecraft tracking techniques [NASA-TM-X-32400] 10 p1496 N68-19829 Optical satellite observation in Nov. 1967 at Earlyburn (ROE-STS-68) 10 p1600 N68-20308 Minitrack measurement etermined orbit for cali compared to optically ing Minitrack antenna arrays [NASA-TM-X-63161] 11 p1663 N68-21577 ges from range rate ference orbits 13 p2027 N68-23523 Comparing mean tracking systems with optical r [NASA-TM-X-63199] Optical star tracker cali [NASA-TN-D-4594] procedures 14 p2286 N68-24555 Dimethylamino ethy mospheric tracer by for [SC-RR-66-2693] fene as chemiluminescent at-nine artificial cloud 15 p2463 N68-26639 Geometric optical satellite tracking network [AD-666238] 16 p2650 N68-26998 Relay communic om for voice and telemet d spaceflight network at 16 p2625 N68-27904 use in electro-optical seeker/tracker testing of miss [BRL-TN-1687] 17 p2850 N68-29019 Satellite observation techniques and data processing ethods at optical tracking station in Malvern, En-NASA-CR-95719] 17 p2856 N68-29554 atellites at Mountcaste, Ashley, and Italy grous [ROE-STS-74] 18 p3168 N68-29640 ellites, January 1968 18 p3168 N68-29641 [ROE-STS-73] tion effects on optical [NASA-CR-95809] 18 p3066 N68-29706 tion of altime ve eval [ARL/HE-20] 18 p3015 N68-30294 m operator me wave track ce during prolonged 18 p3015 N68-30589 Computer simular tracking problems as tion systems for deep [NASA-CR-86090] 19 p3242 N68-31730 on optical communica-includies for space appli-[NASA-TM-X-61097] 19 p3243 N68-31759 Nike-Ajax system and Real ptical Tracker /RADOT/ a accoraft tracking and commi ne Automatic Digital timode telescope for 19 p3243 N68-31761 lity of optical space Design considerations and fracking 19 p3243 N68-31766 Optical radar and trac acceraft automatic guidance er developme uring rendezvous 19 p3306 N68-31771 (ATD-68-119-101-4) 22 p3853 N68-35396

ntation for Satellite Technical feasibility and implementation for Satellite Prediction And Display /SPAD/ device [NRL-6694] 24 p4224 N68-37726 OPTICAL TRANSITION NCAL Projection of transition element oxace op-verification of transition element oxace op-botocemission models through experimentation 23 p4154 N68-36827 OPTICS ter streamer chamber development 01 p0047 N68-10925 Two-mete [SLAC-74] Optical data proceed tical correlators, and [NASA-CR-90237] rocessing and reduction, coherent op-and correlation analysis of holograms 37] 02 p0239 N68-11108 Optical triangulation method for determining lunar surface elevation relative to Surveyor spacecraft [NASA-CR-90512] 02 p0271 N68-11607 Proposed experiment extension system study [NASA-CR-90539] ents in optical technology Apollo 02 p0272 N68-11812 Geometric optics approach to calculating surface oughness effects on microwave emissivity from Moon and Venus [NASA-CR-91355] 04 p0572 N68-12966 mmarized in solid state physics, ent, optics, fluid physics, solar landaria Research projects sum mperature measuremen NP-17117] 07 p1035 N68-16556 University program in precisi (AD-667606) on optical technology 13 p2109 N68-23765 Theoretical study of guided sub-raves in inhomogeneous media nillimeter optical 21 p3729 N68-33654 Numerical method for evaluating geometrical optics radar cross section of general doubly curved convex conducting body (MTR-431) 22 n3835 M68 38405 OPTIMAL CONTROL

NT TIME OPTIMAL CONTROL square error in output [TR-106] 01 p0040 N68-10153 Transformations of one d and other variation problem nal optimal control 01 p0041 N68-10303 ptimalness concept for of autonomic controls 01 p0043 N68-10316 namic programming and or d system used for synthesis Problem of programming thrust and control of flying hicle as variable mass body 01 p0099 N68-10705 Linear programming procedure for fixed-time fuel timal control of state-constrained linear system ned linear system 02 p0190 N68-11070 optimal contro (D1-82-0638) Near-optima [D1-82-0647] 02 p0191 N68-11122 Computers in contric power plants [FTD-HT-66-772] 02 p0184 N68-11211 Active optical system for spaceborne telescopes -Control system optimization [NASA-CR-66489] 02 p0213 N68-11761 Markov decision proble termination of optimum investigated to simplify oum policies 02 p0230 N68-11771 [P-3448-2] Existence theorems for the sector valued cost fu nal control problems with vector valued of [NASA-CR-90531] 02 p0193 N68-11806 optimal feedback control It minimum fuel midcourse Linear stochastic systems of with application to spacecraft in NASA-CR-90504] 02 p0193 N68-11862 olied to optimal control trainctories NASA-CR-90749] 02 p0193 N68-11870 03 p0330 N68-12031 [GER-13243] cally con for nuclear power ins (ANL-TRANS-470) 03 p0378 N68-12660 nation techniques applied nat spacecraft, planetary term dealer Control and nonlinear estim to optimal guidance of low the soft landings, and feedback sys [NASA-CR-91441] 04 p0487 N68-12992 (FTD-HT-67-41) 04 p0488 N68-13098 Reliability, and Markov processes of stochastic apping control with random terminal time LM-5342-PR] 04 p0488 N68-13104 RM-5342-PR Optimal control p aximum principle dyzed using Pontryagin

04 p0488 N68-13330

midcourse rocket (RE-309)

on to stochastic optimal control problem of se guidance of spacecraft with low thrust Optimal reactor control for nuclear rocket reactor [SC-CR-67-2723] Theoretical, and a nuclear rocket read (SC-CR-67-2746) Applications of m system optimization (JPRS-43910) Optimal control of syste Explicit mathematical mode trol applied to variable stability [CAL-IM-1836-F-1] Wiener theory of optimal linear filters applied to ynthesis of nonlinear control systems with stochastic oput signals timization techniques for sampled-data control ns using dynamic criteria [NASA-CR-61480] Analog computer for iterative solution to time-op-mal control problem Syntheses, and analyses of cybernetic problems athematical models for man machine systems with ptimal control, operations research, economics. JPRS-44 [14] Theory and applications of optimal control systems 06 p0819 N68-15578 Construction of optimal line statistical predictive error dispe Fokker-Planck equation for probability density variation in optimal relay control system 06 p0819 N68-15581 nformation value, and dynamic programming for ection of optimal control systems Operational reliability of hiera troi system with ranked output el Inverse functions, and finite auto-alysis of complex problem Frequency separation of control processes in non-near automatic system Dynamics of automatic control system with different rates of motion components Synthesis of optimal a tellite stabilization withm for optimal control line balancing in based on dynamic computer programming method [MTB-010044] Feasibility of optimal conanual control system - hu erformance with quickens slay, and display gains Hamilton-Jacobi linear, first order partial differential equation applied to optimal impulse transfers between elliptic coplanar orbits Conjugate gradient methods application to termina and in-flight constraints for V/STOL flight path op [NASA-CR-91880] Optimal piecewise cor lator problem [NASA-CR-92740] Nonlinear perturband control of tin (NASA-CR-92981)

23 p4018 N68-36182

Data evaluation from tracking systems abroad Geos

A-862

Construction of observers in multivariable plant con-trol systems Synthesis of optimal variant for trolled production machinery 07 p0978 N68-16970 10 p1508 N68-19713 de di identification and control of n niny discrete systems 10 p1508 N68-19738 07 p0978 N68-16973 Stochastic programs in abstract spaces {D1-82-0672} 10 p1509 N68-19880 rable feedback control system to restrict drift of (FTD-HT-66-773) 07 p0980 N68-17163 10 p1591 N68-19961 on of closed loop sen-07 p0980 N68-17165 10 p1510 N68-19995 [RE-319J] ng control of plant operation subject to ran [EUR-3735.E] capacity path routing 08 p1203 N68-17307 RM-3375-PR 10 p1547 N68-20000 Control theory elements oblems - matrix represents mal and predictive control applied to nonlinea on of linear systems - or solving singular control SRL-68-00031 10 p1510 N68-20067 08 p1155 N68-17421 Optimization of automationed spacecraft applica ic flight control systems for esign for time variable 10 p1510 N68-20130 08 pl110 N68-17450 ation of multivariable ircraft landing path 08 p1114 N68-17492 Regret function derived for w Pontryagin and Bellman, and representation of known optimal [NASA-CR-93737] variational methods of d its application in control policies 10 p1511 N68-20291 Feedback loops for optimize control system for longitudinal at [DLR-FB-67-74] entrol of planet pointing strol of satellite trajecto-Optimal vehicle control for merging problem [ESL-R-327] 10 p1617 N68-20397 INASA-CR-932501 08 p1240 N68-17884 man and computer human controllers as regulators of second Duality theory for spaces with application [D1-82-0671] programs in abstract nal control theory 08 p1156 N68-17944 [NASA-CR-93853] 10 p1478 N68-20453 state variable feedback ml no systems for gain ime [NASA-CR-93412] al control processed defined by scalar r distributed parameter sholic or elliptic pertial 09 p1316 N68-18350 Singularity problem in final value control of linear 11 p1675 N68-20583 TR-0158/3307-02/-5] nalysis for Gauss white Optimal continuous fits disturbance and measure [TR-0158/3307-01/-10] 09 p1317 N68-18458 Applications of m reliability, automate matic control [JPRS-44576] in operations research, ecognition, and auto-11 p1725 N68-20770 controlled optim 09 p1360 N68-18577 traintical theory of automatic tearming and training and teacher algorithms 09 p1318 N68-18580 11 p1677 N68-20855 trol of discrete time stochastic linear [D1-82-0695] Terminal guidance of air to surface missile using op-timal control and filtering [GGC/EE/67-2] 09 p1371 N68-18666 11 p1677 N68-21012 Altitude of orbiting firing time control syst [NASA-TN-D-4519] aft corrected by thruston system based on linear system of dif-s satisfying existence and uniqueness 11 p1788 N68-21260 incering applications 11 p1678 N68-21677 Optimal control t (REPT.-67-C-129) 09 pl319 N68-18799 m of linear stock system of object with cond order differential (NASA-CR-94291) 12 p1851 N68-22015 09 p1319 N68-18800 Optimal finite-thrust tr reach and departure says between planet ap-with specified interng feedback controller mediate orbit (NASA-TN-D-4534) 12 p1960 N68-22096 09 p1422 N68-18969 ntrol problems and calculus of Perturbed optim nce techniques and con-puters, and mathemati-trol of spacecraft and 12 p1852 N68-22103 Optimal adaptive search [NASA-TM-X-53709] 09 p1423 N68-18983 12 p1845 N68-22188 analysis by spacecraft e model based on hematical and nu ters for optimal gr Optimal spacecraft rearization of equation 09 p1372 N68-18988 12 p1867 N68-22273 ith minfactory dynamic merical methods for solving degenerate nonlineatic equations arising in optimal stochastic contri 09 p1432 N68-18991 INASA-CR-944271 12 p1854 N68-22812 tion of optimal control problems on iterative Theory of contr kov optimal contr (FTD-HT-67-69) 09 p1312 N68-19234 13 p2041 N68-23067 on theory, design, op-NASA-CR-76591 09 pl321 N68-19260 13 p2041 N68-23071 hiniques to design feed-ricible booster 09 p1321 N68-19267 Optimal sensitivity back control system [NASA-CR-93527] Battery and fuel call power [REFT.-67-C-130] irces for electric curs 13 p2042 N68-23141 design for dyn Differential dynamic cond order and first or r determining optimal co (ASA-CR-93690) nming to develop roximation methods 13 p2043 N68-23381 09 p1321 N68-19388 ol based on mi racteristics of linear, and 13 p2043 N68-23403 ol systems for opti-Design of guidance a utilization of informatio [NASA-CR-997] 10 p1494 N68-19592

degration of equations of control heals of optimal variant for automatic

10 p1507 N68-19711

onlinear perturbation

ivity of optimal conand methods of min trol systems to large [NASA-CR-93731] 13 p2044 N68-23561 Trajectory same 13 p2044 N68-23562 al control of p 13 p2045 N68-23565 Optimization of systems by minim (STI-TR-900-1) entineer flight control lary effort techniques 13 e2045 200-23478 14 p2231 N68-24353 Thrust vector ing atmospheric fligh 14 p2286 N68-24409 Digital and hybrid optimal control of or [NASA-CR-94678] a Ind 14 p2341 N68-24423 my applied to Earth-14 p2233 N68-25233 INASA-TM-X-60133] 14 p2233 N68-25291 Inverse problem of gular velocities of up [NASA-CR-94924] 15 n2558 N68-25928 15 p2559 N68-25938 d and controlled FTD-MT-24-116-671 15 m2441 N68-26582 ces for systems of non-(MRC-TER-844) 15 p2442 N6B-26663 rocesses, optimal con-16 p2633 N68-27135 (FTD-MT-24-127-67) Optimization of st respect to probability specific time interval (NASA-CR-95140) 16 p2633 N68-37207 ty of optimum traject 16 p2634 N6B-27403 chastic pro-16 p2634 N68-27673 Optimal control of lin 16 p2635 N69-27799 Optimal control tubular h 16 p2796 NGB-27934 NASA-TN-D-46241 ign of m NASA-TN-D-46431 16 p3699 N68-28281 per for space records 16 p2636 N68-28307 on for large band high CERN-48-181 17 p2863 NSB-28574 17 93967 1466-201 17 p3852 N68-291 13 p2043 N68-23438 18 p3161:7468-29 ory for estimation and tic systems 13 p2044 N68-23487 18 p.31 13 1466-297

St

1

F

0

Fi

U

17

10

(S

rie (O

00

N

let [L

Theoretical and computational aspects of optimal [RAE-TR-67329] IE p3050 N68-29865 Algorithm for iterative solu ry value problems for optimal ion of two point bounda-18 p3051 N68-30010 Optimal control of time lag systems 18 p3051 N68-30073 repheric reentry corridor for re-vehicles Optimization of atm blant cone and blant pla 18 p3165 N68-30227 Numerical solution of stochastic Hamilton-Jacobi quation for fuel optimal spacecraft attitude control INASA-CR-95882] 18 p3171 N68-30281 Optimal control algoriti r mean-square error in tim: stochastic [D1-82-0693] 19 µ3255 N68-30969 Computational techniquer optimal control of a aclear rocket engine syste nd performance criteria ir reactor systems and 19 p3309 N68-31006 19 p3255 N68-31079 [RM-5655-PR] Suboptimal solution for optimal feedback control problem in systems with random parameters 19 p3255 N68-31134 Maximum principle for optimal control problems with delay-differential system equations [NASA-CR-95958] 19 p3256 N68-31494 Dynamic programming application for computing al-orithm for optimal control of xenon-power spatial amients in nuclear reactor transients in nucle (KAPL-M-6725) 19 p3312 N68-31705 Properties of optim oying adaptive mod suboptimal control em-nd two time scale princi-REPT.-9500-920126) 19 p3257 N68-31809 Optimal control of d with dynamic equations crete-time stochastic system ed loss function linear in state 19 p3257 N68-31822 [P-3631] Application of ap to soft lunar landing [AGRR-TB-16] ecraft fuel optimal guide 19 p3368 N68-31893 Analog simulation of dc arc en ontrol system to define optimum emimion spectrometer a control requirements [NASA-TN-D-4770] 19 p3251 N68-32055 Algorithm for flued-tin ear state-constrained a ne fuel-optimal control of (D1-82-0723) 20 p3587 N68-32803

20 p3413 N68-33304 Optimization of larg ol systems with hierarchic

structures - automatic proction control management 20 n3455 N64-33509 Application of opt unch vehicle attitud rol theory to design of fe control systems 21 p3670 N68-33650 launch vehicle attitue [NASA-CR-61939] tics for feedback op-

(NASA-CR-96820) 21 p3673 N68-34386 Optimal control of a random search algorithm [NASA-TM-X-6[197] ule acquisition by

21 p3673 N68-34394 eximate design of optimal regulators for high near plants, and expension of state feedback in MacLaurin series with parameters that order of system [R-363] 21 p3713 N68-34454

control optimization 21 p3751 N68-34472 Sampling and re-of fuel flow system (R-384) d for optimal control

21 p3674 N68-34497 ed in nonlinear pro-

NASA-CR-96765] onstrok 21 p3674 N68-34520 Calculus of variable tourned (REPT.-67-8) d to problems with 21 p3674 N68-34601 or logic and control of

linear systems with lumped p (JPRS-46217) 21 p3666 N68-34683 or systems with hamped nal com 21 p3675 N68-34685 Analysis and design of model following control system by state space techniques [NASA-TM-X-61189] 21 p3675 N68-34777 21 p3675 N68-34777 roach for optimal control c dynamical system 22 p3850 N68-34819

Design and func g of split path nonlinear com-conventional controllers 22 p3850 N68-34932 pessator compared with c [NASA-CR-96880]

Generalized per (RAC-TP-326) in topological spaces 22 p3899 N68-35246 or theorem proving and

solving optimal probles [FTD-MT-24-200-67] 22 m3851 N68-35290 is for optimal control of satelli fuel consumption in circular o

bits [NASA-CR-97076] 22 p3963 N68-35850 Distributed parameter ocket with thermal stress im control of nuclear 23 p4099 N68-36085

23 p4035 N68-36368 re approach to design of ning min-max solution 23 p4036 N68-36449

f optimal control system of ive algorithm for solving two 23 p4037 N68-36451

al progra hrust magnitude and direction in gravitation (FTD-HT-23-533-67) 23 p4169 N68-36665

technique for solution [NASA-TR-R-293]

iment design in deter-mplex processes 23 p4090 N68-37108 mining optimal conditi (FTD-HT-23-660-67) etical data sources for

23 p4099 N68-37402 Design of specific optic

24 p4237 N68-37475 ollability and op trol of bilin d cor

24 p4239 N68-37632 flability, observability, ic control systems per-

24 p4300 N68-37798

control problem and she of variations and of solving synthesis 24 p4301 N68-37799

ting calculus of variations op-nto initial value problems for computer söluti [RM-5737-PR] 24 p4277 N68-38236

and optimal control lunning problems 24 p4277 N68-38242

nl and error analysis technique for in-systems and Kalman filters 6-2] 24 p4291 N68-38268 ertial nevigation syste [THEMIS-UM-64-2] d optimal trajectories for

24 p4241 N68-38371

PTIMIZATION

NT FLIGHT OPTIMIZATION

NT OPTIMAL CONTROL

NT TIME OPTIMAL CONTROL

NT TRAJECTORY OPTIMIZATION

my of an nna system opt maximization 01 p0031 N68-10842 on by transc 01 p0032 N68-10846

e Markov decision 02 p0226 N68-11103 er progra

02 p0228 N68-11320 ie, and requesting the second second

02 p0228 N68-11361

Appraisal of some shortest path algorithms (RM-3433-PR) 03 p0359 N68-12041 imal strategy in rategies for con-mder costly sur-(FSU-M125)

03 p0359 N68-12071 Variational appro of supersonic sectio [FTD-HT-66-801] ed to optimum profiling um thrust nozzle 03 p0298 N68-12\$75 Modified sequ

(RAC-TP-277) 04 p0528 N68-13078 Systematic po ng worth of complex

(MTR-260) 04 p0599 N68-13095 Systems analysis to proper efficiency conechnique based on redefined cept and theory of vector op-

[RM-5454-PR] 04 p0529 N68-13264 Discrete recursive estimation data processing method for m optimum automated
 iti-electronic tracking

04 p0480 N68-13600 ces in factorial models Telescoping of block se for searching techniques [NASA-TM-X-52374] 05 p0682 N68-13988

deless induction type mag-generators using liquid timized by means of varia-Direct current and eletohydrodynamic po 05 p0725 N68-14746

of signal with limited spec-w series Optimum representa trum truncated by Kote [NASA-CR-92569] 06 p0798 N68-15370

Convergence of method for minimizing amouth convex functional on convex set in Banach space 06 p0864 N68-15602

mal self-adaptive digital regulator bjects with many parameters 06 p0820 N68-15625 High speed extremal self-a for optimization of ob (FTD-MT-24-94-67)

na processing systems and heory to optimum antenna of research summaries 06 p0800 N68-15647 Decision theoretic antenu plication of coherence th

out-of-kilter algorith 06 p0866 N68-15728

Optimum design ge bine performance effi (NASA-TN-D-4384) for high radial inflow tur-06 p0770 N68-15943 Framework and packaging design optimization for infrared spectrometer compatible with Nimbus satellite

[FB-176215] 07 p1085 N68-16281

Adaptive methods of optimizing analog to digital (JPRS-44403) 07 p0969 N68-16523

Statistical theory of extreme values for computer nulation of digital communication processing 07 p0965 N68-16975 oc optimization for transmitted reference annel phase shift keying systems 07 p0966 N68-16984

ckward programming, of [TR-EE67-9] 07 p0981 N68-17167

Transfer properties microdensitometer for pl [EGG-1183-1330] ptimization of digital 08 p1176 N68-17276

s for solving soul 08 p1248 N68-17513 lative jets, and jet

08 pi161 N68-17702

gorithm for multilevel 08 p1193 N68-17770 rete time, Markov deci-(RM-5534-PR) 08 p1194 N68-18011

or of mass and energy ex-tic orbital transfer 08 p1242 N68-18169 RAE-TR-67267 us of discrete an-

09 p1300 N68-18293 ns in trial, and error (TR-03105-49-T) 09 p1358 N68-18397

ining multiple poles 09 p1317 Nati-18500

DEX

2041

gy in

- Bur

2071

filing

2575

3078

iplex

op

3264

ated king

3600

1988

magquid

1746

370

con-

602

lator

625

and

647

728

sur-

943

281

gital

523

975

mce

, of

167

gital

276

bra-

513

jet

702

evel

770

011

ex-

293

397

ion

Game theory methods to deter and structure of conflicting syste ms 09 p1382 N68-18579 Graphico-analytic method for er ptimal structure in digital automat 09 p1318 N68-18588 el extremal system with inertial object 09 p1318 N68-18595 Properties of decisi trees, and algorithms for generating cost optis [AMRL-TR-67-83] 09 p1309 N68-18775 nata, based on op-09 p1310 N68-18804 on for core of fast thermal [KFK-668] 09 p1377 N68-19013 Search algorithms for comultivariate optimization to parametrically defined system [NASA-CR-73200] echniques for nonlinear. 09 p1363 N68-19041 ear opti p1424 N68-19119 ses for optimal design of hypersonic cruise [NASA-CR-73202] 09 p1438 N68-19245 Program /AESOP/ for solving tion problems on IBS [NASA-CR-73201] 9 p1312 N68-19299 nd operation of coaxial plasma injector INR-850/XVIII/PP] 09 p1404 N68-19489 Design concepts for opt [RM-5475-PR] dar systems 10 p1496 N68-19872 Dynamic s spatially depe [ANL-7322] and stability analysis of tor systems 10 p1556 N68-19993 Optimal soluti ar programming problems 10 p1504 N63-20292 Calculus of variations used in design optimization chalque to permit tradeoffs between costs, effectivess, and scheduling 10 n1511 N68-20497 trically loaded wire ties Optimum tapering for ecce subjected to flexural rotation [RAE-TR-66365] 11 p1796 N68-21283 stability of discrete emules 12 p1897 N68-22025 minimum variance e [NASA-CR-94292] variate regression analion systems 12 p1902 N68-32175 alysis of circuit card etching layout (SC-CR-67-2862) 12 p1854 N68-22906 Cormet fuels for red educed fuel element swelling and (UCID-15268) 12 p1911 N68-22909 (AD-666814) 13 p2042 N68-23084 nis with foodback 13 p2025 N68-23126 Signal optimi Reliability opt ries parallel syste [ORC-67-40] 13 p2091 N68-23190 ptimal selection of quality 13 p2042 N68-23250 Comparative study of a shock and vibration isolator [AFOSR-68-0242] ization techniques for 13 p2158 N68-23336 ns to optimal guidance iming of polynomials 13 p2150 N68-23542 Applying calculus of va-problems, and symbolic pro [NASA-CR-86053] Design and synth vehicle systems (REPT.-67-C-229) ology applied to space 13 p2150 N68-23576 Optimum quantiz ing in hybrid computation 13 p2094 N68-23626 KWADRACIKI - ALOOL pe misstion and minimization of ast squares method on GIER o edure for solving op-colinear problems by least squares me (III)-866/I/PL) 13 p2097 N68-24260 ne for crystallographic (LA-TR-68-5) 14 p2329 N68-24594

tral computer pro-

14 p2234 N68-25436

Convergence and cost minimization in queueing stem with exponentially distributed service and con-ant interactival times 15 p2490 N68-25672 uvering of glide vehicle at hypersonic NASA-CR-1078) 15 p2384 N68-25817 elestial mechanics, ac-ptimization 15 p2491 N&8-25841 Lie series applicat celerators, satellite or INASA-CR-1046] Local error control is tegration orbit calculate [NASA-TN-D-4342] 15 p2358 N68-25867 Trajectory option minimum cost using [NASA-CR-1070] by direct descent to is p2558 N68-25902 coretical analysis for mes of stages in axial s ring optimum operating istage compressor after regimes of stages in a upset [NASA-TT-F-11584] 15 p2380:N68-25914 m compute nd serwork synth 15 p2439 N68-25988 d high frequency communation 15 p2425 N68-26200 sant flexure problem for Optimal solution of S artic circular cylinder 15 p2570 N68-26423 ins for problem of un-dratic function 15 p2493 N68-26478 Generating conconstrained minis [RAC-TP-302] ting conjugate (ITEF-539) 15 p2503 N68-26507 cting codes using R-375) 15 p2429 N68-26745 Development and o (NASA-CR-66542) n of pyrrone polymers 16 p2686 N68-27067 Iteration algor ns optimal solution for (RM-5601-PR) 16 p2633 N68-27392 Conditions of option problem [NASA-CR-89909] sined option 16 p2634 N68-27402 Cost versus weight rocket vehicles [NASA-TM-X-60089] n for multiw 16 p2772 N68-27530 Optimum estimate prived by digital co ndom signal sequen-nd evaluated by Mon Carlo method
[NASA-CR-87241] 16 p2623 N68-27560 ving signal process and noise paramet 16 p2623 N68-27665 16 p2697 N68-27737 ital optimization of al representation 16 p2624 N68-27885 TROSE PRO 16 p2698 N68-27897 solar power system NASA-CR-952631 16 a2594 N68-27974 Packaging three (SC-CR-47-2963) 16 p2672 N68-28105 al, mage (DLR-FB-67-14) 17 p2848 N68-28363 [TIL/T-5748] 17 p2858 N68-20 of diagrams with real log-ame algorithms 17 p2864 N68-28903 (ETD-HT-57-5/4) INP-173501 17 p2842 N68-29044 signs of gas cooled feet

17 p2917 N68-29161

tion of statistical mea 17 p2966 N68-29432 of axial velocity distribution 17 p2875 N68-29479 VKI-TN-37 ion and array 18 p3032 N66-29571 try and Is for optimization of TD-HT-23-1079-67] drag bodies of given strainte 18 p2994 N68-29795 18 p3102 N68-29875 elasticity [ARC-CP-975] 18 p3176 N68-29895 tiparameter automa [FTD-HT-67-363] (NASA-TN-D-4715) 18 p3088 N68-29954 r and ellipsoidal suffer opeque materials 18 p.3073 N68-2996 ization of in tometer to measure: [NASA-CR-73234] Graphical and to BARC-3201 18 p3077 N68-30434 Pilot study of test o NAFI-TR-1124] 18 p3047 N68-30449 c growth and opi OCC-68-101 18 p3192 N68-30861 ent display panel based 19 p3251 N68-30886 ing in clutter plus no 19 p3236 N68-30974 nization problems of in Hilbert space 19 p3299 N68-31045 Calculus of variations for synthesizing analytic results on optimal transfer [RAE-LIB-TRANS-1281] 19 p3363 N68-31064 doce energy apre and emittance of b 19 p3334 N66-31748 19 p3301 M68-31752 REPT.-9500-920126) 19 p3257 N68-31809 coherence then (USCEE-264) 19 p3318 NAB-31936 Optimium power for blend sels reached at 35 percent p a of photonium for much photonium 238 and 65 pe cent plutonium 241 INUMEC-3731-4.5-7, PT. 21 19 p3314 N68-32110 ing 1700m 19 p3303 N68-32157 20 p3401 N68-324 INASA-CR-962261 20 p3600 N68-32501 [P-3635] 20 p3514 N68-32656 oled mack NASA-CR-963741 20 p3454 N68-33163 ms. br. dyn

21 p3791 1668-33657

SU

置

orbi

IG/

INA

(RA

[GA

ORBIT

ORBIT

Pe

INA

Ca and drag

descr (FTD

INAS

and a from lite [NAS

Tra

m under vector valued criteria in linear topological spaces [NASA-CR-85133] 21 p3672 N68-33837 Optimization problems in B 21 p3712 N68-33907 Steepest descent optimization technique used in connection with characteristics method of flow field to sign rocket nozzles Method for determining mi mal response time control of linear processes 21 p3714 N68-34505 (TR-11 Optimization of alternating-periodic iris-loaded deflectors for superconducting RF beam separators (BNL-12536) 21 p3669 N68-34552 Efficient method for finding min [RM-5696-PR] 21 p3714 N68-34668 Iterative dynamic progr optimal regulator problem 22 p3851 N68-34973 Use of ce [R-386] 22 p3851 N68-35273 rogramming operations case of arbitrary rank 22 p3900 N68-35433 Explicit solution of linear nearch problems extended to od for interval linear programming - new method for lines [AD-672382] 22 p3901 N68-35578 ter error due to input signal solution to designing simple systems [JINR-P13-3812] 22 p3880 N68-35886 Direct conjugate methods for coximation to optimal flight per s for discrete-variable ap-23 p4164 N68-36103 Determining spacecraft orbit from optimal trajectory measurement parameters 23 p4165 N68-36142 Synthesis of optimum radar signals utilizing ambigui-ty function as error criteron 23 p4017 N68-36148 General optimizati ital computer program for electrical network design [NASA-CR-97199] 23 p4037 N68-36597 Modeling time varying population for constructing ptimum sampling size to describe decision theory for-[SC-CR-67-2752] 23 p4021 N68-36811 Invariant imbe problems for optin [RM-5702-PR] ns from variational 23 p4109 N68-36899 Flow chart uti FTD-HT-67-33) 23 p4028 N68-36905 Magnetic field of thick E layer, plasma scaling laws, article mommentum for optimum plasma parameters (UCID-15241) 23 p4142 N68-36918 improvement of effectiveness and economics of stellite project by proposed optimization management ESRO-TM-132/ESTEC/] 23 p4192 N68-36920

21 p3758 N68-33954 21 p3672 N68-33955 Nonlinear programming of multiple response op-mization problems, including algorithm for sequential lution of convex programming problems nizing through steepest squared analysis of error minimization and chi [IPNO/TH-117] on using statistical 24 p4273 N68-37436

Formulation and convergence of steady state process 24 p4215 N68-37782 Discharge chamber perform mercury bombardment ion thrus [NASA-CR-72440] nce optimization for ters 24 p4336 N68-37845 Optimal neutron activation analysis for agricultural [TID-24581] 24 p4216 N68-37877 Optimization of magnetic properties of thin fer-romagnetic films. [FTD-HT-23-784-67] 24 p4334 N68-38299 24 p4334 N68-38299 Pattern recognition number of mutually corre [FTD-HT-23-982-87] tion by minimizin haracteristics 24 p4241 N68-38429 Discrete Markovian deci incount optimality criteria processes with sensitive 24 p4279 N68-38448 U OPTIMAL CONTROL OPTIMUM THRUST PROGRAMMING U THRUST PROGRAMMING OR-GATES GATES [CIRCUITS] ORBIT CALCULATION

NT MINIMUM VARIANCE ORBIT DETERMINA-Light pressure effect on orbital trajectories of space vehicle interorbital flights [NASA-TM-X-60601] 01 p0134 N68-10285 01 p0134 N68-10285 Long period variations in eccentricity and perigr for Nimbus 2 explained in terms of earth zonal ha monic coefficents, plus first order earth oblateness pe 01 p0135 N68-10357 Local error control concept effect on optimization of orbital integration by multistep process [NASA-TM-X-63027] 02 p0234 N68-11110 02 p0234 N68-11110 Computer programs for digital simulations of nominal interplanetary free fall trajectories [NASA-CR-86009, V. 2, PT. 1] 02 p0269 N68-11841 Numerical integration of lunar ephomeris and nu-merical differentiation and interpolation of ephomeris DE19 03 p0414 N68-12308 Data smoothing technique tion in free flight orbit vehicle [NASA-CR-91809] for parameter optimiza-borne tracking systems 05 p0739 N68-14733 Power series represent required in orbit determin [NASA-CR-92681] of partial derivatives 07 p1013 N68-16165 Computer program equations of motion for a [NASA-TM-X-63085] umerical integration of al earth satellite orbits 07 p0971 N68-17080 Atmospheric density parameters of Cosmos 42 [RAE-TR-66210] putations from orbital 08 pi235 N68-17273 Formulas for determining ellite lifetime based on 08 p1237 N68-17375 ched into heliocentric, estems orbits since Jan. [RAE-TR-67059] 08 p1245 N68-17909 Air drag effects on sattions in air density [RAE-TR-67092, PT. 6] orbits with diurnal varia 08 p1243 N68-18244 ng orbit eccentricity dis-09 p1418 N68-18652

(BNL-123751 lyburn satellite (ROE-STS-51) [RAE-TR-67283] (D1-82-0715) and shape of orbit, at spoger, and gravita-09 p1425 N68-19242 Computer programs for rapidly computing approxi-tion cohemorides of minor planet or artificial satellite

Nonlinear correction method for orbit determination using range, azimuth, and elevation data [NASA-CR-1040] 12 p1964 N68-21864 Determination of orbital elements of a satellite from position and velocity components
[ACIC-TC-1339] 12 p1964 N68-21936 Classification scheme for restricted three body proand earth-moon mar [NASA-CR-94555] 13 p2149 N68-23269 Least squares method applied to differential cor-rection procedure based on observed and computed positions for orbit determination [ESRO-SR-7/ESDAC/] 13 p2152 N68-24006 13 p2152 N68-24006 Orbit determination tres problem and solved by pow recursive functions [BMWF-FB-W-68-08] ted as boundary valu 13 p2153 N68-24119 Recursive formulation culate satellite motion about axially-symmetric p [ESRO-SN-74/ESDAC/] 13 p2153 N68-24133 in satellite geodesy 13 p2065 N68-24191 Local error control for ization of numerical integration orbit calculum [NASA-TN-D-4542] 15 p2558 N68-25867 Effect of linearity assumpt sources on Kalman filtering in (RE-285J) s and unknown noise bit determination 15 p2424 N68-25984 Minimum fuel transfers between coplanar and non-coplanar orbits 15 p2560 N68-26394 Optimal coplanar flight between orbits with inner supply mass proportional to time of flight 16 p2756 N68-27256 Effect of beam deflecting elements on closed orbit elculations for Alternating-Gradient Synchrotron 16 p2725 N68-27969 Perturbation theory for for artificial satellites with ing Von Zeipel method 16 p2770 N68-28251 nearly circular orbits usi [NASA-TN-D-4531] Introductory work on orbital calculation at Eartracking station 17 p2968 N68-28767 tary artificial satellites and planetary gravita [NASA-CR-95575] 17 p2969 N68-28838 value problems and integral equation solution [RAE-LIB-TRANS-1279] Orbit determin m of Secor 6 /1966-51B/ from 18 p3161 N68-29633 Air density at beights near 190 km from Secor 6 orbit 18 p3067 N68-29849 Interferometry, orbital computations, and data smoothing operations at Diane station for satellite tracking 19 p3236 N68-31122 Airborne Range and Orbit Determination /AROD/ concept and its implementation, expansion, and appli-cations in surveying, navigation satellite systems, and [NASA-CR-61904] 19 p3240 N68-31512 Numerical analysis and construction of orbits asymp-tic to periodic orbit 19 p3366 N68-31778 Observations and orbit calculations for artificial earth satellite - computation of satellite position and orbital mechanics from synchronized tracking measure-19 p3368 N68-32000 Coordinate systems and perturbation theory for cal-ulating orbits and ephemerides of artificial satellites 19 p3369 N68-32010 Approximation of orbital properties from multiple satellite distance measurements by tracking stations [9 p3369 N68-32011 computing motion charac-es from spherical equatorial Modified formulas for con teristics of artificial satellites f and horizontal coordinates 19 p3369 N68-32013 rical solution of b ary value problem for 20 p3589 N68-33131 Technique for long are fitt ng as applied to IMP 3 20 p3590 N68-33214

Orbit calculations for required velocity at peri-tional effects on satellite

(NASA-TM-X-63126)

n program system lories from various for estimating space v tracking data for postfi [NASA-CR-96322] 20 p3591 N68-33361 ng for PORTRAN 4 tine descri through F 20 p3591 N68-33362 [NASA-CR-96356] ting for FORTRAN 4 orbit determination p (NASA-CR-96357) through Z 20 p3392 N68-33363 eventing divergence in Adaptive filter con applying Kalman filte [NASA-CR-96540] 21 p3721 N68-33827 Compensation for degrees in real time orbit [NASA-CR-96578] nd measurement model nation systems 21 p3721 N68-33828 Computer program nulating real time obmodel errors in three [NASA-CR-96545] al satellite motion 21 p3663 N68-33830 Effect of errors on orbit (ETV-TM-68-86-TM-89) 22 p3964 N68-36002 Motion of satellite ab formulated in local invaria [ESRO-SN-75/ESDAC/] ially-symmetric planet 23 p4176 N68-36939 sic outline of nu orbit integration for [ESRO-SM-73/ESOC/] 23 p4172 N68-36991 orbit calculation for synchronous satellites 23 p4172 N68-37059 Computer program launching and stationize [ELDO-TM-110] Astrophysical comp periodic comet Olbers [REPT.-194] f orbital elements for 23 p4173 N68-37364 te orbit design cal-24 p4302 N68-37808 Numerical analysis of low altorbits sustained by impulsive the tude, low eccentricity set, cotangent transfer maneuvers [GA/MECH/68-3] 24 p4342 N68-37919 ORBIT DECAY Analytical method artificial satellite lifetime determination [NASA-TN-D-4281] 02 p0268 N68-11754 tes in Molniya se-Lifetime estimates fories in large-eccentricity [RAE-TR-67189] 10 p1597 N68-20436 Drag of small body in wake of large satellite derived om density and momentum flux calculations for free tolecular flow at high speed ratio 23 p4173 N68-37333 [RM-426] Numerical analysis of low altitude, low occentricity bits sustained by impulsive thrust, cotangent transfer maneuvers [GA/MECH/68-3] 24 p4342 N68-37919 U ORBITAL MECHANICS ORBIT PURTURBATION NT SATELLITE PERTURBATION rturbation effects of Jupiter moons on passi spacecraft trajectory [NASA-TM-X-63060] 04 p0577 N68-13610 anonical transformations, variation of parameters Vinti intermediate orbit used to develop satellite 10 p1592 N68-20007 Numerical as suitable for tele (NLR-G.35) torial and polar orbits 10 p1597 N68-20415 Earth satellite motion as affected by perturbing ac-derations calculated for differently rotating coor-MWF-FB-W-67-37) 11 p1782 N68-21213 Effect of constantly described by differentia [FTD-MT-34-168-67] ions on moti 11 p1748 N68-21549 by direct descent to computer solutions 15 p2558 N68-25902 Trajectory optimi minimum cost using it [NASA-CR-1070] om analysis of long term plerian orbital elements or Lunar Orbiter | satel-INASA-TM-X-601271 16 p2766 N68-27572 rential corrections for tificial earth satellites 19 p3365 N68-31452

of probabilistic characteristics artificial conthesion and the contract of the

20 p3589 N68-33101

orbital perturbation of Lunar Orbit [NASA-CR-96735] 21 p3765 N68-34045 High order geopote earth satellites in 2-day (NASA-TM-X-63356) mant perturbations of surable orbits 22 p3960 N68-35587 Disturbance torque of tions of Mariner 4 and M [NASA-CR-97151] 23 p4175 N68-36324 er for handling per-Solutions of variation turbation of Keplerian in 23 p4170 N64-36791 ORBITAL ASSEMBLY Proposed modular for 5-4B Workshop 16 p2625 N68-27918 Requirements and role of extravehicular activity (EVA) in deployment, assembly, and maintenance of in-space erectable structures during earth orbital mis-16 p2773 N68-27934 raft rendezvous and sture launch capabilities 21 p3767 N68-34137 (NASA-TT-F-11939) ORBITAL ELEMENTS Satellite mean orbit [NASA-CR-90037] 01 p0134 N68-10278 Method for improving VINTI spheroidal satellite orbital elements for without use of obser-Velicinal data [NASA-TM-X-63028] 02 p0265 N68-11280 nization of con ts between fixed orbits 04 p0575 N68-13336 05 p0738 N68-14696 Visual observati orbital elements [RAE-TR-67082] 06 p0909 N68-15307 nd orbital elements for ry spacecraft 06 p0871 N68-15773 Space navigationa earth satellites and in INASA-CR-925681 Orbital elements of nine s 09 p1422 N68-18859 Classifying Cosmos a s by orbital ele-10 p1599 N68-19652 Cosmos 97 satellite during lif [RAE-TR-67188] 10 p1993 N68-20173 Tabulated data on SAO m nts derived from (NASA-CR-95866) 18 p3167 N68-30687 tracking, orbit calcu-Geodetic satellite ph lations, and related stor (NASA-CR-97155) 23 p4053 N68-36174 Geor I based on K-50 and laser passive, flash. 23 p4165 N68-36184 is of Geos I data based on 23 p4165 N68-36185 tical models for performance analyses on life tracking systems determining mass of orbiting body (ESD-TR-64-157, V. 2) 23 p4061 N68-36393 Orbit of Cosmos 44 through first cycle of argument [RAE-TR-68023] 23 p4171 N68-36874 Astrophysical comperiodic comet Others (REPT.-194) d orbital elements for 23 p4173 N68-37364 ORBITAL LAUNCHING aft rendervous and ture issuech capabilities [NASA-TT-F-11939] 21 p3767 N68-34137 ORBITAL MECHANICS NT REPLER LAWS NT MINIMUM VARIANCE ORBIT DETERMINA-TION Tables for parabolic [NASA-CR-90250] 02 p0264 N68-11033 NASA-TN-D-41691 02 p0366 N68-11369 02 p0265 N68-11406

Principles of earth-orbital navigation [ISR-5] 04 p0574 N68-13064 one derived for analyzing ground track of sun INASA-TM-X-63066) 04 p0577 N68-13557 Iterative solution of equationatellite orbit with earth shadow [RAE-LIB-TRANS-1253] 07 p1083 N68-17147 (NASA-CR-1010) 07 p1083 N68-17215 Hodographic treatment restricted three body NASA-CR-61615] 09 p1419 N68-18781 Gravity model composital solutions [NASA-TM-X-63158] ing Geos-I long are or-11 p1693 N68-21594 General method for or solution of boundary value (BMWF-FB-W-67-35) 11 p1786 N68-21716 Equatorial orbit ascent titudes by skipping and mehing sites of great naneuver in upper at-BMWF-FB-W-67-27] 11 p1787 N68-21800 Numerical analysis of Keplerian orbits [NASA-TT-F-11590] optimal transfer between 12 p1966 N68-22247 ions of Ham 15 p2561 N68-26642 [NASA-TN-D-4562] Planetery gravitation a orbit alignment in Mars a [NASA-TN-D-4657] teness used for parking 17 p2966 N68-28408 orbital eccentricity and relitie attitude stability 17 p2968 N68-28763 Equations of motion nergy dissipation effec (NASA-CR-95577) (NASA-CR-95948) 19 p3364 N68-31418 Direct and planetar rections by means of a [NASA-TT-F-11827] 19 p3368 N68-31962 Hodograph of two b analytic relations for tr [NASA-TM-X-63307] 20 p3590 N68-33202 representative Mars m (NASA-TM-X-1651) 20 p3592 N64-33371 elliptic orbus IONERA-P-126) 23 p4173 N68-37332 ace flight mechanics with low thrust propulsi (FTD-HT-23-1241-67) 24 p4342 N68-38244 U ORBITS ORBITAL RENDEZVOUS Operational render es dem 05 p0740 N68-14942 support for Ger 05 p0741 N68-14943 rajectories for variable space vehicles 12 p1965 N68-22202 NASA-CR-1036 Orbital rendervo Cosmos 212 and 213 (NASA-CR-94771) cking experi 14 p2352 N68-25370 iptical orbits (ONERA-P-1211 17 p2967 N68-29667 fied and a equations of motion NASA-TN-D-4670 17 p2960 N68-28941 ruft rendervous [NASA-TT-F-11939] 21 p3767 N6B-34137 U SPACE SIMULATORS STAL SPACE STATE

3

[

1

4

128

D

N.

org

byd oth

ty or (EC

S) disc

R.

in orga

Recurrence formulas for deriving equations of mo-on for system of multiple rigid bodies and applications problems of space flight dynamics Reactions of epoxides with trialkyl and tryalkoxy boroxines for clarification of foam producing reaction of trimethoxyboroxine with vinyl cyclobexene dioxide [MLM-1440] Orbital parameters in simple approximate wave func-tions for helium 24 p4212 N68-37617 13 p2156 N68-23088 ORBITER PROJECT NT LUNAR ORBITER Reaction wheel system for coarse and fine star ferenced altitude control of stellar observatory satel-ORGANIC CHEMISTRY Thermodynamic analysis of spacecraft thermal control and pressurization requirements for Mars Orbiter and Mars Excursion Module missions [NASA-CR-96740] 21 p3758 N68-34079 Organic chemistry studies dealing with pyrolysis echanisms, isotopic data analysis, shielding effects, esonance spectra, extractions, and photopolymeriza-14 p2345 N68-24782 [RAE-TR-67056] Self-locomotive capabilities of surface and in rotating space static es of astronauts on lunar 05 p0620 N68-14145 ORBITING ASTRONOMICAL OBSERVATORY
U OAO Lead tetracetate as oxidizing agent for synthetic and degradation processes in organic chemistry and uilding models of reaction mechanisms pure 4021 14 p2204 N68-24873 Estimation of OWS auxillary attitude control system ORBITING DIPOLES requirements during docking and storage [NASA-CR-61820] 16 p2754 N68-26967 Antenna radiation patterns of Hertz dipole moving cound conducting uphere in circular orbit [R-43] 18 p3033 N68-29751 [JPRS-45021] 12 p1831 N68-21861 Applications of lead tetrascetate as oxidizing agent or synthetic and degradation processes in organic Structural design and living-volume requirements of orbital space stations with artificial gravity 17 p2830 N68-29129 [TR-43] ORBITING GEOPHYSICAL OBSERVATORY U OGO 12 p1831 N68-21862 Ring structure of organic sulfur compounds 15 p2405 N68-26027 Orbital space station attitude control and experiment control technology requirements
20 p3594 N68-33174 ORBITING SATELLITES
U ARTIFICIAL SATELLITES ORBITING SOLAR OBSERVATORY
U OSO uterocycles 16 p2607 N68-27101 Chemistry of organic oxygen het ORBITAL TRANSFER
U TRANSFER ORBITS ORBITS Activation, hot-atom chem mers processes in organic comp [PRNC-114] stry, and Szilard-Chal-IS
APOGEES
CIRCULAR ORBITS
EARTH ORBITS
ELLIPTICAL ORBITS
EQUATORIAL ORBITS
INTERPLANETARY TRANSFER ORBITS ORBITAL VELOCITY NT NT Determination of orbital elements of a satellite from sition and velocity components 17 p2840 N68-28804 position and velocity components [ACIC-TC-1339] 12 p1964 N68-21936 Substituent effects in organic silic ilicon chemistry 18 p3018 N68-29677 NT Orbiting and resonance states of elastic scattering at otential harrier energies Heuristic computer program ry hypotheses in organic chem rum for generating explanapotential barrier energies [JINR P2-3692] LUNAR ORBITS
PARKING ORBITS (Al-MEMO-62) 14 p2297 N68-24681 23 p4008 N68-36406 Compunitional method for orbiting astronauts to etermine required velocity for two impulse abort to Trends in development of inoganic, organic, and physical chemistry in Poland PERIGEES NT NT PERIHELIONS PERHELIONS
PLANETARY ORBITS
POLAR ORBITS
SATELLITE ORBITS
SOLAR ORBITS
SPACECRAFT ORBITS
STATIONARY ORBITS
STATIONARY ORBITS
TRANSFER ORBITS
TWENTY-FOUR HOUR ORBITS 24 p4220 N68-38327 14 p2287 N68-25103 ORGANIC COMPOUNDS

NT ACETIC ACID

NT ADENINES

NT ADENISIE DIPHOSPHATE (ADP)

NT ADENOSINE TRIPHOSPHATE [ATP] Relativistic corrections calculated for one way Dop-pler system used in calculating orbital velocity [NASA-CR-96745] 21 p3657 N68-33997 ORBITAL WORKERS ALANINE AMINO ACIDS ASPARTIC ACID Simulated astronaut translational motion across Saturn S-4B stage orbital workshop crew quarters floor and wall grid configurations [NASA-TM-X-33667] 02 p0271 N68-11192 Photographic observations of meteors and orbit CHOLINE ETHYLENEDIAMINETETRAACETIC ACIDS [NASA-CR-90249] 02 p0271 N68-11192 02 p0264 N68-11015 Space activity suit designed for active astronaut working in vacuum environments for up to four hours [NASA-CR-973] 02 p0171 N68-11510 Orbits of meteor bodies and origin of hard com-onent of interplanetary medium FATTY ACIDS
FLUORINE ORGANIC COMPOUNDS
FLUOROAMINES
FLUOROCARBONS
FLUOROCARBONS
GLUTAMIC ACID 16 p2762 N68-27504 Radio survey and statistical distribution of orbits of setrors observed in Southern Hemisphere 16 p2763 N68-27505 Space tool configurations for extravehicular main-[NASA-CR-91052] 03 p0308 N68-11948 NT NT NT NT NT NT GLYTAMIC ACID
GLYCINE
HIPPURIC ACID
LYSINE
NITROFLUORAMINES
NUCLEOTIDES
OLEIC ACID
OXIDASE Body positioning and restraint problems encountered during Gemini extravehicular missions Theory for determining geopotential from orbital otion of artificial satellites dar missions 05 p0616 N68-14948 19 n3364 N68-31234 Medical aspects of Gemini extravehicular activities-physiological responses of astronauts to high wor-kloads, thermal stresses, and low fatigue tolerance 05 p0616 No8-14950 Behavior near periodic orbit of functional dif-[NASA-CR-95959] 19 p3301 N68-31999 Method for determini near synchronous satellite [TR-0158/3307-01/-19] PEPTIDES
PERFLUOROALKANE
PROPIONIC ACID
PYRIDINE NUCLEOTIDES
THYROXINE ing orbits of near equatorial, Gemini program astronaut flight experiences methods and orbital flight experiences 05 p0646 N68-14961 20 p3591 N68-33310 Motion and stability of spinning cable-connected heavy point mass moving in undisturbed Keplerian orbit Orbital workshop and X ray telescope mount for Apollo applications program dependence of change effect ining groups and adjacent pi elec-ed by spectroamalysis 02 p0179 N68-11899 Conformational depe 08 p1236 N68-17351 23 p4165 N68-36136 ronmental and mobility constraints of thropomorphic space suit configuration 09 pl287 N68-18729 ORDENATES
U COORDINATES ologic history of earth, anic compounds 03 p0339 N68-12083 cular structures of org ORDNANCE Evaluation of astro ut extravehicular life support Computer program to support Fourier analysis on corrected HERO turnable data [NWL-K-51/67] 02 p0184 N68-11137 system for project Gemini (NASA-CR-92066) miconductor materials 03 p0405 N68-12156 13 p2008 N68-24339 [AFCRL-67-0554] Requirements and role of extravehicular activity /EVA/ in deployment, assembly, and maintenance of in-space erectable structures during earth orbital mis-Review of papers pr on organophosphorous Computer program to compute and plot research data on hazards of electromagnetic radiation to and organomercury ch [AROD-2832-37-C] 03 p0314 N68-12512 [NWL-TR-2139] 13 p2037 N68-24221 16 p2773 N68-27934 Semi-micro analytical method for quantitative deter-ination of chlorine in highly chlorinated organic com-Parachute drogue trajectories, mean velocities identifying data tables, wind observations, and computer programs used in processing data on subsurface ocean currents off Oregon [REPT.-26] OREGON Gemini in-flight controlled experiment for testing surrent methods used to predict visual acuity of as-ronants in space 04 p0469 N68-13525 injection systems for high resolution columns, and pyrolysis gas chromatography for structure elucidation and characterization of volatile organic substances 21 p3642 N68-34534 **ORBITALS** organic substances 06 p0796 N68-16069 10 p1522 N68-20019 NT ELECTRON ORBITALS NT MOLECULAR ORBITALS NT SLATER ORBITALS Airborne atmospheric or vicinity of Crater Lake, Orego [SIO-REF.-68-18, PT. 1] ical measurements in organic compou [EUR-3731.F] Higher orbital states in framework of symmetry 07 p0960 N68-17129 23 p4054 N68-36408 Chemisorption kinetics or ith hydrogen atoms on plati etics of adsorbed organic layers in platinum electropes 08 p1142 N68-17958 [FF-67-10] ORES U MINERALS 05 p0717 N68-14718 Free electron and Huckel-molecular orbital models for calculating longitudinal polarizabilities of polyenes [ONR-TR-99] 12 p1842 N68-23042

ORGANIC ALUMINUM COMPOUNDS

ORGANIC BORON COMPOUNDS

[IS-T-100]

11. 21

Crystal structures of triphenyl aluminum and lead

Tests of horazine and borazole derivatives as scintil-lators for slow neutrons [CNEA-206] 14 p2220 N68-25652

10 p1484 N68-19926

14 p2220 N68-25652

Electron parametric res determination of molecular free radicals [AFOSR-68-0060]

Ellipsometric measurercury, and reversibil

c resonance spectroscopy for cular wave functions of organic

ment of ion adsorption on of organic reactions /chemis-

08 p1144 N68-18073

08 p1145 N68-18217

Atomic orbitals, nuclear structure, and wave func-tions of interacting particle shells. [T-R-644] 18 p3127 N68-29733

18 a3127 N68-29733

Fock self consistent field orbitals

[T-L-13]

Y

45

tic and

61

62

27

01

al-

04

77

06

md

27

18

199

rih.

183

nls 156

DUS

512

ter-

ing

129

en

958

for

073

217

Oxidation of unsaturated compounds with organic NIC-TRANS-24781 09 p1293 N68-18459 Coordination effect on re tivity of aromatic ligands 09 p1295 N68-18884 Deuterium and tritium effects on rates of organic [COO-1008-3] Ruby laser excitation for Raman spectra analyses on organic solids 09 p1297 N68-18967 09 p1350 N68-19478 Oriented growth of organic compounds, and temperature effect on oriented precipitations of crystals [JPRS-44895] 10 p1481 N68-19634 High pressure electron a organic free radicals 10 p1482 N68-19780 Electron spin resonance of irradiated organic single crystals 10 n1483 N68-19877 Asymmetry parameters from chlorine nuclear quadrupole resonance spectra of organic compounds, and impurity colloid in potassium iodide n iodide 10 p1493 N68-20513 Molecular spectroscopy studies on multiplicities of phosphorescent states of organic compounds, and elec-tronic structure of sulfur-sulfur bonds 11 p1650 N68-21069 (UCRL-TRANS-10166) n pure organic crystals 11 p1754 N68-21136 Cation-radical formation in organic sulfur, selenium, (AFOSR-68-0392) 11 p1653 N68-21334 Quantitative analysis of organic compounds by X ray [AFML-TR-67-403] 11 p1657 N68-21645 Electrical and photo miconducting polyme cal properties of organic electronic, but not ionic conductivity mo 11 p1776 N68-21822 Heated ionization chambers ments in mixtures of organic vapors 13 p2016 N68-23746 Heated ionization chamber for ion current measure-Low cost information storage and retrieval system for small collection of organic chemicals 13 p2177 N68-24096 Permuted line notations and classification of organic compounds by elemental structure and bonding 13 p2177 N68-24103 Algorithms for transforming Wiswesser organic chemical structure notations into connection tables and treating linearly fused chemical ring structures 13 pz 178 N68-24108 Equations of state of solid and liquid organic high [DOC.-67SD320] 14 p2275 N68-24367 Electrochemistry of high energy compounds in orgamic electrolytes INASA-CR-947361 14 p2212 N68-24665 Base strength of various neutral organophosphorus [NUS-R-519] 14 p2214 N68-24741 Protonation constants and basicities determined for selected organic oxides [NIJS-R-518] 14 p2216 N68-24982 Spectrophotometric determ ganoelemental compounds nations of phosphorus in 14 p2219 N68-25615 Shock wave generated thermodynamic data for hydrocarbons, organic compounds, explosives, and other alloys and mixtures [UCRL-50108, V. 2, SUP. 1] 15 p2565 N68-25693 Voltammetric studies of reduction of organic com-pounds in organic solvents for use in high energy densi-ty organic electrolyte batteries [ECOM-02464-F] 16 p2608 N68-27313 16 p2608 N68-27313 pounds by electric Synthesis of organic discharges in simulated pris [NASA-TM-X-59854] atmospheres 16 p2597 N68-27617 Role of radiation in pri 16 p2597 N68-27635 Infrared and Raman spectra and structure of several organic compounds

ical changes that occur during irempounds by low and high energy

16 p2613 N68-28093

17 p2836 N68-28431

17 p2818 N68-28507

olytes 17 p2812 N68-28728

ethenes 17 p2847 N68-29523

18 p3017 N68-29576

lungsten compounds and l'organie semiconductors

19 p3223 N68-31125

19 p3229 N68-31795

19 p3212 N68-32141

20 p3572 N68-33051

ta tables for CHNOPS stion and formation for

20 p3432 N68-33427

21 p3636 N68-34245

ic crystals 21 p3754 N68-34316

hamical calculations of organic molecules 22 p3823 N68-35169

23 p4005 N68-36187

for organic aerosol and

23 p4012 N68-36860

12 p1983 N68-22439

sculated for organic

15 p2576 N68-26397

ctive tests of organic nure tubes 18 p3116 N68-30289

oxygen-argon gas mix-

21 p3652 N68-34479

to determine behavior of tor coolant 23 p4104 N68-37118

05 p0693 N68-14337

gh atmospheric sampling 23 p4010 N68-36675

inds of tital 20 p3430 N68-33073

on energy for super

studied for utilization of and use in closed ecologi-

Mechanism of chemical radiation of organic compo secondary electrons (IFTRI-U6027-4) Gamma ray induced color centers in seven aromatic crystals Extracting organic compounds from Chlorella cul-Hydrogen oxygen fuel cell use in Gemini and Apollo spacecraft, and experiments on direct use of cheap or-ganic fuels and molten salt electrolytes Concentration of dissolved and nonliving particulate organic carbon in sea water [NYO-3862-7] 17 p2877 N68-28963 Theory and experiments in new types of substitution reactions on pyrroles and pyrromethenes Eudiometric study of oxidation of organic com-pounds by molecular oxygen Effects of impurities on electrical properties of or-inic semiconductors and photoconductivity (RB2031F] 18 p3153 N68-30148 MRB2031F] [AROD-3783-4-C] Electrical and photoelectrical properties of molecular crystals determined from ionization energies of molecules, electron affinities of molecules, and AFOSR-68-1344 Effects of impurities on activate cooled, liquid orthophenanthroline Crystal structure of organudied with X ray diffraction Thermodynamic property compounds and heats of cor-organic compounds of biolog [NASA-CR-96468] Absorption of purines, pyrimidines, and nucleoside aqueous solution by montmorillionite occurring as [NASA-CR-89254] [CALT-383-5] Preparation and pyrolysis of aromatic hydrazones ad hydrazonium salts for use in thermal reaction bat-(HDL-TR-1398, PT. 2) Test equipment dev (NASA-CR-73253) Tracer and isotope effect studies in organic chemis-[ORO-3234-6] OBGANIC COOLANTS Heat transfer by organic cools [RISO-162] Heat transfer coefficier liquids in organic cooled res [FTD-MT-67-45] Destructive and nondest cooled heavy water reactor pr [EUR-3929.E] Oxidation experiments v ture on organic reactor cor [Al-AEC-MEMO-12688] Shock tube blow decompression of nuc (HTRI-578-P-21-35) OBGANIC COOLED REACTORS 16 p2609 N68-27648 Design, fabrication, and operation of heavy water or-ganic cooled reactor [AI-CE-45] 02 p0236 N68-11016 Products of pyrolysis of simple organic molecules by gas chromatography 16 p2509 N68-27717 Stainless steel aluminum transition joint for use at elevated temperatures in heavy water organic cooled Chemical evolution and formation of pre-biological solecular systems [Al-CE-72] 16 p2599 N68-27879

ORGANIC MATERIALS Economics and potentials of CANDU reactors [AECL-2795] 12 p1913 N68-23007 Developments in Canadian organic cooled heavy water moderated pressure tube reactor technology [AECL-2943] 12 p1913 N68-23008 THESEE-1 - FORTRAN computer program for cal-culating thermal and thermohydraulic performances of organic cooled reactor [EUR-3905.F] 14 p2288 N68-24469 14 p2288 N68-24469 Heat transfer coefficie ated for organic liquids in organic of 15 p2576 N68-26397 Uranium dioxide feels for organic cooled reactors [AECL-2758] 17 p2913 N68-28369 Piqua Power Reactor recovery core lower grid plate [AI-AEC-MEMO-12574] 20 p3535 N68-33493 Fouling experiments and cranium cooling loop of heavy coolant chemistry for vy water organic cooled [AECL-3070] 10/1/16 a 27 / 124 p4220 N68-38345 ORGANIC FLUORINE COMPOUNDS
U FLUORINE ORGANIC COMPOUNDS ORGANIC GERMANIUM COMPOUNDS Direct synthesis of organogermanium tribalides (ARPA-321 03 p0314 N68-1244) **ORGANIC LASERS** Mode locking of organic dye lasers, optical rectifition of mode-locked laser pulses, nanosect fluorescent decay times, light amplification, and ebon dioxide laser pulse [F-920479-6]

11 p1709 168-207 pulses, nanosecone emplification, and car-11 p1709 N68-20796 ORGANIC LIQUIDS Heat transfer coefficients for organic liquids, such as unuisopropyldiphenyl, over pipe lengths 02 p0287 N68-11724 Radiochemical studies on ferrite solutions, liquid ethylene, liquid methane, hydroxylation of aromatic compounds, oxygen spectra, and various electron spin resonance analyses on liquids resonance analyse [RRL-2310-188] 03 p0316 N68-12606 lane and vinyltriethoz-quid silica interfaces 08 p1190 N68-17677 on pulses in organic liquids 11 p1649 N68-21028 [TID-24223] Chemical proc (NYO-2668-15) is of liquids 13 p2011 N65-23304 uency of organic liquid 13 p2055 N68-24121 15 p2415 N68-26396 es, free radicals, ions, try related to orga 24 p4221 N68-38498 **ORGANIC LITHIUM COMPOUNDS** Activated storage life and d ment of lithium/copper fluoride [ECOM-02304-F] arge rate improve-01 p0021 N68-10516 prese reaction with or-yl other 02 p0179 N68-11883 Organolithism reagents and surreochemistry of asymmetric silicon - formation and cleavage reactions of silicon-carbon band 10 p1493 N68-20496 ORGANIC MATERIALS Increased power output from cells made of organic 07 p1065 N68-16386 of organic material spacecraft 16 p2769 NSS-27915 Evaluation of fe delivered to surface (NASA-CB-95185) Organic materials and Free decorate [NASA-CR-61604] 16 a2691 N68-27916 NASA-CR-963781 20 p34T3 N68-33243 trometry method and Gas chromatograp apparatus for analyzi [NASA-CR-89481] 21 p3764 N68-33686

22 p3009 N68-35947

		35 7 10 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
ORGANIC MODERATED REACTORS	European Southern Observatory scientific activities and organization	Biological effects of X ray irradiation on embryonic mouse organs and correlating mitotic with epithelial
Test evaluation of monoisopropyl diphenyl, and gas oil as organic reactor moderators	23 p4041 N68-37124	growth rates [NYO-3355-31] 22 p3814 N68-35860
[FTD-HT-66-746] 04 p0337 N68-12884 Zirconium alloy clad uranium dioxide fuel bundles	ORGANOMETALLIC COMPOUNDS NT CHLOROPHYLLS NT FERROCENES	ORIC CYCLOTRON U OAK RIDGE ISOCHRONOUS CYCLOTRON
for use in pressurized water, boiling water, and organic liquid cooled reactor systems	NT FERROCENES NT HEMOGLOBIN NT ORGANIC ALUMINUM COMPOUNDS	ORIENTATION
[AECL-2928] 07 p1033 N68-17103 Kinetic and reactive behavior of two organic	NT ORGANIC GERMANIUM COMPOUNDS NT ORGANIC LITHIUM COMPOUNDS	Relationship between sensor outputs and rocket orientation considered in terms of Euler coordinate
moderated and reflected, loosely coupled reactor cores	NT ORGANIC TIN COMPOUNDS NT OXYHEMOGLOBIN	transformations [NRL-6537] 02 p0209 N68-11080
[RT/FV68/27] 24 p4316 N68-37938 ORGANIC NITRATES	NT PORPHINES Organometallic molecular chelate extraction into or-	Comparison of two-photo and three-photo relative orientation
NT CELLULOSE NITRATE NT NITROFORMS	ganic solvents, and chromatographic analysis of quin- olinol chelate adsorption	[PB-176462] 10 p1527 N68-19501 Drop tower investigation of liquid reorientation in
NT NITROGLYCERIN NT PETN	[ARL-67-0191] D4 p0465 N68-12885	spherical containers [NASA-TM-X-1659] 22 p3857 N68-35114
Semitizing effect of liquid organic nitrates on high safety ammonium nitrate explosives	Spectrophotometry of ascorbinate complexes of group 4 through group 8 elements	ORIFICE FLOW
02 p0177 N68-11463	06 p0794 N68-15965 Isotopic tracer analyses on dissociation constants	Orifice flow configuration for spherical gas journal bearing to insure pneumatic stability and large load
ORGANIC PHOSPHORUS COMPOUNDS Organic phosphorus compounds in pharmacology,	Isotopic tracer analyses on dissociation constants and extraction yields of aromatic Schiff bases as func- tion of electrolyte ion concentration	[AEDC-TR-67-222] 03 p0346 N68-11929
biological activities, hydrometallurgy, hydraulic fluids, and textiles	[INP-573/C] 07 p0953 N68-16159	Gas measuring system errors arising from thermo- molecular pressure effects in tubes and at orifices
[JPRS-43702] 03 p0311 N68-12154 Structural and functional relationships in reactions	Structure and properties of metal complexes formed from organic ligands [AD-663164] 07 p0958 N68-16680	molecular pressure effects in tubes and at orifices [AGARDOGRAPH-119] 09 p1450 N68-19195 Two phase flow through apertures
(AD-661450) 04 p0456 N68-13552	Gamma ray effect on synthesis of organo-tin stabil-	10 p1512 N68-20049
Chemistry of organophosphorus compounds	izers and catalysts for visyl chloride plastics and polyesters	Analysis of submerged incompressible steady turbu- lent jet issuing from annular orifice and flowing axially along cylindrical surface
[JPRS-44591] 08 p1144 N68-18063 Elemental analysis of organophosphorus compounds	07 p0959 N68-16791 Thermal decomposition of organic tin compounds	12 p1861 N68-22222
and separation of uranium ions [JPRS-45458] 14 p2219 N68-25612	[AROD-6151-1-C] 09 p1293 N68-18528	Scaling and similarity study of liquids discharged from containers through orifices and tubes
Unstable organophosphorus compounds analyzed	Preparation and reactivity of 5/6 and 5/7 ring or- ganometallic pi complexes of molybdenum, tungsten, and rhenium	[NASA-CR-61964] 22 p3858 N68-35229
with selenium as desentitizer 14 p2219 N68-25613	09 p1300 N68-19384	Supersonic wind tunnel tests of orifice venting characteristics and three dimensional flow on flat
Additives for jet engine lubricating oils and effect of organic phosphorus compounds on thermal stability and corrosion prevention	Technical feasibility of preparing chromium metal by thermal decomposition of bisbenzene chromium	[NASA-CR-61241] 22 p3801 N68-35965
and corrosion prevention [NRL-6667] 17 p2895 N68-29280	[BM-RJ-7112] 10 p1480 N68-19576 Luminescence of some ruthenium and osmium com-	Measuring superfluid helium flow through orifices between high Q microwave resonant cavities
Protective action of organophosphorus complexing agents in poisoning by soluble beryllium compounds in	plexes 10 p1484 N68-19927	23 p4106 N68-36228 ORDPICES
Tafa [JPRS-45973] 19 p3227 N68-31485	Nuclear magnetic resonance studies of organometal-	Orifice type pressure probe in nearly free molecule
Brewster asymmetry rules for deriving molecular	lic exchange reactions 10 p1486 N68-20021	[NAL-TR-136] 01 p0052 N68-10779
rotation of /R/-sarin (TDCK-30964) 20 p3422 N68-32705	Group I and 3 organometallic exchange reactions 11 p1646 N68-20783	Flow measurements of superfluid helium in submil- limeter round capillaries and orifices
ORGANIC SILICON COMPOUNDS Research in synthesis and characterization of highly	Solvent extraction techniques for partial resolution of organic racemates and optically active neutral che-	[AFOSR-68-0150] 09 p1382 N68-18712 Orifice inlet effects on performance of straight cylin-
arylated organosilicon compounds [ARL-67-0159] 07 p0958 N68-16718	[AROD-3909-3-C] 11 p1658 N68-21750	drical diffusers [NAPTC-ATD-143] 11 p1777 N68-20595
Synthesis of selected organosilicon compounds 11 p1649 N68-21047	Electron transfer through conjugated organic ligands	Performance data for square-edged orifices and ori- fice-target combinations used as air mixers
Substituent effects in organic silicon chemistry	13 p2010 N68-23216	16 p2649 N68-27889
ORGANIC TIN COMPOUNDS	Mossbauer spectroscopy for study of synthetic iron complexes	Acoustic excitation of boundary layers and effect of air flow on acoustic impedance of orifices [AMRL-TR-67-120, V. 2]
Monbauer spectra of tin hydride and related organic	[NYO-3859-2] 14 p2196 N68-24781 Thermodynamic stability measurements on aliphatic	18 p3122 N68-29724
derivatives 10 p1482 N68-19737	phosphine metal compounds 18 p3029 N68-30520	Determining orifice dimension in perforated plate for driver-reservoir technique in shock tunnel
ORGANISMS Responsiveness of irradiated organisms to chronic O-	Poly/metal phosphinates/ as antistatic and protective coatings and lubricant thickeners	[NPL-AERO-1255] 18 p3055 N68-30019 ORION AIRCRAFT
loading in space flights [SAM-TT-R-941-1267] 07 p0945 N68-16595	[AD-671882] 20 p3511 N68-32957	U P-3 AIRCRAFT ORION CONSTELLATION
Information processing in bionic systems	Donor properties of tellurium in transitional metal complexes	Aerobee rocket ultraviolet spectrophotometry in
10 p1478 N68-20572 History of origin and initial development of carbon compounds, primitive organisms, and life on earth	23 p4004 N68-36086 Preparation and analysis of homogeneous	Orion region [NASA-TM-X-63044] 02 p0267 N68-11652
compounds, primitive organisms, and life on earth [NASA-TT-F-488] 13 p2002 N68-24272	azidometallic complexes and phosphine-containing	Stellar spectrophotometry of 197 stars in or near Orion nebula
Automatic control theory applied to pathological processes in human organism during burn shock.	23 p4006 N68-36238	02 p0267 N68-11716
13 p2393 Non-20203	Nitrosyl complexes of ferrous metals with dimeric sulfurous and nitrogenous ligands	Position and location of flare stars in Pleindes and Praesepe clusters, Orion nebula through monochro- matic liquid filters, and stellar spectrophotometry in or
Cybernetic techniques for improving diagnosis, and problems of simulating human organisms and disease 15 p2395 N68-26266	23 p4013 N68-36986 ORGANOMETALLIC POLYMERS	near Orion nebula [AFCRL-66-418] 06 µ0907 N68-15085
Problems involved in computerized simulation of	Metallo semi-inorganic polymer synthesis to obtain high thermal and hydrolytic stability	
human organisms 15 p2396 N68-26267	[VD-660361] OT bottl see-11450	Energy distribution measurements on infrared objects located in H2 and gaseous nebulae regions [NASA-CR-92724] 07 p1078 N68-16304
Astrophysical experiments on possibility of terrestri- al organisms survival in Mars environment	Thermal stabilities of polymeric copper, nicket, zinc, and cadmium chelates	Interstellar extinction in Orion association 09 p1418 N68-18516
17 p2820 N68-28517	12 p1833 N68-22176	Condensations in Orion nebula indicated by model
ORGANIZATIONS U BUREAUS [ORGANIZATIONS]	NT KIDNEYS	that assumes neutral gas surrounded by ionized gas 21 p3769 N66-34225
U NORTH ATLANTIC TREATY ORGANIZA- TION (NATO)	NT LIVER NT LUNGS	Description of ultraviolet spectrophotometric equip- ment and telemetry system for experiment CEPHEE. 23 p4177 N68-37135
	NT SPLEEN	23 p4177 Nb8-37135
ORGANIZING	NT STOMACH	ORIONID METEOROIDS
ONGANIZING	NT STOMACH Criteria for radiation protection, and permissible oc-	
ORGANIZING	NT STOMACH	ORIOND METEOROIDS Electron diffraction and microprobe analysis of ex- traterrestrial particles collected by Luster 2 rocket dur- ing Orionid shower [INASA-CR-96744] 21 p3766 N68-34092

EX

5860

1080

9501

n in

5114

1929

1195

0049

2222 rged

229

965

ices

228

cule

779

mil-

712

din-

595

ori-

889

t of

724

019

in

652

716

and iro-

085 ob-

304

116

del

225

35

N

SUBJECT INDEX ORNITHOPTER AIRCRAFT
U RESEARCH AIRCRAFT OROGRAPHY Tectonic fractures and origin of Crimean morridges 06 p0836 N68-15392 Wind profiles associated with cold fronts in northern Honan analyzed with respect to orographic conditions [EMM-66-140] 09 p1367 N68-18313 Meteorological aspects of Fairbanks flood of August [UAG-R-204] 21 p3721 N68-34805 Mountainous regions effect on displacement of barotropic distrubances [EMM-66-67] 24 p4283 N68-38239 ORRERIES
U ASTRONOMICAL MODELS ORTHICONS
U IMAGE ORTHICONS ORTHO HYDROGEN U TRITIUM ORTHO PARA CONVERSION Ortho para separations of norr terium at liquid hydrogen tempera [NYO-3783-3] nal hydrogen or de 07 p0952 N68-16129 Catalytic reactions of hydro icon dioxides igen on titanium and sil-18 p3027 N68-30356 ORTHOGONAL FUNCTIONS Coherent account of countably additive orthogonally scattered measures with values in Hilbert space, and integration of related complex valued functions [MRC-TSR-738] 06 p0859 N68-15092 Data reduction by numerical differentiation using orthogonal polynomials [BRL-1380] 07 p1014 N68-16420 Orthogonal functions to matological elements [EMM-66-89] describe fields of cli-07 p1019 N68-16870 Density estimation by orth nal series 15 p2494 N68-26544 Orthogonal polynomial sets for representing partial and total thermodynamic excess functions for binary 18 p3184 N68-29782 dy creep assessed by theory 21 p3784 N68-33796 Orthogonal expansion and invariant imbedding schmique for wave propagation analysis in in-omogeneous media 21 p3730 N68-33876 Analog and digital simulations of multiplex NASA-CR-87716] 15 p2421 N68-25680 Orthogonal telemetry systems, decoding analysis, and error probability 19 p3236 N68-31026

ORTHOGONAL MULTIPLEXING TREORY Systems analysis of performance of M-ary orthogonal and M-ary PAM feedback communication 22 p3832 N68-35009 Orthogonal multiplexing theory and general design criteria related to unified S band communication (NASA-CR-97100) 22 p3839 N68-35903 ORTHOGONALITY

Gimballess inertia [NASA-CR-90222] 02 p0234 N68-11064 Theorem of ortho [SC-RR-67-650] ces with odd index 05 p0684 N68-14882

Natural freque

08 p1247 N68-17503 Fundamental theorems of perators and application stension of Hermitian theory of orthogonal TG-230-T5361 15 p2493 N68-26511

Orthogonality print optimal and suboptim [NASA-CR-97072] ovariance equations for 100thing 22 p3838 N68-35746

ORTHOGRAPHY U GRAPHOLOGY U HANDWRITING

ORTHONORMAL FUNCTIONS

Methodology and general purpose FORTRAN 4 programs for synthesis and utilization of multivariable polynomial discriminant functions DAC-62203) 16 m2634 N68-27751 16 p2635 N68-27752

FORTRAN 4 progra is of multivariable 16 p2635 N68-27753

erties calcu 22 p3898 N68-35020

23 p4091 N68-37400

atrix theory and applications within 24 p4275 N68-37685

ORTHOGTATIC TOLERANCE

Pulnatile leg cuffs effective orthostatic intolerance and tremities of Gemini 5 and 7 iveness in lessening postflight d blood pooling in lower ex-01 p0007 N68-10182

e cardi deconditioning of spi [NASA-CR-90251] 02 p0164 N68-11065 ts as indices of peripheral

INASA-CR-932471 08 p1130 N68-17734

ogical changes during ned space flight 10 p1470 N68-20547 Predicted effects and phy rolonged weightlessness of a

scular regulatory 10 p1471 N68-20557

blood pressure, heart lowing bed rest and tilt

16 p2598 N68-27783 ic responses, fluid and min ponents, and other data obta bed rest and tilt tolerance ter

[NASA-CR-92178, PT. 2] 16 p2598 N68-27784 support systems for manne physiological and psychologic exobiological experiments [JPRS-46456]

21 p3631 N68-53909 ic tolerance after pro-

21 n3633 N68-33916 ORTHOTROPIC CYLINDERS

te response in cylindri-ected to stress loads 03 p0419 N68-12067

Prebuckling deform n buckling load of ed nd ring stiffener effects by stiffened orthotropic (NASA-TN-D-4283) 05 p0746 N68-14091

Stress stability analysis orthotropic circular cylind eccentrically stiffened with axisymmetric loads, supports, and defo [DER-FB-67-82] 08 p1246 N68-17489

Nonlinear elastic buckling strength of orthotropic cylinders 09 p1444 N68-19120

Orthotropic pressurized cylindrical shell subjected to radial line loads [TR-0158/3240-30/-4] 10 p1605 N68-19943

of orthotropic cylindrical nal pressure 21 p3781 N68-33630

ORTHOTROPIC PLATES

tion frequencies of orthotropic plate /wing vities filled with ideal incompressible moving 02 p0274 N68-11152

09 p1444 N68-19114 r series of edge stif-ic rectangular plate on distribution and

(NASA-CR-978) 09 p1445 N68-19311 ular orthotropic panels loads and dollection dependent lateral 43 p2163 N68-24134 utter of three-layer orthotropic plate in 15 p2382 N68-26935

mer theory of tity applied to analysis of hotropic laminated plates 18 p3173 N68-29627

intural frequencies of table thickness 20 p3602 N68-33035 INASA-CR-963141 ulus of elasticity in

21 p3706 N68-33610 equations for buckling IDLR-FR-68-331 22 p3973 N68-35502

34 p4351 N68-38234 FTD-HT-23-624-671

NT CYLINDRICAL SHELLS

INASA-CR-91671] 05 p0747 N68-14211

shells of revolution a [NASA-CR-61692] 10 p1608 N68-20286

BMWF-FB-W-67-25) 11 pl799 N66-21713

17 p2979 N68-28608 otropic cylindriis n3176 N68-29846

20 p3605 N68-33262 22 n3972 N68-35359

stic stability problem of

axisymmetric load (SC-CR-67-2709) 23 p4183 N68-36961 OSCILLATING CYLIN

puting natural frequen-drical shell vibrations 06 p0919 N68-15265 BMWF-FB-W-67-111 simation methods for axi of rotating liquid filled

(FTD-HT-46-527) 06 p0923 N68-15797 fer from horizontal cylinder of field of large streaming

Convective heat with buoyancy in Reynolds numbers [AF-1754/3] 14 p2369 N68-24413 ling of ring stiffened cylindrical

14 p2356 N68-24850

Potential theory prob sonically oscillating cyl 15 p2568 N68-26185

Liquid dynamics of helium 2 in pair of oscillating

15 p2453 N68-26233 applied to determine acillating shells 15 p2382 N68-26588 Law of plane sections a serodynamic forces acting on or (FTD-HT-66-763)

ve, and pitch, of oscillating Pressure distribution, linder in water as I NSRDC-23751 15 p2456 N68-26773

of this cylindrical theils Vibration tests and with and without long INASA-TN-D-4705 21 p3782 Nas-33738

dy lift forces generated deticionary, and oscillat-ments 21 p3682 NAS-34326 ands for determining reterovacular disease 23 p4001 NSS-37204 Wind tunnel stud by vortex shedding a ing cylinder at high Re INASA-TM-X-61214

NASA TR-9726

SCILLATING FLOW

Flow oscillations REPT.II 07 p0984 N68-16372 INASA-CR-615591 of poses heales

nization and chi

SU

22.0

in (I

E

for (H)

100 [N

G

Sest (EL

troll-

T

INA

(BC)

OSCIL

OSCIL

trans

mai w

PATRI

Ob

Osc trical (SMR

Res

OSCILL

analys (NRL

Lin

R

Rotary, and oscillatory relaxation effects in famous boundary layer on flat plate at supersonic speed 08 p1161 N68-17727 to canonical third equations 05 p0683 N68-14130 Flow field characteristics in sink vortex device ap-Effect of external hi ency oscillation source es in linear accelerators 05 p0715 N68-14592 on shortening of current pu (SLAC-TRANS-75) plicable as fluidic angular rate sensor [GPSI-1590-6707] 09 p1324 N68-18326 Closed solution for responses of unlimited, shallow spherical shells to oscillating axisymmetric pressures [REPT.-6] 05 p0751 N68-14755 Heat transfer mechanisis presence of superimp wave oscillations [TR-483-F] 09 p1447 N68-18427 m oscillations o quantizing mag Summary information gas, and oscillating flow [REPT.-483-G] om heat transfer in turbulent fields in approximation [NASA-TT-F-11417] 09 p1447 N68-18442 05 p0729 N68-14810 Wall interference effe of half-models in ventila [NPL-AERO-1243] and motion equations for fling of triaxial stabilized 12 pl809 N68-21903 06 p0845 N68-15546 Oscillating vincous flow of its Newtonian liquid in annulus be tric tubes of incompressible isothermal scous liquid from stafe of nal elastic force 06 p0827 N68-15604 12 p1862 N68-22356 Two phase gus-liquid flow dynamics - flow oscilla-tions in transparent parallel heeted channels and acoustic velocity in two phase flow [DSR-74629-1] 13 p2165 N68-23085 06 p0880 N68-15605 diabatic oscilla-Analytic model of thermal exchangers for supercritical fli [NASA-CR-61745] flow oscillations in heat 07 p1082 N68-17033 13 p2167 N68-23231 of Cephero model and hypothesis stellar energy 07 p1082 N68-17034 Thermal effects on reso oupling hydromagnetic oscillations in earth magne (ISAS-422, V. 33, NO. 4) air stream characteristics by vane id computer model for oscillating steady 14 p2321 N68-24435 wind plume [NYO-3673-2] 08 p1160 N68-17226 15 p2451 N68-25888 Pilot induced instability 08 p1135 N68-17468 Liquid oscillations in me tical cylindrical containers g rigid circular and ellip-15 p2451 N68-26043 08 p1208 N68-17510 Experimental and analytical oscillations in forced convection [NASA-CR-83303] tudy of pressure drop flow with boiling 16 p2795 N68-27637 Oscillation amplitude, oscillation frequencies, plate thickness and area as drag coefficients for flat, square plates oscillating normal to their planes in air [NASA-CR-6544]

08 p1169 N68-17911 c forces acting on cylin-Viscous drag of hydrodys ders in oscillating flow 21 p3679 N68-33770 ions of elastically suspended asymmetric Oscillati rigid body OSCILLATION DAMPERS 09 p1441 N68-18649 Mochanical damping de for suppression of com Balanced oscillator tests in S Fast Oxide Reactor to measure ([KFK-650] outhwest Experimental eactivity coefficients 09 p1375 N68-18857 [NASA-CR-90094] 01 p0152 N68-10627 Numerical analysis of for Duffing differential equal d oscillations governed Rotations and osc [NASA-CR-93728] by Duffing different [ARC-R&M-3516] 10 p1591 N68-19800 04 p0545 N68-13676 escribing effect of ran-illating systems 11 pl 745 N68-20907 stabilized orbiting satel-Damping systems for gravity (BMWF-FB-W-67-13) 06 p0911 N68-15680 Design and operation minning, slender or blu [NASA-CR-94580] per for spinning or non-pheric entry bodies 13 p2155 N68-23669 Nonlinear differential e lating system on for describing oscil-11 p1728 N68-20916 Digital correlation analys ments of water moderated re [RT/FI/67/26] Viscous dampers for supplations of large flexible stru Saturn 5 Isunch vehicle [NASA-TM-X-60432] s of oscillation mean ing wind-induced oscil-es, antenna arrays, and 11 p1742 N68-21325 15 p2572 N68-26832 on wave propagation in Quantum oscilla vetals of beta tin Passive damping tec solar orientated interpli [NASA-TN-D-4641] for attitude control of spacecraft 17 p2909 N68-28361 11 p1776 N68-21806 Production and availability of ti [CERN-68-12] titanium mill products 15 p2512 N68-25694 Development of m damper for scientific a [NASA-CR-94173] fluid viscous oscillation Observation of vertical oscillati ns of lower solar 18 p3180 N68-30485 OSCILLATIONS
NT ELECTRON OSCILLATIONS
NT HARMONIC OSCILLATION
NT HYDROPOIL OSCILLATION
NT MOLECULAR OSCILLATIONS
NT MONSTABILIZED OSCILLATIONS
NT NONSTABILIZED OSCILLATION
NT MARKA OSCILLATION 15 p2554 N68-26514 Oscillations of elastic plate in ideal fluid [FTD-HT-66-790] 15 p2456 N68-26782 Dispersion of horizontal oscill tions of wind NONSTABILIZED OSCILLATIONS
PRESSURE OSCILLATIONS
SELF OSCILLATIONS
SELF OSCILLATIONS
STABLE OSCILLATIONS
TRANSIENT OSCILLATIONS
TRANSIENT OSCILLATIONS
WING OSCILLATIONS
WING OSCILLATIONS 16 p2700 N68-27052 og rando Asymptotic me bility of nonlinear [NP-TR-1625] 16 p2717 N68-28075 Free extensional oscilla periencing large deflection of thin elastic beam ex-18 p3 174 N68-29680 spatial oscillations in Free-running xenon Source of atmospheric electric [ECOM-5139] WCAP-3680-201 02 p0204 N68-11166 18 p3120 N68-30774 nents on heat transfer Quantum the [TRG-057-2] 03 p0349 N68-11993 20 p3607 N68-32319 Soviet handboo systems with varied [FTD-MT-64-93] tions of linear laxation oscillations in ir breakdown point 20 p3516 N68-33126 Asymptotic calculation of re use trajectories of systems nes 04 p0587 N68-13154

by considering charac-ing of system

04 p0544 N68-13180

n periods as amplitude

04 p0548 M68-13411

scaling of hydrau nge of gas tuchi enginee disks, and vibrating pro (FTD-MT-24-131-67) 20 p3538 N68-33261 forced oscillations and NASA-CR-891891 onlinear systems 21 p3671 N68-33685 for measuring magne-nony doped gray tin 21 p3753 N68-33743 computer solutions in gas filled tut [NBS-TN-363] for thermal-acoustical 22 p3979 N68-35662 Kinetic theory of forced osci ations in plasmas 23 p4137 N68-36145 Probability analysis of models representing tall b [NPL-AERO-1254] ns of wind tunnel 23 p4179 N68-36299 Space charge osci in smooth cylindrical [WRE-TN-CPD-140] 23 p4032 N68-37106 h with regard to solar field fluctuations 23 p4038 N68-37133 Oscillation of magne wind pressure and geome [ESRO-SN-80/ESRIN/] Numerical analysis of error [IPNO/TH-117] 23 p4110 N68-37327 of oscillations of [FTD-MT-24-373-67] 24 p4252 N68-38052 (FID-MT-24-373-67) 24 p42
DSCILLATORS
NT AUTODYNES
NT BACKWARD WAVE TUBES
NT GYROSCOPIC PENDULUMS
NT HARMONIC OSCILLATORS
NT MICTORY
NT MAGNETRONS
NT MECHANICAL OSCILLATORS
NT MICROWAVE TUBES
NT MOLECULAR OSCILLATORS
NT MOLECULAR OSCILLATORS
NT PENDULUMS
NT PENDULUMS
NT PLANOTRONS PLANOTRONS
RELAXATION OSCILLATORS
SYNCHRONIZED OSCILLATORS
TRAVELING WAVE TUBES
UNDAMPED OSCILLATIONS liator operated by control sacity diode 01 p0036 N68-10062 Frequency-modulated oscil loop subjected to variable cap Transistorized Rossi oscillators and mixers [UCRL-13304] 01 p0039 N68-10718 Digital voltmeter read-out system for use with puare-wave reactivity oscillator for research reactor MOATA [AAEC/M-74] 03 p0344 N68-12593 Oscillator cavity and laser tube design, and tempera-ire and automatic frequency control system for stabilized carbon dioxide [NASA-CR-91352] 04 p0517 N68-12973 Fourier spectrum for b single degree-of-freedom tral computer program - pr [NASA-CR-9 [380]] excited, viscous damped illator produced by spec-rammers manual 04 p0482 N68-13162 d, viscous damped produced by specal for digital program to com-nd Fourier response spectra ous-damped single degree-of NASA-CR-91384] 04 p0587 N68-13232 magnetometer suitable for n locked oscillator technique space probes op as ground magne [REPT.-1966/3] 05 p0657 N68-14008 Reactor zero po (APDA-NTS-11) 05 p0692 N68-14200

Josephson effect and macr perconductors as basis for or scopic quantization of illator-detector 05 p0635 N68-14453 Analytical study and computer simulation of synchronous quenching of soft, self-sustained oscilla-[AFCRL-67-0453] 05 p0640 N68-14937 several stable states of Parametric oscillator equency for use in digit oter design 06 p0806 N68-15257

netrons 06 p0817 N68-15259 os with amplitu ording of informat pital computer dosi

bilizing oscillations in in ng actuating elements 20 p3454 N68-33127

20 p3582 N68-33196

Derivative control for stab control systems with duplication

Pc4 geomagnetic fle (NASA-CR-96386)

Investigation of steady short period type-Pc3 and 4 geomagnetic field oscillations

[RAE-LIB-TRANS-1249]

Tabulation of p

[CERN-87-29]

1

d

5

3

2

8

el

19

13

17

of

12

62

18

th

61

73

62

32

œ

00

of

53

37

of

37

59

de,

Traveling wave oscilloscope 03 p0329 N68-F2638

Portable quarts crystal oscillator using allicon First tilt test of semicire tilt and dropping platform canale in cate, and slow of otolithe in cate 17 p2824 N68-29150 IFVE-SEF-67-2-K) 11 p1700 N68-21452 [TN-186] 06 p0815 N68-15670 Transfer function of UTR-100 reactor measured pe with translatorized Y amntrol theory appli canals and otolith organicals and otolith organicals (SRRC-19/67) 23 p4032 N68-36761 07 p1026 N68-16222 17-p2825 N68-29152 OSCULATORY INTERPOLATION
U ORBIT CALCULATION
U ORBIT PERTURBATION illator and frequency ry control at broadcast Highly stable crystal onthesizer for carrier fre on vesitister mystag-nodel huned on osolith 07 p0963 N68-16608 OSEEN APPROXIMATION 17 p2825 N68-29154 Autocorrelation functions for calculating power pectrum output of nonlinear randomly frequency nodulated oscillator Free molecular flow around wire grids using Chap-man-Enskog theory and Oscen approximation [REPT-47-12] 20 p3466 Nes-33591 octure and chemi cal composition of fid [NASA-CR-96453] [RR-66-2] 07 p0964 N68-16798 20 p3409 N68-33555 OSMILIM measurements for tem-Temp Temperature performance perature compensated quartz of ECOM-28961 OUTER RADIATION BELT escence of some ruthenium and comi Level structure of iridium 193 derived through cami-[UJV-1909] 09 p1313 N68-18333 Spectral, apatial, and temporal variations of outer one electrons from 10 to 100 keV based on Injun 3 esign, and performance of ulated microwave scanner solid state frequency with crystal controlled NASA-CR-905101 02 p0263 N68-11797 radiation some during Proton intensities magnetic storm (NASA-CR-93765) (AD-664175) 09 p1301 N68-18349 SMIUM COMPOUNDS Design, construction, and performance evaluation of fferent triodes for 300 milliwatt X band triode cacilla-10 pl588 N68-20293 Osmium tetroxide as fixing and coloring agent in electros microscopy of thermoplastic polymeric materials [TRANS-1536]. 22 µ3896 N68-35525 High letitude cuter some boundary for greater than or equal to 40 keV electrons observed by Injun 3 satel-[QR-7] 10 p1506 N68-19960 22 p3896 N68-35525 imation of inelastic elec-alomb multipole transi-mal noise analysis 12 p1883 N68-22120 Distorted wave Born ap tron scattering involving tions, and maser oscillator OSMOMETERS
Chiorophyll A as dim [NASA-CR-94535] 13 p2145 N68-23254 OUTGASSING mer in carbon tetrachloride usin vapor pressure aumometr cients, outgassing studies, and con-ite system thermal model computer as with \$2.6 inch tank test data 06 p0926 N68-15757 tic low pass filter 14 p2210 N6E-24546 etry system 13 p2027 N68-23615 for subcarrier oscilla [HDL-TM-67-24] NASA-CR-614561 r from concrete surfa-Digital voltage co ator for phase lock Increased comotic re-adapted to hypoxia (NASA-TT-F-11410) ce of erythrocytes in rats ynthesizer 14 p2229 N68-24389 [NASA-TM-X-1536] [NASA-TN-D-4521] 09 p1323 N68-19207 18 p3011 N64-30555 Computer calculation of spacecraft compartment ices and outsaming materials Control rod oscillat (GEAP-5534, PT. 1) or tests on boiling water reactor 14 p2295 N68-25349 ted to measure m brane transport prop [NASA-CR-97224] 23 p4016 N68-37226 Nonlinear theory of so istor and tunnel diode [NASA-TM-X-63133] 10 p1514 N68-19704 OTIC PRESSURE OSMOSIS tered in design of star mical observatory 15 p2447 N68-26910 16 p2634 N68-27627 Outgoing problems e Automatic centrol sy tests on southwest experi (EURFNR-498) trol system for belanced oscillator experimental fast oxide reactor 20 p3454 N68-32980 (SC-DC-67-2060) Radiation resistance, outgassing characteristics, and weight of five electrical insulation sasterials for No be mindered Radio frequency gas chroms OSO-El prelaunch analysis and attitude control graphic detectors 20 p3480 N68-33380 NASA-TN-D-4553] 16 p2692 N68-28264 NASA-TM-X-63005] 01 p0139 N68-10510 Development and operating characteristics of tuna-te visible continuous wave optical parametric oscilla-Measurement of co gassing by ultrahigh va [UCRL-17845] cryopumping and out-he counting mass filter 22 µ3855 N68-35915 tic design and balancing Major constraints on magne of OSO experiment instrument (TN-67-10) INASA-CR-967241 21 p3700 N68-34255 10 p1557 N68-19549 High voltage effects in satellite-borne spectrometers 15 p2443 N66-26881 NT VENTS Frequency multiplication and division in integrate circuits - design concept for voltage controlled oscilla our using voltage variable resistances in positive feed back configuration Lookage and second glos, induced drag as Bibliographic review on OGO, OSO, OAO, and Transit aste lites [LRBA-45-64-EN] 17 p2975 N68-28462 w effect on lift, butlet an-coefficient in rectilinear cancade of compress [ARC-RAM-3483] 23 p4034 N68-36118 03 p0297 N68-12457 16-channel FM telemetry system with voltage con-trolled oscillator [NASA-CR-92340] 24 p4222 N68-37559 Effect of inlet and collet on fluid flow in pipes and and orbital performance of 24 p4222 N68-37559 20 p3598 N68-33543 [SP-929] 20 p3459 N68-32459 Theoretical treatment of stability and frequency micromodulation of wide band oscillators [NASA-TT-F-11437] 24 p4238 N68-37593 tical interp of OSO-3 data to limit OUTPUT NT LASER OUTPUTS metagalactic comic-ray [NASA-TM-X-63329] 21 p3763 N68-34691 agnet wave oscillator 24 p4235 N68-37947 3.2 mm permanent ma (ECOM-02225-F) Input/output system to OSO recording head is (NASA-CR-968501 22 p3875 N68-35144 OSCILLOGRAMS U OSCILLOGRAPHS [AMRL-TR-67-74] 04 p0484 N68-13643 n of OSO-3 data to limit OSCILLOGRAPHS metagalactic counic-ray inten [NASA-TM-X-63329] BEFT-1992-200 TR-11 21 p3763 N68-34691 Instrument errors of astronomical photoelectric time transit device determined using oscillograph and artifi-cial star light source apparatus Cosmic and solar X ray data obtained by Orbiting Solar Observatory (OSO-3) 22 p3960 N68-33493 (0. p1501 N68-20406 05 p0665 N68-14926 Hardware implementation and control of transfers etween input/output for MINIJOSS, small-scale multi-Low frequ lexer for use with ther-OTOLITH ORGANS (RAE-TR-67235) 12 p1844 N68-21906 mal writing paper [DRL-TR-68-2] participation in otolith Gemini 5 and 7 as motion experiments 08 pl 154 N68-17833 or real-time computer : Linear differential equations for selecting optimizations of loop oscillograph vibrator parameters of loop oscillograph vibrator 09 p1341 N68-18646 Input output control application to SDS 930 [CEA-R-3471] 01 p0008 N68-10189 visual horizontal per-IR p3039 N68-30 mae of utolith or took system of KDF 9 Guide to NPL # Observation of vertical oscillations of lower solar INASA-CR-036571 09 p1284 N68-19295 NPL-CCU-21 21 p3664 PMB-34130 13 p2554 N68-26514 Animal studies of s and semicircular can ffects on otolith organs reflex time of rotation lograph method of testing intrinsically safe elecnystagmus in man (NASA-TT-F-11489) 10 p1462 N68-19823 (SMRE-TRANS-5523) 20 p3448 N68-32359 10 p1572 PMB-19521 Resonant cavity high frequency oscillometer 20 p3483 N68-33422 cts on human otolic Prolonged weightless parsitus and ocular co U CLOUD COVER 10 p1471 N68-20354 OSCILLOSCOPES Microscopic anatomy and function of otolith organs, and various ways to investigate otolith functions in in-U ERRORS U ESTIMATING Electronic circuit devices for controlling megajoule lets pinches and various functions of oscilloscopes PP-1/71) 01 p0039 N66-10882 (IPP-1/71) 17 p2824 N68-29147 stor of stellth function Impedance at high power measured by null balance technique and compared with oscilloscope pattern U RADIATION DOSAGE 17 p2824 N68-29148 Drug effects on stolith activity determined by mouplcainely driven shock tube [ORNL-TM-1966]

03 e0337 N68-12671

SU

0

. .

1

10

1

11

le lo

C

(D

OXII tio [C

odd (FT)

O sista

vior of shipboard antenna masts to 14 p2366 N68-25542 on of solid propellant rocket ine igniter design and parameters to avoid overpre [NASA-CR-72447] 22 p3955 N68-35729 OVERTONES U HARMONICS OVERVOLTAGE. Overgotential transients on rotating disk, current and potential distributions in cytinders, foamed elec-trolyte fuel cell, atomic scale electrode processes, and charge transfer complexes 11 p1628 N68-21038 Electrolyte composition and overvoltage properties of high temperature magnesium-chlorine cell 17 p2813 N68-28737 Influence of irradiation, voltage and field strength adient, and pressure on pulse breakdown of overgradient, and pressure on pulse breakdown of over-volted two electrode spark gap [IPP-4/55, PT. 2] 20 p3553 N68-32356 Transient voltages along power lines - sources, effects on measuring circuits and equipment, and methods for minimizing 22 p3915 N68-35126 OXALATES Radiolysis of aqueous sodium oxalate solutions for tac in high dose integrating chemical dosimeters [EUR-3914.E, PT. 2] 17 p2841 N68-28946 Hydrazine cation radical formation in gamma in-idiated single crystals of hydrazinium hydrogen oxa-LF-211 19 p3234 N68-32075 OXALIC ACID Synthesis of polyoxadiazoles alic acid and dichlorides of aron [JPR\$-45461] iles from derivatives of ox natic dicarboxylic acids 14 p2214 N68-24787 Reaction kinetics of rare earth ion and anion rooms from to study ion complexes stability 17 p2835 N68-28344 OXAZOLE Structure-property study of polyurethane, epoxy, polyisocyamurate, and polyoxazolidone adhesives [NASA-CR-90034] 01 p0080 N68-10128 oles from derivatives of oxnatic dicarboxylic acids 14 p2214 N68-24787 Experimental study of reaction mechanisms of 2-reconcethylene pseudooxazolones-/5/ 17 p2847 N68-29524 rocedures 13 p1999 N68-23276 (SAM-TR-68-4) Cution and anion re-denine dinucleotide hyd 15 p2398 N68-26839 OXIDATION

NT ELECTROCHEMICAL OXIDATION

NT PHOTOOXIDATION Stainless steel oxide fü studied using n diffraction 01 p0074 N68-10257 Magnitude of electrical po-escensised for tantalum, otential-temperature curve niobium, and magnesium (NASA-TN-D-4240) 01 p0075 N68-10498 Chemical kinetics of uranium, neptunium and americium oxidation-reduction reactions in perchlorate 01 p0022 N68-10554 [ORNL-TR-1644] Behavior of plute tal under atmospheric ox-[AWRE-0-4/62] 01 p0078 N68-10908 Neutron-flux-induced oxidation and hydriding of Zirczłoy-2 specimens in lithiated und ammonisted systems at 250 deg C (BNWL-463) 02 p0220 N68-11017 m sulfides determined Heats of oxida using differential thermal analy [NUS-R-506] 03 p0311 N68-12143

dation in shock waves

03 p0425 N68-12253

um during exidation 03 p0353 N68-12674

se and reduction of al-

04 gO446 N48-12910

rimethylosesm, ie with iron pentacari in imputylene - low perature reaction MRC-DA-1441 04 p0468 N68-13518 passous nitric oxide eat, beds - oxidation of me rotamium tetraborate NASA CR hane to formaldehyde using lyst with solid heated reaction thane with ozonized air over 04 p0473 N68-13778 Synthesis of formaldehyde by oxidation of methane [NASA-CR-73070-4] 04 p0474 N68-13881 Oxidation of methan coated with potassium to [NASA-CR-73070-3] maldehyde in reactors 04 p0474 N68-13887 Moisture effect on inhib action of phosphorus exychloride on air exidation of graphite [AERE-R-5552] 05 p0622 N68-14315 Constant pressure apparatus for measuring oxygen asception of petroleum hydrocarbons at high tem-TG-230-T533] 06 p0793 N68-15844 Chemical stability of boron phosphide in various conditions to acids, alkalies, oxidizing mistures, nitrogen, oxygen, and chlorine 06 p0795 N68-15969 reduction reactions in adution treated in terms of electron transfer processes Amperometric titration of palladium 2 by oxidation with hypochlorite [UCRL-17824] 07 p0954 N68-16239 Plutonium /4/ exidized into plutonium /6/ by means of manganese dioxide in nitric acid medium [KFK-621] 07 p0956 N68-16445 Theoretical and experimental studies of graphite and napocified reactor material oxidation behavior to etermine atmospheric reently effects IID-23786) 68 p1190 N68-17424 (TID-23786) Ferrocene polyurethane foams [SC-DC-67-2060] 08 p1190 N68-17642 Oxidation of unsaturated compounds with organic INIC-TRANS-2478] 09 p1293 N68-18459 Oxidation reduction reactions of ammine complexes of ruthenium 09 p1295 N68-18891 Oxidation kinetics [BM-TRANS-3323] es of microdispersed carbon 31 10 p1480 N68-19564 Catalytic oxidation iron oxide catalyst nol using molybdenum 10 p1482 N68-19781 Chemical shock tube study of peroxide formation resulting from gas phase reaction of n-pentane with oxygen in low temperature region 10 p1484 N68-19928 Oxidation of conjugated and nonconjugated dienes with benzoyl peroxide [NIC-TRANS-2520] 10 p1485 N68-19945 Thermal oxidation mechanism of methane studied at very high pressures and varying temperatures and reaction times 10 p1492 N68-20327 Reaction kinetics for hydrolysis and oxidation of hydroxylamine sulfate 11 p1645 N68-20660 Kinetics of oxide film growth [SC-DC-67-1632] on metal surface 11 p1651 N68-21090 Global attack constants and composition of double syers of metals containing two oxides when corroded by oxygen (SC-T-67-0958) Gaseous oxidation of vitreous carbon and various raphites at high temperatures 11 p1719 N68-21305 Lead tetrancetate as oxidizing agent for synthetic and degradation processes in organic chemistry and building models of reaction mechanisms [JPRS-45021] 12 p1831 N68-21861 Applications of lead tetrancetate as oxidizing agent for synthetic and degradation processes in organic 12 p1831 N68-21862 Oxidation of 2-butenes 12 p1831 N68-21883

Oxidation method for preparation of alkaline earth

Recrystallization and oxidation of aluminum aluminum oxide alloy by hot stage transmission electron microscopy

NASA-TT-F-11641]

12 p1832 N68-22021

12 p1886 N68-22295

Storage stability of uranium dioxide powder, and equations describing oxidation behavior in air at room 12 p1905 N68-22456 [AAEC/TM-396] m oxidation, and hygroscop-Mechanisms of plutonium oxida properties of plutonium dioxide 13 p2010 N68-23198 (RFF-1030)
Correlation between electrical resistance and weight ratio for kinetic analysis of copper oxidation 13 p2017 N68-23824 Impurity concentration effects on isobaric oxidation potentials of antimony and tin during lead alkycation 13 p2017 N68-23830 Decrease in oxidation rate of hydrogen on platinum ectrode under steady state conditions electrode under steady state conditions [NRL-6659] 13 p2019 N68-23950 Kinetic parameters of copper oxidation rate during brief heating to high temperatures 13 p2021 N68-24074 Monatomic molecular chains in chromium/2/ oxidation at mercury electrodes 14 p2216 N68-25032 Oxidation of plutonium /4/ to plutonium /6/ using anganese dioxide in nitric acid medium EURFNR-417] 14 p2218 N68-25253 manganese dioxide [EURFNR-417] Tungsten and molybdenum all plied and vacuum sintered on tant oys for protection from oxidation [NASA-CR-87765] m alloy silicide slurry ap-n tantalum and niobium al-15 p2479 N68-25722 Oxidation and reduction of tantalum metal and tan-talum pentoxide and determination of electrical re-sistivity and Hall effect 15 p2415 N68-26395 Reaction of sintered silver electrode to oxidation and NASA-CR-95267) 16 p2612 N68-27973 Structure and composition of oxide films after high temperature oxidation of alloy containing iron, chromium, aluminum, and yttrium [RD/B/N-1006] 16 p2614 N68-28107 Release and transport of fission products, adsorp-ion, oxidation, and corrosion in literature review on reactor safety [HMI-B-68] 16 p2707 N68-28110 Stereochemistry and reaction kinetics in oxidation of butylbenaune in emulsion by molecular oxygen lecular oxygen 16 p2602 N68-28332 Chemisorptions to find active surface area and study surface reactions during oxidation of granular gra-phitized carbon black 17 p2838 N68-28518 Catalysts for anodic oxidation of hydrazine-air fuel cell power syste 17 p2813 N68-28733 Eudiometric study of oxidation of organic com-pounds by molecular oxygen 18 p3017 N68-29576 Oxidation properties of selen im compounds 18 p3018 N68-29678 Reaction kinetics and rates, and isomerization effects in hydrogen peroxide oxidations of thiocyanate complexes 18 p3020 N68-29931 Theoretical and numerical s kinetics based on ionic diffusio [NASA-CR-95837] odel study of oxidation m discrete lattices 18 p3152 N68-30028 Comparing and analyzing static and dynamic oxida-tion of lubricating greases [RIA-68-897] 18 p3100 N68-30565 Oxidation and dehydrogenation of secondary amidoximes as method of preparing nitroso compounds 19 p3226 N68-31437 [NASA-CR-95936] Oxidation products of cenium studied by differential thermal analysis [NASA-CR-95987] 19 p3205 N68-31492 beryllium and aluminum 19 p3386 N68-31933 (UTC-2183-FR) Oxidation characteristics of synthetic graphite [NASA-TT-F-11874] 19 p3234 N68-32017 ing of sranium-molyb-tor materials to protect from oxidation [Y-1617] 19 p3313 N68-32040 Oxidation of copper in oxygen atmosphere of 76 mm Hg from 200 to 900 deg C [FTD-HT-67-89] 20 p3494 N68-32298 X ray and electron diffrac processes in niobium [RTS-4263] action analyses of exidation 20 p3428 N68-32926

[CPD-114]

(WAPD-TRANS-72)

(NASA-CR-91448)

Reaction kinetics in a

NDEX

-22456

товсор

-23198

weight

-23824

ation 3-23830

23950

-24074

/ exida-

25032

/ using

-25253

irry ap-

-25722 and tan-

-26395

tion and

-27973

ter high

-28107

3-28110

ation of

-28332

ad study

-28518

air fuel -28733

c com-

-29576

-29678

tion ef-

-29931

kidation

ces 8-30028

e oxida-

-30565

8-31437

ferential

8-31492

2-31933

graphite

8-32017

-malyb-protect

-32040

76 mm

8-32298

sidation

8-32926

SUBJECT INDEX ium and diffusion of oxygen in tion of zirco oxide and in metal [WAPD-TRANS-91] 20 p3501 N68-32998 Scale formation in to ngines from inadequate temperature and low oxygen co [FTD-HT-23-825-67] 20 p3580 N68-33472 Effect of chain and cre and oxidative stability of lo [ONR-TR-RLT-106] ink structure on thermal insuturated elastomers 21 p3707 N68-33978 anism of nickel- titani-Kinetics and oxidation (FTD-HT-67-265) 21 p3704 N68-34392 Oxidation experiments with oxygen-argon gas mix-ture on organic reactor coolants [AI-AEC-MEMO-12688] 21 p3652 N68-34479 Oxidation kinetics and oxide film breakaway of Zr and Zr alloys at high temperatures [JAERI-1161] 22 p3891 N68-35417 Structure, formation, and adhesive strength of scale on steels at temperatures up to 1200 deg C and in dif-ferent combustion atmospheres 23 p4074 N68-36237 Structure and growth analysis of thin polycrystalline oxide films on metal surfaces [NASA-TT-F-11905] 23 p4075 N68-36323 Oxidation of carbon sphe 24 p4210 N68-37455 Pyrolytic carbon coated fuel particle oxidation using helium-low water vapor mixtures.

[ORNL-TM-2199] 24 p4213 N68-37633 Oxidation of bonded and coated particle fuel com-ORNL-42691 24 p4297 N68-37972 Oxidation and cont n of titanium and titanium alloys [DMIC-MEMO-238] 24 p4268 N68-38056 OXIDATION RESISTANCE Sintered iron brake cylinder platons to reduce oxida-tion and gum formation [CCL-238] 06 p0848 N68-15000 Feasibility of thermocouple capable of temperature seasurements up to 2000 deg C in oxidizing media and [FTD-HT-23-746-67] 06 p0853 N68-15090 Resistance to oxidation and nitrogen absorption dur-ing cyclic oxidation of metallic cladding systems ap-plied to chromium based alloys by gas pressure bonding [NASA-CR-54619] 08 p1184 N68-17338 Oxidation resistant alloys tested for suitability as transpiration cooled gas turbine blades [NASA-CR-930] 08 p1185 N68-17391 Chemical reaction behavior of refractory metals and alloys with environment, and oxidation resistant and protective coating systems 08 p1188 N68-18209 Water-chemistry effects on oxidation and reduction of zirconium alloys under reactor radiation [AECL-2797] 09 p1294 N68-18762 Protective coating parameters for improving exida-tion resistance and reliability of silicide coating systems for tantalum alloys [NASA-CR-72358] 10 p1538 N68-19623 Effects of silicide oniobium and tantalum [NASA-CR-94582] 13 p2082 N68-23469 High temperature tests a isotopic heat source materia [DP-1143-1] oxidation resistance of fastelloy and Inconel 15 p2499 N68-25703 Test methods for combustion characteristics, gas solubility, vapor pressure, and volatility of aircraft fuels and for property analyses on high temperature lubri-16 p2747 N68-27850 [FTD-MT-66-99] Temperature effects on the oxidizing stability of 16 p2670 N68-27862 Corrosion resistance from antioxidant and lubricant additives studied in oils [FTD-HT-23-902-67] 18 p3097 N68-29619 Oxidation resistance and ductility of cobalt heat re-istant alloys optimized by restriction of silicon and NASA-TN-D-4715] 18 p3088 N68-29954 Increased oxidation resistance by mixing fluoride table with refractory metal powder [RM-417J]

Oxidation resistant, ductile, and high strength cobalt-base alloy

Oxidation characteristics of cobalt-chromium base

[NASA-CR-72420]

19 p3293 N68-31596

20 p3501 N68-32975

and boron nitride compo [NASA-TM-X-61233] 21 p3708 N68-34284 n for metal alloy cool 22 p3889 N66-35098 ALUMINUM OXIDES
ANATASE
BARIUM OXIDES
BERYLLIUM OXIDES
BERYLLIUM OXIDES
BISMUTH OXIDES
BORON OXIDES
CALCIUM OXIDES
CARBON MONOXIDE
CARBON MONOXIDE
CARBON MONOXIDE
CHROMIUM OXIDES
CHORINUM OXIDES
CHROMIUM OXIDES
COPER OXIDES
COPER OXIDES
DIOXIDES
BIOXIDES
BIOXIDES ENSTATITE
GERMANIUM OXIDES
HAFNIUM OXIDES
HEAVY WATER
HYDROGEN PEROXIDE
ILMENITE HYDROGEN PEROXIDES ILMENTE ENORGANIC PEROXIDES IRON OXIDES KAOLINITE LANTHANUM OXIDES LEAD OXIDES LITHIUM OXIDES MAGNESIUM OXIDES MAGNESIUM OXIDES MAGNESIUM OXIDES MAGNETITE MANGANESE OXIDES METAL OXIDES MOLYBDENUM OXIDES MOL YBDENUM OXIDES MUSCOVITES MICKEL OXIDES NIOBIUM OXIDES NITRIC OXIDE NITROGEN DOXIDE NITROGEN OXIDES NITROGEN TETROXIDE NITROUS OXIDES PEROXIDES PEROXIDES PEROXIDES
PHOSPHORUS OXIDES
PLUTONIUM OXIDES
POTASSIUM OXIDES
POTASSIUM PEROXIDES 255555555555 PYROXE QUARTZ RUTILE RUTILE
SCHEELITE
SCHEELITE
SILICON DIOXIDE
SILICON OXIDES
SILICON OXIDES
SODIUM PEROXIDES
SULFUR OXIDES
TANTALUM OXIDES
THORIUM OXIDES
THORIUM OXIDES
THORIUM OXIDES
THORIUM OXIDES THORIUM OXIDES
TIN OXIDES
TITANIUM OXIDES
TUNGSTEN OXIDES
URANIUM OXIDES
VANADIUM OXIDES
VITRIUM OXIDES
ZINC OXIDES ZINC OXIDES ZIRCONIUM OXIDES

Electron microscopy technique for determining dispersoid distribution in powder blends [NASA-TM-X-1468] 01 p0073 N68-10051 ocessing irradiated mixed oxide fuels (EURAEC-1868) 01 p0020 N68-10404 Phase diagrams and lattice parameters of cubic and seudo cubic phases of Pu-O compared with those of e-O, Pr-O and Tb-O Ce-O, Pr-O and (EUR-3563.E) 01 p0025 N68-10783 Rare earth dielect (NASA-CR-90301) tric oxides in thin film capacitors 02 p0257 N68-11024 Electrical con mic and single crystals of cerium oxide and er (AFOSR-67-2649)

04 p0558 N68-13431 of thulium oxide acti-Solid state chemistry of r (COO-1109-25) Quasi-binary ph nide oxide system [KFK-521]

08 pl 190 N68-17633 rization of anodi ectrodes and ele at instrument

09 p1295 N68-18885 dies on point defects in tide single crystals 10 p1579 N68-20130

d oxide and carbide particle 11 p1740 N68-21129 reactor cladding materia (UCRL-TRANS-10144) 17 p1714 N68-21167 11 p1730 N68-21662 tworks in axides, and ac sulfide, iron sulfide. and beryflium oxis 12 p1836 N68-22436 onic structure and 13 p2136 N68-23711 reviewed to aid on-orphous oxides 13 p2089 N68-23806 lonic transport in silica derstanding of ion motion in [REPT.-67-C-219] urni, and crystal optics rination 13 p2018 N68-23833 Thermographic, X ray stru based on planer techniques for use in sat [BMWF-FB-W-68-04] 14 p2229 N68-24764 selected organ [NUS-R-5 (R) 14 p2216 N68-24962 Alloy strengthenisions, and splot cooli [NASA-CK-95871] oxide particle disper-for alloy development 18 p3091 N68-30233 Atomic diffusion m (AAEC/E-1881 in cerunic axides 19 µ3297 N68-31099 oxides to impr Hot extrusion of NASA-CR-959711 19 p3285 N68-31681 Electron-phonon coupling and and diffusion of phosphe in impurity absorption rus in oxide layer on allicon surface (FTD-HT-67-159) 20 p3576 N68-33580 Diffusion of phosp dde layer on silicon sur-20 p3576 N68-33582 Life capabilities of nickel ca cathodes and costed particle ca [NASA-CR-97194] hode alloys with unide hodes in sest diade 23 p4031 N68-36583 rum analysis of alkali Ultraviolet and visib metal and alkaline earth [DRI-3976-6803-F] 24 p4221 N68-38494 OXIDIZERS

NT FLOX

NT LIQUID OXIDIZERS

NT LIQUID OXYGEN

NT ROCKET OXIDIZERS isotope-heated catalys port systems for manned [NASA-CR-66497] 02 p0172 N68-11871 bornte and oxygen [IITRI-C227-20] 04 #0474 N68-13836 06 p0925 N68-15485 (FTD-HT-23-790-67) Additives, oxidizer to tion for solid rocket me [NASA-CR-72262] 06 m0896 N68-16051 with amountain 11 p1801 NSS-20664 Inorganic fluoride propel seed permination and plant gr [AMRL-TR-66-187, V. 1]

conductivity testing, failure of oxidizer to INASA-CR-618061 Regenerative cod-bin flich when used [NASA-CR-72341] ies of light by ated exidence 17 p2940 1468-29438 ce of photic propolical

(AFOSR-69-1163) 18 p3189 N68-30643 Chemical reaction le oxidizen 19-p3232 1068-31935 (UTB)-C6(35-1) 20 p3420 N48-32593

13 p2140 N68-23685

13 p2021 N68-20076

SI

U

10

(F

0

free [G/

0

C

D

M

Ci

Tit

The

(ORN

Equ

Min

Oxy

Oxy

[BM-I

EUR-

LA-D

NAS/

UTI

OXYGE

mody

OXYALKYLATION U ALKYLATION OXYFLUORIDES

Microwave and molecular spectroscopy used to cal-slate structure of senon oxysterafluorida 22 p3821 N68-35018

NY HIGH PRESSURE OXYGEN
NY LIQUID OXYGEN
NY OZONATES
NY OZONE

tic resonance of oxygen Electron molecules excite (UCRL-17453) 01 p0103 N68-10287

Temporal solutions for photochemical equations secribing distribution of ozone and oxygen during audescribing distribution roral events [NASA-TN-D-3993] 01 p0057 N68-10369

Corrosion products of oxygen duped tantalum ex-posed to potassium at 1800 dag F [NASA-TN-D-4213] 02 p0222 N68-11511

Hydrogen-oxygen chemical reaction kinetics in rocket engine combus [NASA-TN-D-4250]

02 p0285 N68-11642 Photoionization spectrum of discharged oxygen with argon light source and vacuum ultraviolet monochro-mator in discharge flow experiment [TR-1001/2260-10/-2]

03 p0387 N68-12181

Particular final state decay modes following photoparticle reactions in oxygen [UCRL-50287] 03 p0387 N68-12196

Fire prevention and safety standards related to ox-gen and other special atmospheres - report of missile ygen and other silo fire (AD-660933)

03 p0333 N68-12280 Minin Minimum required energies for direct initiation of seous detonation waves in acetylene-oxygen mix-

tures (BM-R1-7061) 03 p0426 N68-12434

Atomic oxygen and carbon monoxide cooling in planetary thermosphere NASA-TM-X-60766) 04 p0574 N68-13262

d optical properties of ox-fluoride single crystals 04 p0557 N68-13306 Electron apin resonance : gen molecular ion in sodis

Amalgamation method for quantitative oxygen anal-vis in sodium samples [NAA-SR-12250] 05 p0618 N68-14066

Intranuclear cascade calculations of 0.75, 1, and 2 GeV protons and 1 GeV neutrons on oxygen, alu-minum, and lead tabulated [NASA-CR-91811] 05 p0713 N68-14473

ryl/ peroxide synthesized by ul-n of oxalyl fluoride mixed with ox-TR-64 06 p0788 N68-15479

Fortran computer program for solving reaction rate equations pertaining to electron irradiation of 4 to 1 mixtures of nitrogen and oxygen 06 p0792 N68-15749 06 p0792 N68-15749

Constancy of dynamic viscosities of ternary gas mix-tures oxygen nitrogen carbon dioxide, and hydrogen nstrogen oxygen [B3]

07 p0983 N68-16197 dies of work function and energy distribution of cesium-oxygen-tungsten system 07 p1067 N68-16762

Determination of oxygen and carbon in germanium by helium 3 activation [LA-DC-8994] 07 p0959 N68-16773

07 p0959 N68-16773 Electrochemical measurement of oxygen diffusion in liquid and solid metals at high temperatures [NRC-TT-1295] 08 pl 139 N68-17386

Portable apactrometer I hydrogen as free gas or as d gas shield of gas tungsten ar [NASA-CR-61567] eter for monitoring oxygen and or as dissociation products in inert

ding process 08 p1177 N68-17497 Oxygen electrode kinetic factors in fuel cell energy 08 pl124 N68-17824

Activity of platinum catalysts in solution - kinetics of atinum-oxygen reaction with hydrogen and of atinum-hydrogen deposition using double pulse [NRL-6627, PT. 2] 08 pl141 N68-17857

tures of gaseous hydrogen, and oxygen [ARL-67-0202] 08 p1258 N68-17946

Oxygen electrodes for fuel cells, and mechanism in amport of oxygen near line separating gas electrolyte

08 p1143 N68-18025

Quantitative measurement of atomic photoionizatio cross sections of atomic hydrogen, oxygen, an [NASA-CR-998] 08 p1216 N68-18118

Ionization equilibria for iron, neon, oxygen, and sil-INASA-CR-933581 08 p1221 N68-18121

Relative interaction radii for quenching of triplet tate molecules of oxygen, xenon, and nitrogen oxides [TR-0158/3250-20/-3]

09 p1386 N68-18280 Oxygen toxicity influ race on rate of red blood cell aging in rabbits [AMRL-TR-66-168] 09 p1278 N68-18304

Polarization in port [NASA-CR-93486] esectrodes 09 p1275 N68-18828 Shock tube study of hyrogen temperature, low pressure regin -oxygen reaction in high

es 09 p1298 N68-19271 Ignition kinetics of carbon monoxide-oxygen reac-

[NASA-TM-X-52196] 09 p1451 N68-19445 Charge and discharge characteristics of cadmoxygen cells for spacecraft applications [NASA-CR-93835] 10 p1460 N68-19 10 p1460 N68-19913

Chemical shock tube study of peroxide formation resulting from gas phase reaction of n-pentane with oxygen in low temperature region 10 p1484 N68-19928

Oxygen diffusion coefficien and human oxyhemosi ient in bovine serum albu-

10 p1468 N68-20190 Adrenocortical steroids, body organ weights, and he matology of rats exposed to pure oxygen environments at low pressures for application to low pressure, normoxic environmen [SAM-TR-67-78]

10 p1468 N68-20208 Absorption coefficient analysis for oscillator strength Schumann-Runge band system in molecular oxygen ADP-44} 10 p1493 N68-20337

Computed activation energies for reactions of ox-ygen, nitrogen, nitrogen oxides, carbon monoxide, and carbon dioxide [TR-0158/9210-02/-2]

11 p1644 N68-20634 Survey of research papers dealing with fire risks in tygen-enriched environments

[AD-665796] 11 p1802 N68-20870 Flame protection afforded mice by noncombustible

garments in pure oxygen atmosp [SAM-TR-67-91] heres 11 p1642 N68-21752 Altitude distributions of and airglow emissions by ertain oxygen and nitrogen metastable constituents NASA-CR-94130] 11 p1694 N68-21756 [NASA-CR-94130] etics of oxygen-peroxide couple on carbon and

12 p1834 N68-22181 Partial pressure measurement of ruthenium tetroxide ver ruthenium dioxide as function of oxygen partial over ruth

IN-10131 12 p1836 N68-22474 Electromagnetic trai ygen 15 nuclei [JINR-P4-3684] ns in nitrogen 15 and ox-

12 p1937 N68-22794 Positive and negati and oxygen 16 nuclei [JINR-P4-3666] ive pion absorption by carbon 12 12 p1939 N68-22870

Electromagnetic energy absorption in atmosphere by oxygen 13 p2059 N68-23331

m of hydrogen oxygen reaction Explosive mech-near second ignitio [BRL-R-1386] 13 p2170 N68-23727 ly of candle-like burning

of polymers in oxygen as [REPT.-67-C-006] re gas atmospheres 13 p2172 N68-24012 lite face influence 14 p2209 N68-24447

ent in germanium and 14 p2210 N68-24488

Detonation of aluminum powder oxygen mixtures 14 p2370 N68-24692 Flight type calcium stabilized solid electrolyte ox-

NASA-CR-666181 14 p2256 N68-24737 Reaction kinetics for electrode-oxygen reaction 14 p2216 N68-25017

Elastic scattering cross sections of high energy rutrons from nitrogen, oxygen, and argon 14 p2311 N68-25040

Total seutron cross sections of oxygen, nitrogen, and beryllium 9 and energy resolution of resonances [CONF-680307-15] 14 p2311 N68-25047

Design of electrochemical meter for continuous seasurement of oxygen content in sodium in sodium 14 p2257 N68-25160 (UNC-5131) Effects of two-particle spin-orbit nucleon-nucleon interactions on oxygen 16 and nitrogen 16 nuclei 14 p2315 N68-25228

Photolysis of mixtures of oxygen with nitrous oxide, nitrogen, and carbon dioxide, and relative reaction rates of 1 D oxygen atoms with admixed gases dmixed gases 15 p2409 N68-26084

Mass spectroscopy studies on thermodynamic pro-perties of uranium-oxygen systems [ANL-TRANS-561] 15 p2414 N68-26305

Principal reactions in nitrogen-oxygen mixtures etermined during and after pulsed ionization BRL-R-1387] 15 p2416 N68-26443 [BRL-R-1387] Oxygen addition effects on methane-rich perchloric acid flame propagation

acid flame propagation [RPE-TR-67/5] 15 p2577 N68-26520

Chemistry of organic oxygen heterocycles 16 p2607 N68-27101 Electron transitions and angular distribution data for O/He 3,n/Ne double stripping reaction

16 p2721 N68-27344 Fluorine and oxygen effects on work function of

NASA-CR-85160) 16 p2743 N68-27389 Winter and summer hemisp density distribution in exosphe [NASA-TM-X-59859] eric oxygen and helium

16 p2654 N68-27570 Elastic scattering of tritons by oxygen at various an-

JINR-P15-3756] 16 p2730 N68-28122 Astronaut life support requirements of oxygen, food, water, waste disposal, temperature control, and atmosphere control for survival in manned spacecraft en-[NASA FACTS, V. 3, NO. 5]

17 p2830 N68-28968 Angular distribution of polarized proton beams x-tered from oxygen cyclotron target 18 p3127 N68-29734

Carbon dioxide and water va por effects on induction period kinetics of hydrogen-oxygen reaction NASA-TN-D-4685] 18 p3186 N68-30041

Absorptivity of O2 near Lyman-alpha line [NASA-CR-95881] 18 p3025 N68-30257 Carbon and oxygen effects on ultrahigh strength

titanium alloys [AMMRC-TR-68-11] 18 p3095 N68-30606

Two body correlation effect on elastic electron scat-tering in lithium and oxygen nuclei [ISS-68/10] 19 p3330 N68-31402 on of carbon monoxide

Low temperature precipitation for removal of oxygen in liquid so [LA-3936] 19 p3229 N68-31747

Nondestructive method for determining uranium and oxygen ratios in uranium dioxide ceramic fuels [RT/ING/67/7] 19 p3232 N68-31945

Atmospheric absorption by carbon dioxide, water vapor and oxygen [REPT-08183-2-F] 19 p3233 N68-31992 Desorption of oxygen from cadmium sulfide single

[TR-24] 20 p3564 N68-32520 Permeation and diffusion of nitrogen, oxygen and rare gases through stainless steel [LA-3909-MS] 20 p3503 N68-33236

Dynamic coupling between F2 region and protono-sphere - solution of time dependent continuity equa-tions hydrogen and oxygen ions in topside ionosphere [NASA-TM-X-6310] 20 p3473 NSE-33267

Spin orbit doublet splitting in oxygen 17 20 p3550 N68-33423 Molecular absorption of radio waves in atmospheric oxygen and water vapor as determined by radio astronomy methods

20 p3476 N68-33571 Hydrogen-oxygen reaction on nickel surface, elec-tron diffraction study [NASA-CR-96786] 21 p3651 N68-34298

Particle scattering notoproduction of hel ections from nuclear oxygen nuclei 21 p3740 N68-34320 NP-17497]

Operational performance of carbon dioxide elec-trolyzers using solid electrolytes for oxygen reclama-

[NASA-TM-X-61194] 21 p3654 N68-34643 Polarographic cell for ex oxygen in various solutions [RTS-4688] ative determination of 22 p3819 N88-34871 EX

047

160

leon

228

tide,

5084

pro-

5305

ures

5443

5520

7101

a for

7344

n of

7389

lium

7570

s an-

8122

food.

it en-

8968

scat-

9734

ction

0041

0257

ength

0606

scat-

1402

oxide

1747

n and

11945

water

1992

single

2520

n and

13236

tono equa

33267

33423

oberic io as-

33571

elec

34298

uclear

34320

elec-

34643

ion of

34871

and water [RTS-4696] Condensati Detonatio ous mixtures (BNL-50118) [BM-IC-8358] [EUR-3565.E]

NASA-CR-1182] Molecular absorp Atomic absorption spectro [SQUID-TR-CAL-95-PU] Electrical conductivity of copper oxide plates with Varying oxygen content [NASA-TT-F-11919] Theoretical description of the reaction rate of an ion-molecule interchange reaction as a function of collision NASA-TM-X-63342] Cross section set sensitivity to neutron transport in oxygen IORNL-TM-22521 Strain aging cause [FTD-HT-67-206] Literature survey on [RD/B/N-1134] Cross sections for elastic scattering of pronous of company of the Low energy electron diffraction studies of oxygen, carbon monoxide and nitrogen adsorption on tungsten /112/face Gas chromatographic analysis of adsorbed oxygen from UV irradiated ZnO samples [GA-8431] 23 p4149 N68-36283 Conplete system for shipboard chromatographic analysis of dissolved oxygen, argon, and nitrogen [AD-673426] 23 p4056 N68-36556 Oxygen dissolut liquid silver alloys tion kinetics and thermodynamics for Comprehensive survey of oxygen X ray emission band shift to evaluate soft X ray spectroscopy as tool for characterizing thin layers on metals: [TR-2] 23 p4015 N68-37180 Mercury amalgam method of determining oxygen Catalytic action and rate limiting transition state of licon-oxygen bond cleavage Time reversal invariance balance of radioactive decay Latitudinal and temporal variations of total particle and oxygen molecule density distribution in terrestrial atmosphere between 70 and 150 kilometers Titration analysis on iron-oxygen system ther-todynamics in high temperature galvanic cells 24 p4215 N68-37783 Thermodynamic analysis of solid solutions of carbon, nitrogen, and oxygen in niobium and tantalum [ORNL-TR-1942] 24 p4354 N68-37960 Equilibrium thermody UTIAS-TN-1281 OXYGEN ANALYZERS Miniature oxygen deficiency alarm system using sectrochemical cell as sensor Oxygen determination Oxygen and carbon determined the control of the con nation in germanium by Detection methods for oxygen concentration in sil-[NASA-TT-F-11556] 09 p1412 N68-19492 Construction and performance ric system for measuring atm ce of aircraft radiomet-

[TR-0158/3230-46/-8]

duct development and testing of thin film oxygen 22 p3875 N68-35149 o microwaves by oxygen nt of oxygen in nickel oxide 22 p3825 N68-35402 ophotometric analysis of and oxygen 22 p3826 N68-35464 22 p3951 N68-35726 22 p3829 N68-35747 22 p3934 N68-35772 ed by oxygen in molybdenum 22 p3892 N68-35869 m combustion in con-22 p3981 N68-35958 23 p4005 N68-36165 23 p4012 N68-36902 nic flowing gase-24 p4352 N68-37496 24 p4210 N68-37507 24 p4210 N68-37525 ice test by measuring reaction 24 p4308 N68-37561 24 p4249 N68-37628

04 p0472 N68-13640

08 pl138 N68-17272

10 p1529 N68-19845

ic data for H2-O2-He 24 p4355 N68-38083 04 p0462 N68-13257 non-ferrous metals by

Aeration studies in submerged fermentations using steam sterilizable dissolved oxygen sensor of improved 11 p1634 N68-21043 Design of electrochemical a measurement of oxygen content [UNC-5131] meter for conti 14 p2257 N68-25160 re portable bilevel alarm for oxygen deficient BM-RI-7163 17 p2889 N68-29376 OXYGEN ATOMS Mass spectrometric analyses of particle-surface in-teractions resulting when oxygen atoms moving with satellite velocities strike solid surface [NASA-CR-91520] 04 p0551 N68-13765 Catalytic effects of m rfaces on oxygen n at low p 05 p0652 N68-14637 NASA-CR-917341 Reaction kinetics associated with oxygen atoms in-teraction with platinum foil under simulated upper at-NASA-CR-925671 06 p0832 N68-15098 tions involved in nitric

oxide-atomic oxygen reacti [AFCRL-68-0137] 13 p2019 N68-23906 heric ion composition Latitudinal variati NASA-TM-X-632211 15 n2457 N68-25756 netic resonance study 15 p2405 N68-25942 sion coefficients for oxygen atoms in rare gas

16 p2743 N68-27348 sinless steel atomic ox-Design and construction yeen beam system for solid [NASA-CR-96136] re bombardment 19 p3227 N68-31524 Recombination radiation electrons in field of singly ion nd bremestrahlung of ed oxygen and nitrogen 19 p3344 N68-32054

Rare earth oxides and oxys of oxygen atom coordination ilt structures as function 20 p3425 N68-32858

Survival of rats expo to 10 psia oxygen to further exposure at one atmi [NADC-MR-6714] 11 p1634 N68-20919 ical mo zing nitrogen washout 13 p1998 N68-23187 olling oxygen supply of 19 p3213 N68-32148

Pulmonary hypertensi on in rats resulting from ox-NADC-MR-6802) 22 p3811 N68-35382 Pilot performance under c yeen breathing at high pressu [JPRS-46636] tions of hypoxia or ox-23 p4001 N68-37345

Betatron irradiation of oxygen compounds at 31 03 p0315 N68-12586 [NYO-3364-31] Empirical equations for are and velocity of carbo calculating detonation pre-n hydrogen oxygen nitroge [NOLTR-67-66] 04 p0466 N68-13075 Gas chromatographic analyompounds released by veg ysis on oxygen containing petables grown in closed

09 p1282 N68-18916 High temperature X ray diffi-ty regions of intermediate pl oxide-oxygen, terbium oxide-or um oxide-oxygen systems tion studies of stabili es of praseodymium en, and cerium-terhi 13 p2023 N68-24271

Thermoelectric power in ce m okide 14 p2333 N68-25241 Mathematical model for Brayton cycle in turbine eng 14 n2334 N68-25298

m oxide plugging in-[LA-DC-9423] 16 p2665 N68-28142 termining partial pre-sase mixture uranius le, and uranium diss Solid state galvanic cells for dure of oxygen over three plonosulfide, uranium oxysulfe

17 p2837 N68-28453 quilibria in europ

20 p3424 N68-32843

Tensimetric studies of cerium terbium oxygen system

20 p3424 N68-32844 Thermodynamic property data tables for CHNOPS impounds and heats of combustion and formation for Organic compounds (NASA-CR-96468) 20 p3432 N68-33427

20 p3433 N68-33467

cals in radi NYO-3753-3 23 p4013 N68-36959

OXYGEN CONSUMPTION Oxygen uptake com gases in human subject [AMRL-TR-67-17] for analysis of respiratory

05 p0614 N68-14505 Effects on anima in beings asbjected to cod pressure and high [NASA-TT-F-11400] 07 p0945 N68-16640

cs and space science cts, oxygen common netabolism, and train ological aspects of httesamess, physical DLR-FB-68-24] 16 p2599 N68-27875

oxygen consumption in hanges in lungs 17 p2818 N68-28505

and oxygen consumption at several exe [NASA-TT-F-11809] 18 p3010 N68-30400

raft cabin simula Life support systems for with oxygen and wa (NASA-TM-X-61179) 21 p3640 N68-34419 og prolonged expo

SMRL-5201 21 p3637 N68-34630 U HYPOXIA

OXYGEN PLUORIDES

Reactions of dioxygenyl flu eroborate and oxygen fluorides (UTRI-C227-20) 04 m0474 N68-13836 tructure of oxygen fluorides 20 p3420 N68-32593 (IITRI-C6135-1)

rgy oxygen diffu Reaction kir dihorane propellant sys [NASA-CR-97203]

23 p4009 N68-36596 OXYGEN ISOTOPES

Born approximation tions in oxygen 16 react (AD-661347) By Cross sec carbon 12 04 p0347 N68-13030

as radioactive tracers 05 p0705 N68-14060 ium, and other isotopes, boron isotope separa-d oxygen isotopes, and

05 ±0619 N&B-14143 of oxygen 16 and ox-07 p0952 N68-16126

1 GeV incident energy and oxygen 16 IBNL-118901 07 p1044 N68-16511

Energy levels in compound to at excitation by 73 MeV [NP-17203] as system of oxygen 09 p1394 N68-19067

Particle-hole approach to of nitrogen 15 and exygen 15 [JINR-P4-3674] clear photoproduction nor nuclei 14 p2317 N68-25350 e even parity ro

16 p2724 N68-27837

Phase shift, single particl Fock spectra of oxygen 16 a [IPNO/TH-118] onances, and Hartra Icium 16 nuclei 19 p3327 N68-3120 of rare isotopic tys Infrared spectra and analysis of nitrous oxide and nitric oxid

20 p3433 N68-33470 ning photo-partic

21 p3734 N66-33746 ar reactions on N 15 and O 15 macks (BNL-TR-218) 24 p4315 N68-37886

OXYGEN MASKS de for de ing face fit for respiratory pro-(SC-RR-67-461) 01 p0018 N66-10988

17 p2921 N68-29021

23 p4057 N68-37033

SUBJ

P-N JUR

capac

For

PAFEM

Crys p-n tra senide (FTD-

Beh

LYC

Cur

NAS.

Free

Met

NAS

Stre

tions, i

Nuc [COO

Elec

RAE

Radi n solar [NAS/

Piez [NAS/

p-n jus

Zero p-n jun

Tech

(SR-1)

Vac

RTS-4

Com for p-m

p-n jun tion at (EE-TI

SOLAR CO

Lithi version radiatio [NASA

Spec um are (FTD-I

Dete and inf

Syste

Battery-powered air purifying respirator to provide protection factor of 1000 against particulates when used with half and full face masks, rigid helmets, and [UCRL-50263] 05 p0617 N68-14989 ng gas protective devices and breathing apparatus 18 p3016 N68-30834 Chemical oxygen-generating and applications in gas masks as [NASA-TT-F-11702] OXYGEN METABOLISM High altitude effects on oxygen intake, and respira-tion during human activity, and rest cycle [NASA-TT-F-11284] 09 p1283 N68-18927 Beanolamide effects on human respiratory accli-matization to high abitudes [SAM-TR-67-98] 11 p1634 N68-21016 Comparative reliability of human respiratory gas change determination methods [NASA-TT-F-11466] 13 p2003 N68-24330 Bioregenerative life support systems for long dura-tion space flights - Hydrogenomonas biosynthesis und signe photosynthesis processes [NASA-SP-165] 15 p2392 N68-26207 15 p2392 N68-26207 Chemosynthetic metabolic requirements for Hydrogenom metabolism and physiological drogenomonas culture growths 15 p2393 N68-26209 ous methods for controlling oxygen supply of human body 19 p3213 N68-32148 External biosensor using optical backscatter for con-tuous determination of blood oxygenation in humans and animals [NASA-CR-92318] 23 p3998 N68-36572 OXYGEN PRODUCTION Design criteria for water vapor electrolysis cell modules with integral ducting and fan for operation in recirculated spacecraft cabin air [NASA-CR-73170] 05 p0608 N68-14784 Gas chromatographic analysis on oxygen containing ompounds released by vegetables grown in closed 09 p1282 N68-18916 Photosensitized de [NASA-CR-94252] n of hydroperoxides 12 p1831 N68-21933 Portable emergency oxygon generator based on reac-tion of alkali peroxides with water vapor for self-rescue [NASA-TT-F-11701] 17 p2828 N68-28337 duction of gaseous oxygen from salts containing active oxygen [NASA-TT-F-11708] 18 p3027 N68-30386 Cultivating plants for close glong manned space flights d ecological systems during long manner [JPRS-46306] 20 p3407 N68-33269 Water electrolysis unit des m and development for integrated life support system oxygen production [NASA-CR-66654] 21 p3639 N68-34044 21 p3619 N68-34044 hydrogenomous culture with hydrogen-oxygen formation by culture medium electrolysis [BMWF-FB-W-68-46] 22 pages Carbon dioxide reduction and water electrolysis system /breadboard models for manned spacecraft life [AMRL-TR-67-227] 22 p3818 N68-35943 OXYGEN RECOMBINATION Feasibility of using shock tube measurements of rcombination rates in hydrogen oxygen diluent system. 03 p0336 N68-12146 Catalytic flat plate for m assering heat transfer in nonequilibrium expansion of oxygen [CAL-AF-1905-A-3] 04 p0596 N68-13441 Characterization of recombination and control elec-trodes for spacecraft nickel cadmium cells [NASA-CR-93244] 08 pl 120 N68-17741 Excitation of suroral green line by dissociative recombination of oxygen ions [NASA-CR-93352] 08 p1175 N68-18220 Oxygen signal and recombination electrodes developed for charge control of spacecraft nickel cadmium butteries
[RASA-CR-93427] 09 p1275 N68-18826 or p1275 N68-18826 bination of atomic oxygen in gas flow [CAL-AF-2033-A-1] If along the property of the page 18 oxygen in gas flow ock tube spectral measurements of electron mbinations with nitrogen and oxygen ions in far adjution range.

OXYGEN SPECTRA Spectrum of triply ionized oxygen [UUIP-540] 01 p0103 N68-10225 OXYGEN SUPPLY EQUIPMENT Ignition and flame propagation in oil con Analytical simulation of integrated life support system and oxygen recovery system [NASA-CR-66454] OS p0613 N68-14243 Feasibility demonstration of palladium-silver ydrogen diffusion cathode in water-electrolysis cells for aerospace applic [AMRL-TR-67-65] Onboard oxygen generation ground support equip and submarine use [NASA-CR-96543] NASA-CR-903-51
Low temperature performance of comparent closed circuit breathing apparatus
22 p3815 N68-34894 ygen closed cir IBM-RI-71921 OXYGEN TENSION Oxygen microelectrode ear chamber for direct quantitative measurement of oxygen in extracellular fluid of living bone cells [E-1083] 06 p0772 N68-15205 Thermodynamic properties of oxygen in non-troichiometric uranium dioxide [AECL-3072] 22 p3976 N68-34875 OXYGEN TOXICITY OXYGEN 18 Oxygen 18 tracer and low temperature chemisorpon studies of carbon-oxygen reaction OXYGENATION Ellipsometric method for measuring optical parame-ters of substrate and oxidation surface layer thickness [NASA-CR-95355] Controlled addition of small amounts of oxygen to niobium in evacuated chamber at 900 deg C [ORO-2570-12] 20 p3431 N68-33192 Peroxycarbonate oxygenation agents as catalysts for aromatic substitution reactions OXYHEMOGLOBIN Oxygen diffusion coefficient in bovine serum albu-in and human oxyhemoglobin OZONATES. Recovery of cerium and lanthanum by exonation of fanthanide solutions NT OZONATES [AFCRL-67-0572]

Temporal solutions for photochemical equation escribing distribution of ozone and oxygen during as [NASA-TN-D-3993] 01 p0057 N68-10369 Simultaneous dust and ozone soundings over North and Central America [NASA-CR-90427] 02 p0206 N68-11414 Atmospheric absorption of solar radiation by ozone 03 p0340 N68-12497 Satellite measurements analyses of daytime ozone rofile latitude TR-0158/3260-10/-21 04 p0499 N68-13073 Air oxidation of methane to formaldehyde using gaseous nitric oxide catalyst with solid heated reaction beds is oxidation of methane with oximized air over potamium tetraborate bed [NASA-CR-73070-5] 04 p0473 N68-13778 Method for connecting ozonizers along fluw in electrosynthesis of ozone (ANL-TRANS-521) 05 p0623 N68-14410 Kinetics of orone electrosynthesis under flow condi-(ANL-TRANS-522) 05 p0624 N68-14479 Ozone and nitrogen oxide concentration in game irradiator operating chamber as potential health haza [BNL-TR-160] 05 p0645 N68-14743 Absorption and emission spectra of atmospheric ozone at wavelengths of 9,6 microns measured by heliometers and infrared spectrometers [REPT.-28/1967] O6 p0834 N68-15350 Nitrogen dioxide luminescence produced by molecular beam intersection of nitrogen oxide and reone 08 p1140 N68-17663

Design, and performance of ozone measuring sonde for atmospheric composition studies odies 09 p1335 N68-19015 Heat transfer in thermally decomposing ozone mix-tures in turbulent flow past solid surface 10 p1614 N68-20137 r North America 11 p1693 N68-21653 [AFCRL-64-30, V. 4] Determining vertical distribution and total amount of atmospheric ozone from outgoing infrared radiation [NASA-TM-X-63218] 14 p2247 N68-24763 Photolysis of ozone at low pressures
15 p2407 N68-26075 Ozone detection by chemilu using sounding rockets in strutospi [ECOM-5169] minescent principle sphere 15 p2462 N68-26635 Physiological responses of animan arbon tetrafluoride, and nitrogen oxide 15 p2398 N68-26728 [NASA-CR-95106] Monochromator and Michelson interferometer nited to form refractometer to find infrared refractive

New ozone radiosonde deven on of air movements in lower st de development and investiga-lower stratosphere 18 p3066 N68-29740 Ozone concentration and variation on Pikes Peak for pulmonary edema research [AD-670989] 19 p3208 N68-31035 Growth rates of single cracks for vulcanizates of butyl rubber in ozonized oxygen atmosphere 21 p3707 N68-33901

Microwave absorption by stratospheric ozone, and detection of 37.836 and 30.056 gc/sec ozone lines 23 p4052 N68-36048 ne content survey during third quarter 1967 in

OZONOMETRY

[AFCRL-68-0207]

01 p0148 N68-10154

09 p1287 N68-18428

22 p3976 N68-34875

l0 p1487 N68-20052

16 p2692 N68-28043

22 p3819 N68-34876

10 p1468 N68-20190

20 p3427 N68-32893

ration equipment with minimal ent and applicable to spacecraft

thods, and tabulated results of ozone electrochemical radiosonde at Ber-Equipment, methods, and tanuares measurement with electrochemical radiosonde at Ber-lin, Germany, Nov. 1966 - June 1967 08 p1195 N68-17346

Ozone content survey during third quarter 1967 in Belgium 23 p4057 N68-37033

OZONOSPHERE

Mathematical model for ozone photochemistry in presence of water vapor [RM-5643-PR] 21 p3655 N68-34722

P

P- 3 AIRCRAFT High frequency ante matching on P-3 aircraft [CWS-1] coupler for impeda 10 p1498 N68-20047 P.A.C.M. TELEMETRY PCM telemetry onboard equipment and putting for European I spacecraft third stage 02 p0183 N68-11835 Breadboard data compressor for advanced vehicle borne palse code modulated telemetry system with adaptive capability [NASA-CR-92673] 07 p0962 N68-16361 P-I-N DIODES U DIODES P-I-N JUNCTIONS P+n structure for controlled spectrum photovoltaic conversion of radiant to electric energy 08 pl 124 N68-17830 P-i-n diode charac control applications [R67ELS-E3] n for nanosecond pulse 12 p1848 N68-22065 Design, fabrication, and testing of ring hybrid 8 band diode phase shifter 13 p2038 N68-23052

Fabrication of lithium compensated p-i-n type and surface barrier type silicon semiconductor detectors. [CEA-R-3419] 16 p2664 N68-28029 Electrical and optical properties of gold-doped silicon p-i-n diodes at low and moderate current injection levels 19 p3347 N68-30913

nts for performance evalua tion of p-i-n switching diode [RAE-TR-68001] 21 p3667 N68-34011

UV radiation range [NASA-CR-96235]

20 p3552 N68-32284

Oxygen altrogen atomic recombination reactions catalyzed by carbon compounds [AC-7-PU] 23 p4007 N68-36297

SUBJECT INDEX P-N JUNCTIONS nce of e-a juncti capacitance of p-n junct Form and duration of trans ns used as com [FTD-HT-23-553-67] Behavior of silic junctions under fast ne [LYCEN-6756] junctions in semicond NASA-TN-D-44031 Nuclear radiati [COO-1624-11] Electrical cha n solar cells and n-p soli [NASA-TM-X-59749] [NASA-CR-1089] (SR-1)

X

5

7

3

3

15 p2537 N68-26160 15 p2541 N68-26627 ns for static behavior of p-n junc-16 p2632 N68-27654 um ailicon alloyed n-n and ns or impurity contamina-16 p2745 N68-27788 17 p2861 N68-28764 electrics, p-n junc d radiation studies 18 p3044 N68-29639 itter and network 18 p3152 N68-30009 m deposits. r sulfide and codmium rejunctions 20 p3562 N68-32314 d differential equation 20 p3563 N68-32345 ts of diffused silico e of impurity concer 20 p3564 N68-32614 ning p-n silicon

d on LC circuits with non

06 p0817 N68-15258

in parametrons with

06 p0817 N68-15260

emory devices 06 p0818 N68-15261

06 p0895 N68-15883 crystals and surface barrier

diation 09 p1407 N68-18508

tics of turneling p-n

on effect on shape of fu adied in p-type gallium

ients occurring in

09 p1315 N68-19062 Frequency dependence action semiconductor de apacitance of abrupt p-n 10 p1580 N68-20312 nd optical properties of gallium phosphide crysta [NASA-CR-94308] 12 p1953 N68-22111 ss effects on electric and localized pressure in transistors and diod properties of p-n junc-fects on silicon and ger-13 p2039 N68-23546 licon p-a junctions 13 p2040 N68-23856 gallium arsenide p-n 14 p2190 N68-24366 ics of lithium doped p-14 p2195 N68-25624 analysis of unit 20 p3402 N68-32919 con solar cells of high con-nerve resistance to space Lithium-diffured p-n silic ersion efficiency and im radiation effects [NASA-CR-97077] 22 p3808 N68-35814 pectral char ted emission galli-(FTD-HT-67-393) 22 p3952 N68-35872 nd beta particles, gamma rays, ith p-n junctions 23 p4157 N68-37176 Detection of alpha and infrared radiation [CEA-BIB-97] conductor diode of planar p. p. inneri Experimental study of im-breakdown and capacitance of 23 p-158 N68-37311

P-N-P JUNCTIONS Development and experimental testing of high ower, high speed, pulse-type germanium p-n-p drift 23 p4033 N64-37314 P-TYPE SEMICONDUCTORS Complementary thin fil trium for p-type and o (ECOM-02432-F1 02 p0187 N68-11113 Piezoresistance effect in p-type lead telluride (NOLTR-46-55) 03 p0403 N68-11992 p and a type silicon and ct measure single crys 03 p0405 N68-12223

ent field affect on sur-timonide 06 p0892 N68-15084 Large signal alternating faces of N and P-type indice [TR-8] I n-type and p-type indi-66 p1223 N68-17560 09 p1316 N68-19290

d p-type allicon crystals as ning hall effect 16 p2744 N68-27639 Tunction of proton energy u [NASA-TM-X-60124] Miniature type high ser miconductor strain gage (NAL-TR-146) 17 p2887 N68-29298 s of cleaved silicon and Electrical surface proper 20 p3563 N68-32413

ities effect on carri er lifetime in bulk solar cell material [NASA-CR-96272] 20 p3573 N68-33104 chaiques used to study ad phonon distributions in 20 p3575 N68-33460

22 p3949 N68-3516?

moelectric power, Hall of a and p type alloyed 22 p3952 N68-35928 determined for metal to

23 p4158 N68-37312

Vector currents for S matrix elements applied to strangeness of hyperons, S and P wave decay, and baryon-meson and meaon-meson scattering 18 p3130 N68-29944

24 p4304 N68-37432

ic wave by earth core and long Diffraction of P se AD-6746061 24 p4252 N68-38075 P-1127 AIRCRAFT

Flight tests of stability augmentin V/STOL P-1127 sinerall saing (NRC-10257) 23 p3990 N68-36504 PACIFIC ISLAM

NT NEW ZEALAND ogy of Bo 02 p0206 N68-11446

and transportation, sit and government coordina criment to collect tropic tion during Line blands ex NCAR-TN-30 21 p3684 N68-33934

PACIFIC OCEAN Meteorological on, and cloud f nervation on evapor ver Pacific Ocean durin 04 p0532 N68-12934 d speed fields in Pacific ographic data OS p0653 N68-14781 Contour charts Ocean computed fr [HIG-67-7] Aniastropy of Pacific upper m [MPL-U-21/66]

06 p0870 N68-16004

07 p1018 N68-16724

10 p1551 N68-19518 tant she f Pacific DR-281 11 p1691 N68-21420

f truck charts for survey Pacific Ocean during

11 p1692 N68-21497 in Kuril- Kamelatka (ACIC-TC-1274) 12 p1869 N68-22763 13 p2063 N68-24013 city and direction off

Analysis of sea of Tokai-mura [JAERI-4044] 14 p2251 N64-25371 s induced by tremmic nin count 15 p2459 N68-26189

19 n3273 NAS-31840 anticylone effect on leastern Soviet Union 20 p3519 N68-32437 Pacific Or

a con ferm 20 y3449 N48-32498 is in Pacific Ocean Soor and rediments (RTS-4650)

20 p3469 N68-32542 ents and symp 20 p3521 N68-32738

er Pacific Ocean com-errestrial photograph 20 p3524 N64-33032 Exploratory deployment orth Pacific for meteor configurations of buoys in logical and occupantialis

[GDC-AAX68-003] 24 p4283 N68-38320 PACKAGES NT INSTRUMENT PACKAGES

nce survey on cargo h 14 p2361 N68-25478

ation and testing of packagings for transport of tive materials in accordance with applicable in-EUR-3485.E.F. V. 21 20 p3492 N68-33603

PACKAGING
NT ELECTRONIC PACKAGING

02 potes N68-11252 Packaging, shipping, electroexplosive devices [NASA-CR-66523] iding procedures for

Compressed food space for military appl [NASA-CR-91879] 06 p0776 N6E-1608

[PB-176215] 07 p1085 N68-16281 the membrane theory is

16 p2784 N66-27975 SC-CR-67-28631 16 p2672 N68-38105

10 p3491 NAT-33594 20 p349) N64-33595

flutter of [AS-67-1 Plutter panels un NASA-7

Turbul [NASA-1

Experi NASA-1

Linear and thin-[NASA-C

Inplant of slightly

Engine curved sh [NASA-C

Shock-flow drive [NASA-C

Structu along its p (FTD-HT

Measuring panel

PANELS NT CUE NT REC

Compo

Compre [\$-122]

Dark fie

with transp

Digital response to [NASA-CI

Thermal tion of all ablator ma [NASA-CS

Design, prefabricat 70-inch dia [NASA-CI

Finite el characteris

(REPT.-27

Rolling-d structural n [AMMRC-

Fabricati um-titaniu

NASA-CR Finite of

NRC-1000

Roll bost and metallo panel with b [AMMRC-0

03 p0295 N68-11911 nel flutter and vibration to simulated

04 p0590 N68-13817

D1-82-0652)

Mechani [RF-93-O]

Transfer frequencie stringer pa [AFML-T

FACRING BENSITY	Electron pair production by high energy electron beam in propane hubble chamber	PALEONTOLOG
Packing density and viscosity limitations in achieving high solids contents in castable rocket propellants [CARDE-TR-568/66] 02 p0260 N68-11766	[SLAC-TRANS-64] 12 p1934 N68-22672 Supernovae explosions induced by electron-nesitron	Upper Creta Basin of western
Rhombohedral cell model for structural analysis on		PALLADIUM
systematic sphere packing [CRREL-RR-201] 11 p1718 N68-20961	Photoproduction cross sections of mesons on	Delayed prot ladium 102/cart
Accelerated occurrence of closed order in gold- nilver alloys due to vacancies caused by host treatment [JUL-326-RW] 17 p2899 N68-28551	hydrogen, carbon, and aluminium with photons [DESY-67/30] 12 p1937 N68-22788	[JINR-P6-3494
	Photoproduction of neutral pions in backward reac- tion of bremsstrahlung beam	[PB-176155]
Tap density values for irregular boron particles of specified sizes and size blends [MLM-1458] 20 p3513 N68-33325	[DE5Y-67/36] 13 p2115 N68-23366	Amperometri with hymochlorii
PACKINGS [SEALS]	[NEVIS-165] 13 p2115 N68-23420	(UCRL-17824) Preparation of
Grooved-shaft viscoseals designed for laminar and surfulent regions	Photoproduction of charged pion pairs from hydrogen at energies up to 1500 Mev	(CEA-R-3065)
[NASA-CR-90309] 02 p0214 N68-11025 PADE APPROXIMATION	Angular correlation between emitted photon pairs	Ellipsometric
Convergent bounding Pade approximation	and annihilated positrons in solid and liquid metals and semiconductors	CORNL-TM-211
procedures generalized for applications to ther- modynamic properties of ferromagnetic lsing model (BNL-11648) 01 p0108 N68-10487	13 p2134 N68-23600	Photoemission ladium, platinum
PAGEOS SATELLITE	Neutrino detector used to observe muon pair production by muons	SU-SEL-67-04
Fabrication and testing of Pageos 1 [NASA-TN-D-4596] 15 p2563 N68-25820	14 p2309 N68-24946 Cross sections for photoproduction of high energy	identification neutron fission o
Design, fabrication, and reliability prediction of	electron positron pairs from carbon 15 p2516 N68-26048	(USNRDL-TR-6 Palladium and
Pagens satellite 16 p2773 N68-27927	Electron beam p-n junction active devices with single	ingression and er (NASA-TM-X-5
PAIN SENSITIVITY	crystal silicon bombardment for electron hole pair production	Mombauer co
Quantitative human tolerance limits to local thermal effects from infrared radiation	15 p2537 N68-26160 Asymmetric photoproduction of muon pairs of	into palladium cr [NASA-TT-F-11
21 p3634 N68-33924 PAINTS	hydrogen as test of quantum electrodynamics [HEPL-534] 15 p2520 N68-26477	Microhardnes Ag, AgPd, Pd, ar
Factors affecting adhesion of aircraft paint systems to anodized aleminum alloys	Rare decay modes of eta-meson	200000000000000000000000000000000000000
[AWRE-O-22/67] 01 p0079 N68-10922	15 p2526 N68-26941 Green functions for pair production in degenerate	Far infrared sp platinum 2 comp organophosphor
In-flight study of main rotor blade paint schemes to improve helicopter safety through increased conspicui-	fermion system due to particle interactions 17 p2923 N68-28403	organophosphor
[USAARU-68-2] 03 p0301 N68-12368	Positrons and differential cross sections for pair	Photoemission
Radionuclide selection and radiation protection	[SLAC-PUB-330] 17 p2934 N68-29113	on cobalt, pallad
standards for timepieces with radiolominous painted components	Considerated and desire for independent of and	Preparation a complexes of nic
04 p0508 N68-13237 Heat sensitive paints to measure heat distribution on	tiperipheral processes based on bubble chamber stu- dies	This is aligned
wind tunnel models [ONERA-TP-470] 04 p0597 N68-13764	17 p2943 N68-29490 Resonance production effects on pion pair angular	Nucleation as dimethylglyoxim (COO-582-14)
	distribution of reaction pion proton approaches limit of proton 5 pion	(COO-582-14) Kinetics and m
Beta-ray backscattering gage developed for measur- ing paint film thickness [NCEL-TR-553] 07 p1001 N68-17210	22 p3925 N68-34998	and Pd /II/ compi [AFOSR-68-162
Field tests of airfield marking paint flexibility on shur- ty sealed asphalt	Nuclei pairing interactions solved through iteration of number conserving equations at ground state	PALLADIUM ALL
(R-556) 08 p1191 N68-17779	[TH/68/24] 22 p3931 NAR/35550	Feasibility d
Fluorescent paint and other pilot warning indicators for aircraft collision avoidance	Hydrodynamic difference equations for calculating collapse and explosion of stars induced by electron-positron pair production	hydrogen diffusi for aerospace app
OB p1116 N68-18232	23 p4119 N68-36692	Solid electroly
Design and performance of Mariner 5 temperature control assembly coatings [NASA-CR-93921] 11 p1788 N68-20989	First excited state branching ratios for Y 10 and N 16 determined from beta decay	ties of palladium
	24 p4308 N68-37547	[AD-665821]
way marking paint flexibility	PALEOMAGNETISM Conference in Leningrad on geomagnetism and	Transport prop
Compatibility of vinyl paints for lining heavy water	paleomagnetium	Heat resistance
steel storage tanks [BARC-322] 18 p3100 N68-30763	[ACIC-TC-1252] 02 p0203 N68-11009 Remanent magnetic properties of rock formations of	metals and alloys
Paint scheme developed for increasing conspicuity of	Remanent magnetic properties of rock formations of southwestern Wyoming and northeastern Utah 09 p1336 N68-19279	Electrodepositi proving microha
[USAARU-68-1] 22 p3805 N68-35373	Paleomagnetism of Plio-Pleistocene Lousetown for-	eistances
All PRODUCTION	mation lava flows in Nevada 13 p2056 N68-23087	Diffusion coeff
Photoelectric effect, Compton effect, and pair production responsible for radiation absorption in solids	Remanent magnetization of lake Yakima basalt in	electrodes
(R67SD55) 01 p0122 N68-10159	Washington 13 p2057 N68-23217	Local atomic o
Coherent bremsstrahlung and pair production on	Earthquakes, tectonic structure, magnetic fields,	quenched and age
[DESY-67/23] 01 p0106 N68-10423	crustal structure, paleomagnetism, and other aspects of terrestrial geophysics reported in Soviet-bloc literature 14 p2245 Non-24534	PAM (MODULATE U PULSE AMP
Relativistic quantum analysis on luminous electron positron pair production, and photon emission in mag- netic field		PANAMA
[NASA-TT-F-11618] 10 p1566 N68-19751	Aeromagnetic survey for determining material com- position of rocks of paleozic basement based on pecu- liarities of anomalous magnetic field	Microclimatic vicinity - Septemb
Photoproduced muon pairs for testing quantum electrodynamics	[ACIC-TC-1348] 15 p2459 N68-26059 Paleomagnetism of volcanic rock, and remanent and	[AD-669594]
[AFCRL-67-0674] 11 p1750 N68-20713	thermoremanent magnetization 16 p2652 N68-27239	PANEL FLUTTER Mathematical 1
Production of kaon-antikaon pairs in pion-proton in- teractions	Paleomagnetism of Marys Peak sill, Oregon, relates	effect on flat pane [NASA-TT-F-113
11 p1750 N68-20776 Electroproduction of pi-mesons and pi-meson pairs	Paleomagnetism of Marys Peak sill, Oregon, relates its cooling history to its remanent magnetization in geomagnetic investigation	Boundary laver
from hydrogen	18 p3083 N66-29622	personic speed ONERA-NT-116
Photoproduction of positive pi mesons between 1.2 and 3 GeV at decreasing production angle (NP-16737) 12 a(013 N68-22666	Permafrost, crustal movements, magnetic anomalies, paleomagnesism, and other reports on terrestrial geophysics	Response of pa
and 3 GeV at decreasing production angle [NP-16737] 12 p1933 N68-22666	geophysics 18 p3069 N68-30545	D1-82-0652)

eous Ammosoides tro-Australia - Heteromorph 02 p0203 N68-11063 ons of tellurium 111 produced by pal-ton-12,3n/reaction 85 p0716 N68-14688 alysis of platinum group metals 07 p1006 N68-16173 titration of pulladium 2 by oxidation 07 p0954 N68-16259 f deuterium containing palladium and for neutron generation 11 p1654 N68-21404 ements of palladium optical high vacuum region 12 p1917 N68-22709 and optical properties of cobalt, pal-and gadolinium 13 p2137 N68-23854 and yield of palladium 117 in thermal furanium 233 8-25] 15 p2520 N68-26446 platinum coatings to prevent nitrogen mbrittlement of chromium [2324] 16 p2681 N68-27693 obalt 57 isotope source incorporated systal lattice 1854] 18 p3151 N68-29956 of electrospark-deposited layers of 20 p3487 N68-32589 pectra and structure of palladium 2 and plexes and vibrational spectra of some as compounds 22 p3821 N68-35015 and optical reflectivity measurements num, platinum, and gadolinium 23 p4148 N68-36125 and reactions of trifluorophosphine kel, palladium, and platinum 23 p4005 N68-36173 d growth of nickel and palladium 23 p4009 N68-36502 sechanisms of acid hydrolyses of Ni /II/ lexes with ethylenebishiguanide 0) 24 p4214 N68-37707 demonstration of palladium-silver ton cathode in water-electrolysis cells plication te studi te studies on thermodynamic proper-copper alloys and palladium-tin alloys 11 p1711 N68-20688 erties of palladium gold alloys 14 p2331 N68-25046 e of platinum and palladium pure at high temperatures 20 p3498 N68-32673 on of palladium-nickel alloys for im-rdness, and contact and wear re-21 p3701 N68-33618 scient of hydrogen in palladium alloy 21 p3703 N68-33984 rder affect on magnetic properties of d copper palladium alloys 23 p4147 N68-36066 LITUDE MODULATION data on Panama Canal Zone and er 1967 18 p3110 N68-30667 model for evaluating boundary layer tat low supersonic speeds [35] 01 p0001 N68-10160 effect on flat panel flutter at low suX

63

88

73

on

39

04

al

00

al.

54

al

en

93

ed

56

of

89

15

uts

25

73

32

37

28

18

16

73

18

24

57

er

11

First order frequency effects in supersonic panel flutter of finite cylindrical shells
[AS-67-16] 07 p1091 N68-16694 d supported rectangular Flutter analysis on be NASA-TN-D-43571 08 p1251 N68-17651 Turbulent boundary layer effect on panel flutter (NASA-TN-D-4486) 09 pi 442 N68-18721 oretical analysis on su-niffened punels 09 p1444 N68-19143 Experimental study, and the personic flutter of corrugation (NASA-TN-D-4321) ria for panel flutter of this plates ear stab ity crit and thin-walled cylin (NASA-CR-89183) 14 p2359 N68-25338 ct on vibration and flutter personic flight 16 p2779 N68-27630 Implane edge restraint effect of slightly curved panels in supe supersonic flutter of curved shell panels [NASA-CR-89185] 21 p3789 N68-34201 Shock-panel coupling effe ts of supersonic turbulent flow driven by imper [NASA-CR-61986] 23 p3983 N68-36038 Structural analysis of nonlinear flutter of plate fixed FTD-HT-67-217) 23 p4179 N68-36292 d power flow into vibrat-Measurement of m [NASA-CR-98002] 23 p4181 N68-36511

PANELS
NT CURVED PANELS
NT RECTANGULAR PANELS Composite rolling of structural metal panels [AMMRC-CR-66-02/5] 01 p0069 N68-10573 Tramfer matrix method for predicting natural frequencies and normal modes of finite row of skin-IAFML-TR-67-2341 01 p0145 N68-10884 onded panels with alu-(S-122) 02 p0278 N68-11702 lysis of reflective charac-Ray tracing optics for ana teristics of transparent bead si ting 05 p0699 N68-14297 Dark field photography for large bubble chamber with transparent bead sheeting 05 p0660 N68-14298

Optical properties of beaded panel, and windows for hydrogen bubble chamber photography 05 p0699 N68-14303 Digital computer program for predicting panel response to turbulent boundary layer fluctuations [NASA-CR-61555] 07 p1091 N68-16702

Thermal properties of spacecraft materials - evalua-on of aluminum honeycomb panel structures and 09 p1449 N68-18853

Design, manufacture, prefabricated, vacuum-evac 70-inch diam cryogenic test [NASA-CR-61675] and application of sed, insulation panels to 10 p1533 N68-19635

Finite element method o haracteristics of aircraft fe of of analysis for vibration t finelage panel with fatigue (REPT.-27) 11 p1800 N68-21773 ue for fabrication of

Mechanized module to heat resistant solar cell col [RF-93-O] rand panels 12 p1818 N68-22010 process for composite

structural metal panels
[AMMRC-CR-66-02/6] 13 p2073 N68-23086 Fabrication of beryllium panel and composite beryl-m-titanium panel by electron beam and renistance

[NASA-CR-61637] 13 p2075 N68-23791 Finite element appro-bration modes and ra th to dynamic analysis of dom response of multibay

NRC-100011 13 p2164 N68-24282 and measurements on punel structures 14 p2368 N68-25573

Roll bonding procedu and metallographic eval panel with beryllium inser [AMMRC-CR-66-02/7] res for nickel alloy Rene 41 pation of beta titanium alloy 15 p2474 N68-26570

Structural and design concepts for portable shelter with solid vertical walls and roof 16 p2786 N68-27945

Predictions of response characteristics of sixcraft panel exposed to pseudo-sound fields of jet wake [D6-9944, V. 4] 17 p2804 N68-29281

Snapping mechanics of cylindrical panel under acoustic shock wave pressure [PB-177581T] 19 p3380 Na8-31739 ent for skin-stringer struc-Multilayer damping treats

[GSF/MC/68-9] 21 p3790 N68-34557 ANORAMIC SCANNING

Scanning and rectifying panoramic photographs of celestial bodies (ACIC-TC-1291) 04 p0509 N68-13272 Design, and performance ce of solid state frequency nner with crystal controlled (AD-664175)

09 p1301 N68-18349 ra for lunar surface imaging from landing site of luner po [JPRS-45374] 13 p2070 N68-24169

PANTHER AIRCRAFT
U F- 9 AIRCRAFT

PAPER CHROMATOGRAPHY

Relationships between an soils by paper chromatograph [NASA-TT-F-11484] o and humic acids in 06 p0772 N68-15166

Paper chromatogra analyses of pyrimidine [NASA-CR-95356] e bases 16 p2600 N68-28051 Chromatographic paper ctivation analysis of magin derivative seu

17 p2839 N68-28603 electrophoresis used in and transminium ele-(CEA-R-3411) 22 p3828 N68-35651

Selected articles in applied spectroscopy (FTD-HT-67-3) 92 p0220 N68-11575 Review of papers pred on organophosphorous and organomercury ch (AROD-2832-37-C) 03 p0314 N68-12512

Additives tested to improf paper to oil, water, and [RIA-67-2833] we durability and resistunce 09 p1354 N68-18277

Selected article [FTD-MT-65-72] al engineering 09 p1382 N68-18668 Mathematical models of computerized simi lesign of digital integrators

analogies [FTD-MT-66-137] 12 p1845 N68-21981 saterized simula-Electric conductive paper tion of electrohydrodynamic e comp 12 p1845 N68-21983

Aging of paper and preservation and restoration of books and documents [TT-67-51460] 12 p1985 N68-22558 PARABOLAS

Numerical boundary value technique using finite dif-erence equations for solving initial boundary parabolic MRC-TSR-782] 06 p0861 N68-15324

ty factors for embedded Stresses and stress is perbolic and paraboli 09 p1440 N68-18522

PARABOLIC ANTENNAS

Tuning large anten with methods of anter natural cosmic radio ter measurement using sources in far zone for radio astronomy ob IFTD-HT-67-3091 02 p0180 N68-11233

Polarization prope [MTP-52] 09 p1301 N68-18332 le truss anti Large space per

NASA-CR-938371 10 p1300 N68-20267

design for Apollo app [NASA-CR-93833] 10 p1500 N68-20304 Gain measurements of horn antennas for use in parabolic radio telescoper [NASA-CR-93969] dard electromagne ting millimeter wa

"11 p1660 N68-20846 Design criteria for positi atmospheric turbulence rns, and potential faults on fixing equipment, effect on antenna radiation pat-n parabolic tracking anten-

[BMWF-FB-W-67-29] 11 p1786 N68-21727 [TN-1968-7] 13 p2031 N68-24298

customatic tracking by comparing amplitudes of ignal captured by four sources positioned in focal lane of parabolic reflector. 14 p2220 N68-24358

nulysis for radome protected steerable radio with parabolic antennas (ESD-TR-68-19) 15 p2427 N68-26298 led antenna experiment

Proposed modul for S-4B Workshop 16 p2625 N68-27918 nical characteristics of

ennas 16 p2626 N68-27933 al scanning system

16 p2626 N68-27940 evolength systems for ions - high precision and earth atmosphere

17 p2853 N68-29110 Apollo Applications Program parabolic entenne ex-periment to evaluate large space structures and ex-travehicular activities [NASA-CR-90557] 17 p2856 N68-29540

17 p2856 N68-29540 Radio frequency interfere antenna as function of eleval [SRDE-67004] ce and soise of parabolic in and azimuth angles 18 p3037 N68-30442

olic dish as on characteristics of para [JPRS-46240] 20 p3439 N68-33222

Approximate formula for determ onable in large parabolic antenna ining cost-gain rela-21 p3662 N68-34808

Causes and methods for improving signal to no characteristics of reflector antennas (BMWF-FB-W-68-49) 22 p3838 N68-357 22 p3838 N68-35710

frequency radio ast INASA-CR-12011 24 p4345 N68-37900 Dielectric rod antenna fei eds for improved use of

parabolic antenna (REPT.-67003) 24 p4226 N68-38022

PARABOLIC BODIES

Methods for solution of I flow of viscous incompress tending indefinitely downst [ONERA-TP-505] er-Stokes equations for fluid around body ex-02 p0202 N68-11890

enry of single and mul-hells 09 p1444 N68-19179

Second order compre applied to blunt bodies us [AEDC-TR-68-57] coundary layer theory te difference scheme 13 p1989 N68-24171 Parabolic body a dimensional hyperson [ARL/A-298]

23 p4048 N68-36562 PARABOLIC DIFFERENTIAL EQUATIONS

Approximation method (problem of quasi-linear para [TG-230-T532] olving boundary value ic systems 06 p0861 N68-15294 Reflection formulas for solutions of elliptic and arabolic equations of second order in independent

13 p2094 N68-23569 ralized solutions of li ear elliptic and parabolic

16 p2694 N68-27245 Convergence of grid po arabolic differential equa projection method using NASA-TT-F-118151 18 p3107 N68-30632

e problem for parabilic 20 p3516 N68-33117

Heat and mass trums ined by modificar 0 p3612 N68-33352

Finite Borel measures for quation on Hilbert space as solution to parabolic

Total plane depletion by ground surface absorption calculated via one dimensional parabolic different equation 24 p4290 N68-38422

PARABOLIC PLIGHT 04 p0461 NEE-13198

PARABOLIC REFLECTORS

Approximation theory for extending Roam flat flector theory to deep reflectors with nonuniform indeviations 03 p0319 N68-11924

PARABOLOID MIRRORS Lunar craters as parabolic reflectors for radio as-08 p1236 N68-17353 Electromagnetic fields in focal region of paraboloid flector calculated from Debye-Picht-Luneberg diffraction integrals [AFCRL-67-0486] 08 p1148 N68-17914 (NRL-6628) 09 p1302 N68-18380 Parametric analysis of effects of concentrator sur-face errors and rim angle, collection system orientation error, and receiver temperature on paraboloid solar collector thermal officers. collector thermal effic [NASA-TN-D-4415] 09 pl276 N68-18998 Haystack antenna reflector s [TN-1968-7] rface improvement 13 p2031 N68-24298 utomatic tracking by comparing amplitudes of al captured by four sources positioned in focal-e of parabolic reflector 14 p2220 N68-24358 sility development of self-deploying elec-etic energy focusing reflector for space or table ground based operations 16 p2625 N68-27929 Unfolding antenna with mechanical scanning system for satellite applications 16 p2626 N68-27940 Determining primary illiproducing maximum figure of tor, and multimode optimize mary illuminance distribution for m figure of merit of parabolic reflec-optimization applied to Cassegrain (TIL/T-5748) 17 p2848 N68-28363 ication system for multiple aperture an-[TR-1124 19 p3239 N68-31406 PARABOLOED MIRRORS [TN-1968-7]

Scatter plate interferometry for testing of paraboloidal and ellipsoidal mirrors for large high resolution photographic telescope flown by balloon at high al-07 p1001 N68-17205

13 p2031 N68-24298 Performance of expandable w restrator for space p energy concentrator for [NASA-TM-X-59872] wer conversion 16 p2593 N68-27564

nce of expen hirling membrane solar [L-3484] 16 p2594 N68-27926

Techniques for coating m sium with epoxy resin films for paraboloid is [NASA-TN-D-4734] 18 p3100 N68-30597

PARABOLOIDS

U PARABOLIC BODIES PARACHUTE DESCENT

Parachute drogue trajectories lentifying data tables, wind obseuter programs used in processing puter programs used in ocean currents off Oreg (REPT.-26) 10 p1522 N68-20019

Flight test of 10-foot nominal-diameter disk-gap by parachute to determine deployment and inflati-opening shock loads, drag efficiency, and stabil characteristics [NASA-THI-X-1575] 13 p1993 N68-242

13 p1993 N68-24245 Parachute expulsion tests meteorological projectiles in si (ECOM-5179) ts of gun launched Sabot n simulated environment 15 p2464 N68-26841

Scale factors verific [NASA-TN-D-4665] al drop tests 19 p3200 N68-31956 de airdrop system with towed

Feanibility of low aiti TR-68-55-AD] 21 p3622 N68-33676 ion of p e deployment environ

Mary atmosphere (NASA-TM-X-61217) 21 p3774 N68-34769 olling peract

(NASA-TM-X-61215) 21 p3774 N68-34772 der maps for parametric data, entry parachute subsystem used in Mars hard

lander study [NASA-CR-66678-3] 22 p3967 N68-35982

PARACHUTE FARRICS.

(NASA-CR-66590) 10 p1459 N68-20320 n of parachute fabric 18 p3178 N68-30164

INASA-CR-923531 24 p4272 N68-37936

PARACHUTES NT DRAG CHUTES

NT RECOVERY PARACHUTES NT ROTOCHUTES

Flight tests of ringsail parachute with 15 percent porosity, for planetary entry [NASA-TM-X-1484] 03 p0416 N68-11919

Flight test of conical sp deployment in Mars atmo [NASA-TN-D-4266] lating parachute 03 p0416 N68-11961

intics of disk gap band ity Mars atmosphere 04 p0584 N68-13797 Inflation, and drag operachute in simulated [NASA-TM-X-1499]

inflation, drag, and st teristics of ringsail paracliste deployed in: NASA-TM-X-15001 05 p0742 N68-14092

ign, and drop tests for [NASA-CR-91905] 06 p0766 N68-15425

Flight test of 30 foot nominal diameter cross arachute to measure shock loads, drag efficiency, and [NASA-TM-X-1542] 11 p1790 N68-21778

Inflation and drag ch in simulated Martian en [NASA-TM-X-1543] racteristics of cross parachute 11 p1790 N68-21833

Flight test of IO-foot nominal-diameter disk-gap ba arachiate to determine deployment and inflati-pening shock loads, drag efficiency, and stabil horacteristics.

Characteristics [NASA-TM-X-1575] 13 p1993 N68-24245 Wind tunnel studies of static teristics of multilobe gliding para [NASA-TN-D-4672] tic aerodynamic charac-

17 p2801 N68-28447 Stress analysis and functions in membrane analysis of scalloped thin walled shells like parachutes [NASA-TN-D-4687] 17 p2981 N68-28832

Flight test of 40 foot parachute deployed at low supersonic speed and dynamic pressure [NASA-TM-X-1623] 18 p3169 N68-29993

PARACHUTING U PARACHUTE DESCENT

PARAFFINS

08 p1255 N68-17544

Molecular transport with systems of gaseous parafilm and convective transport from single cylinders, single spheres, and arrays of spheres into turbulently flowing styrems.

17 p2985 N68-28620 ing density in liquid paraffins and alcohols [RTS-4364]

based sintered material m of copper ba 22 p3881 N68-34844

High temperature tests to determine fatigue life of 120mm bore ball bearings with fluorocarbon, polyphenyl ether, and synthetic base paraffin base lubricants [NASA-TN-D-4850] 23 p4066 N68-36075

on in paraffin by counic rays 23 p4164 N68-37235 Gamma ray producti (NASA-CR-97253)

PARAGLIDERS

NT FLEXIBLE WINGS

NT INFLATABLE GLIDERS

NT PARAWINGS

rocket by paragliders 21 p3778 N68-34171 Guided recovery of a (BMWF-FB-W-68-26) erable sounding rocket

Reliability analysis for re-with flexible wings [BMWF-FB-W-68-32] 21 p3778 N68-34206 U SOLAR PARALLAX

PARALLEL PLATES

Steady state flow of anisotropically conductive quids between parallel porous walls 62 p0256 N68-11683

Heat transfer and density di for rarefied gases contained b transition regime [PUBL.-67-5] istribution measurements setween parallel plates in 03 p0427 N68-12488

Rarefied gas dynamics is m parallel plates and in 09 p1330 N68-19257

Hydrodynamic stability of incompress ow developing in parallel plate channel sible, laminor 10 p1516 N68-20200 tern analyzed by surface integru [NASA-CR-1052] ion technique 12 p1844 N68-22746

Conducting flap effects on reflection coefficient of parallel-plate wavego NASA-CR-66621 sting conducting sheet 13 p2027 N68-23478

Rarefied gas couette flow an parallel plates analyzed by mod [NASA-TN-D-4579] d heat transfer between sampling procedures 13 p.2055 N68-24129 Nonsteady fluid flow between

two parallel plates 14 p2242 N68-25076 e parallel plate broadband antenna for spacecraft com [NASA-TN-D-4555] 15 p2423 N68-25918 Theory for ionized gas flow through parallel plate, onlineum, electrostatic probe

16 p2738 N68-27843 Reflection coefficient of ground-plane mounted transverse electromagnetic mode parallel-plate waveguide illuminating conducting sheet [NASA-CR-66635] 16 p2625 N68-27899

High temperature parallel thermal conductivity of potas [COO-1352-28] rallel plate cell for measuring im vapors 16 p2665 N68-28185

OO-1352-26)
New class of low loss reactive wall waveguides
20 p3451 N68-32650

Determination of yield stress in parallel plate plastic ERDE-14/R/67) 21 p3757 N68-33979

Reflectance of wedge angle parallel plate waveguides transverse electromagnetic mode illuminating reflecting sheet [NASA-CR-1174] 22 p3833 N68-35172

Mutual coupling in three waveguide array calculated by surface integration techniques element parallel-plate wedge diffraction and 24 p4221 N68-37441

PARALLELEPIPEDS Free vibration of rectangular parallelepiped with traction free boundary calculated by infinite matrix

24 p4273 N68-37430

PARAMAGNETIC AMPLIFIERS U MASERS

PARAMAGNETIC RESONANCE

NT ELECTRON PARAMAGNETIC RESONANCE

Equations for localized magnetic moments by tramagnetic resonance as applied to dilute magnetic

alloys [NYO-2150-38] 01 p0125 N68-10700 chanisms of solvent exchange reactions tetal ions in solution Rates and mech

[AFOSR-67-2387] 02 p0176 N68-11362 naries on spectroscopy of crystals and topics in solid (AD-661330)

04 p0558 N68-13449 Electron paramag radiative defects in in [FTD-HT-67-426] nce for determining alline quartz 06 p0894 N68-15522

High frequency paramagne ter development and applicanalyses of selected materials [AFOSR-68-1002]

18 p3072 N68-29816 Crystal defects and atomic structure, from paramag-etic resonance data, correlated with luminescence AFOSR-68-0956)

18 p3154 N68-30351 Generalized susceptibilities alculated for rare earth elemen and magnetic ordering 23 p4159 N68-37325 [IS-T-226]

PARAMAGNETISM

Orbital paramagnetism in superature dependence of electron erconductors, and tem-10 p1583 N68-20508

Ferrimagnetism of manganese cobalt carbide, and aramagnetic neutron scattering in chromium tribro-10 p1583 N68-20509

ical explanate Theoretical expla caused by spin-phot (FTD-HT-66-567) etic phar

11 p1776 N68-21714 Crystal and lattice structure, and magnetic proper-ties of Cr alloys and transition metal binary alloy

18 p3151 N68-29929

Thermal diffuse X ray scattering mean evidence for destruction of parts of pa Fermi surface of chromium upon transition romagnetic state 23 p4147 N68-36117

AFCRL PARAMET definite s Data s tion in fr Mathe non-line

NASA-Fermio to superc

Matrix

for autor ments co Relativ

AD-671 Subaya rations fo [NASA-C Optima NASA-C Parame AEEW-

NASA-C Optima

tions and puter cod UCRL-7 of propor operator manual co

Linear mination [NASA-C PARAMET U INDE PARAMET Parame quid fille

MSC-TR Magnet tation o SRRC-C

Noise ure range ric amplifi DEX

m pat-

22746

ent of

23478

24129

25076

dband

25918

plate,

27843

27899

suring

18185

2650

lastic

1979

15172

plate and

7441

with

7430

NCE

by

0700

tions

1362

and

3449 ining

5522

9816

mag-

3351

7325

1508 and bro-

509

714 per-

929 its -setic ifer-

117

Operators derived for electrical and optical proper-[AFCRL-68-0363] 23 p4151 N68-36490 PARAMETERIZATION Numerical analysis on set elements for positive definite symmetric matrices by parameterization [NASA-CR-61402] 04 p0531 N68-13614 Data smoothing technique for parameter optimiza-tion in free flight orbit vehicle-borne tracking systems [NASA-CR-91809] 05 p0739 N68-14733 Mathematical models for parametrization of absorp-tion-line profiles [NASA-CR-93353] 08 p1216 N68-18128 08 p1216 N68-18128 Matrix method for predicting singular lines in parameter plane [NASA-CR-73204] 10 p1546 N68-19746 Fermion trajectory properties of the superconvergence [IC-67-30] 12 p1924 N68-22221 Parametric approac in multi-Regge model ch to study of total cross sections 17 p2943 N68-29489 Joint nonlinear estimation of state and parameters for autonomous linear system based on finite measurements containing noise

19 p3255 N68-31179 Relativistic equation for dynamic calculations of pseudoscalar and axial vector meson parameters [AD-671201] 19 p3329 N68-31302 Subsystems analyses and parametric data on configu-rations for direct versus orbital entry for Mars missions [NASA-CR-66664] 19 p3367 N68-31836 Optimal adaptive filter for sampled stochastic processes with unknown parameter [NASA-CR-96374] 20 p3454 N68-33163

Parameter estimation from Dragon high temperature gas cooled reactor dynamic experiments [AEEW-R-571] 20 p3534 N68-33386 Liapunov functions and Gronwall theorem to prove stability of parametrically excited differential equations 21 p3710 N68-33623

Parameter plane analysis of forced oscillations and jump resonance phenomena in nonlinear systems [NASA-CR-89189] 21 p3671 N68-33685 Optimal control for linear systems with lumped parameters 21 p3675 N68-34685 Geometric analysis of parameterized dynamic problem in general relativity

21 p3733 N68-34726 Parametric variation of Astron variables - modifica-ons and extensiones of one dimensional RESIST computer code [UCRL-70675] 22 p3845 N68-35949

Reliability evaluation of parameter tracking version of proposed crossover model for measuring human operator performance in low order compensatory manual control systems 23 p4001 N68-36304

Linear parameter combinations for lunar orbit deter-[NASA-CR-73265] 23 p4168 N68-36625

PARAMETERS U INDEPENDENT VARIABLES

PARAMETRIC AMPLIFIERS

Parametric oscillations of longitudinally excited fiquid filled cylindrical shell 04 p0590 N68-13732

Superconducting parametric amplifier to measure small dc voltages in low impedance circuits 05 p0636 N68-14465

Plasmons, quasi-particle excitations, inductance of superelectrons, and gain and inductance advantages for parametric amplification 05 p0701 N68-14466 Optical parametric interaction in ammonium (MSC-TR-21) 07 p1005 N68-16735

Magnetoelastic wave amplifier using parametric ex-citation of spin waves by traveling phonons in fer-[SRRC-CR-67-51] 07 p0975 N68-16804

Noise performance of thin magnetic films in parametric amplifier operating over extended tempera-ture range 11 p1672 N68-20792

Theoretical nonlinear distortion in varactor parametric amplifiers (R67ELS-37) 13 p2040 N68-23979

Continuous wave voltage tunable optical parametric sociilator design with monobasic potassium phosphate (UTEC-MD-68-035) 15 p2478 N68-26648

Low soise parametric natural resonance amplifiers with large bandwidth (TRANS-2437) 20 p3451 N48-32917

Development and operating characteristics of tuna-ble visible continuous wave optical parametric oscilla-

[NASA-CR-96724] 21 p3700 N68-34255 PARAMETRIC DIODES

Electronic equipment for generating diode functions of computed variables for analog computer [AEEW-M-749] 15 p2437 N68-26794 PARAMETRONS

Excitation of parametric oscillators, amplitude of oscillations under steady-state operating conditions, and power relationships in parametrons
06 p0817 N68-15259

Nonstationary processes in parametrons with capacitance of p-n junctions 06 p0817 N68-15260

Form and duration of transients occurring in arametrons used as computer memory devices 06 p0818 N68-15261

PARAPSYCHOLOGY
U EXTRASENSORY PERCEPTION

PARASITIC DISEASES

Interpretation of aerial photographs for control and scalization of Glossina moreitans testes By 840] 05 p0657 N68-14006

Design, and serodynamic evaluation of recoverable high altitude sounding rocket models with flexible parawings 05 p0602 N68-13983

Scale factors verification for parawing opening characteristics using experimental drop tests [NASA-TN-D-4665] 19 p3200 N68-31956

Accurate methods for predicting longitudinal aerodynamic characteristics of two-lobed conical parawings with leading edge booms [NASA-CR-1166] 21 p3617 N68-33765

Deployment characteristics of dynamic and elastic parawing scale model for spacecraft recovery [NASA-TN-D-4724] 21 p3623 N68-33879 PARITY

G-parity violating decay mode using current algebra

01 p0115 N68-10880 Gamma ray production cross sections, angular dis-tributions, nuclear spins, and parities [ORO-2791-26] 02 p0246 N68-11509

SU-3 complex for boson resonances quarks of two mixed nonests with same spin and parity and opposite charge conjugation (ISS-87/36) 02 p0249 N68-11820

K sigma N parity determine polarized protons as target [UCRL-17230] d using crystal containing 03 p0392 N68-12517

Nonorthogonality of long and short lived neutral kaon states and phenomenological analysis of experi-ments on charge parity violation in neutral kaon decay (NEVIS-163) 05 p0707 NoE-14169

Monthauer effect used in symmetry experiments to test parity conservation in 14 keV transition in iron 57 [BNL-11696] 07 p1046 N68-16614 Eta-meson decay to three pions a ns and PCAC violation 11 p1758 N68-21765

Possibility of testing charge-parity-time invariance [JINR-P2-3622] 12 p1940 N68-22899

CP violating weak currents [ISS-64/3] 13 p2117 N68-23651 Spin and parity calculations for meson production in

COO-1195-110) 14 p2305 N68-24680 System of two pi meaons and disintegration of neutral K meaons related to discrete symmetries of TCP or time reversals (TM/68/72) 14 p.2320 M48-24408

Collective effects in spherical nuclei, parity deformation, theory of direct reactions, and alpha nuclei 15 p2513 N68-25749

Determining parity-nonconserving nuclear force by capture of polarized thermal 5-neutrons (RISO-167) 15 p2521 N68-26518 Variational techniques to calculate even parity rota-onal bands in oxygen 16 16 p2724 N68-27837

Polarization experiments of T and CPT invariance at in nucleon nucleon and nucleon autimations

[JINR-P2-3716] 16 p2726 N68-27954 luctear wave functions of Hartree-Fock single parti-orbitals with undefined parity as applied to nuclear ctions and elastic electron scattering in carbon 12 reactions as nuclei (IC-68-17) 17 p2929 N68-28707

Sum rules and parity conserving amplitudes in pole model for non-leptonic and weak electromagnetic decay of buryons in SU/3/ and SU/6/

5U/e/ 17 p2931 M68-28910 os in bolium studied using cattering 17 p2932 M68-28976 Negative parity excited a inelastic deuteron and alph (KFK-679)

Erbium low energy spin parity assignments, neutron single particle states of curium plutonium uranium isotopes, and charged particle blocking in single (ANL-7405) 17 p2933 N68-29023

a of charge parity violating

19 p3329 N68-31353 Zero/4/ symmetry and effects of particle interactions

[RUP-68-4] 19 p3337 N68-32130 Charge parity and time invariance in weak radiative

decays [JINR-P2-3743] 20 p3546 N68-32993 Calculated parity violating sucleon-nucleon potential due to pion exchange

21 p3737 N68-34015 Conference on SU/3/ related to particle coupling, locay rate predictions, scattering amplitude, parity, and unin reactions and spin reactions (CONF-670725) 22 p3919 N68-34825

SU/3/ and strong decays of baryon resonances re-lated to systemization of baryon spectrum based on parity and spin states 22 p3920 N68-34828

Checking automats and ene-way stack languages [SDC-TM-738/045/00] 22 p3844 N68-35582

Nuclear structure, and spin and parity assignments of various nuclei 23 p4117 N68-36578

Charge parity noninvariance, electromagnetic in-teractions, and field current identities [NYO-1932/2/-127] 23 p4125 N68-36966 Decays of odd parity baryon resonances
23 p4127 N68-37020

CP violation in kaon decay and mass matrix, unitarity, and eigenstates of kaon-antikaon system 24 p4308 N68-37541

invalidity of TCP theorem for infinite component

[JINR-E2-3854] 24 p4318 N68-38086 PARKING ORBITS

Error analysis during transfer and lunar parking orbit phases of IMP eatellite [NASA-TM-X-63024] 04 p0571 N68-12888

Indepersorbet engine for trust orbit and twenty-four hour orbit [ELDO/SP/67/18] fer between parking 04 p0565 N68-13549

Computing optimal payload for orbit transfer from near earth parking orbit to syschronous orbit by mochar electric propulsion system
(DLR-FB-67-86)

16 p.2770 N68-28270

Planetary gravitation and obli-orbit alignment in Mars mission [NASA-TN-D-4657] ess used for parking 17 p2966 N68-28408

Orbital transfer from lo w altitude purking orbits to microthrust from electric RAE-TR-672491 18 p3162 N68-29743

Computer program for calculating transfer time and feel mass required during transfer from low equatorial orbit to geostationary orbit using electric propulsion (RAE-TR-48029, PT. 3)

18 p3163 N68-296

Data collection and transmission system for poster-tionary operational environmental sanita [TER-1298] 20 p3593 N64-32727

TER-1331

PARTIAL DIFFERENTIAL EQUATIONS

NT BHARMONIC EQUATIONS

NT BURGER EQUATION

NT FORKER-PLANCE EQUATION

NT GAUSS EQUATION

NT HELMHOLTZ VORTICITY EQUATION

Effect

intensity beams proget GeV (DESY-

and accu

(SC-RR-

Particl

Neutre to deter

[GA-80]

Target

Angul

(RHEL/

electroni [NASA-

Horizo

Thin 1

Triti

Use of

NP-173

Protos bon targ

Carbo

barding um targe

Produ

from pro

Effici

DESY-

PARTICL

NT BI NT C' NT C' NT EI NT LI NT NI NT NI NT SY NT SY NT SY

Effec

ing elec

Calcu

JINR-I

(SLAC

[AED-

Expe breakup [SLAC

motion [JINR-

Ener GeV by [UCRL

Oscil

PARTIAL PRESSURE NT LIOUVILLE EQUATIONS
NT MONGE-AMPERE EQUATION
NT PARABOLIC DIFFERENTIAL EQUATIONS NT VLASOV EQUATIONS Solutions for systems of ordinary differential equations into which partial differential equations of heat conduction are split by discreting space but not time (SAAB-TN-63) 01 p0151 N68-10539 Stefan problem and theory of fusion and burning of 04 p0595 N68-13293 IFTD-MT-65-2671 Principal boundary value problems with homoger us and inhomogeneous limited conditions at infin-olved for linear elliptic partial differential equation ish three independent variables 04 p0530 N68-13338 ion procedures classified for turbulent boun-problems - integral equations for solving pardary layer problems - inte tial differential equations 05 p0647 N68-14107 [TWF/TN/27] Numerical solutions for systems of ordinary and non-linear partial differential equations for simultaneous chemical seaction and convective diffusion of steam and hydrogen through graphite [R-1724] 05 p0619 N68-14118 Uniqueness theorem for partial differential equation and representation of potential scattering operator [MRC-T3R-783] 06 p0863 N68-15533 Uncertainty analysis for designing calorimetric ex-eriments, and equations for measuring properties of planetary radiation [NASA-TN-D-4354] 07 p0997 N68-16529 Numerical stability of partial differential equations in initial value problems 09 p1364 N68-19116 High speed Monte Carlo method for hybrid con-uter solution of elliptic and parabolic partial dif-rential equations 09 pl312 N68-19313 Differential dynamic programming to develop second order and first order approximation methods for determining optimal control [NASA-CR-93690] op p1321 N68-19388 Analytical and numerical solutions of partial dif-rential equations for effect of viscosity on transonic 10 p1455 N68-19732 [AROD-3537-5-E] Partial differential equation and numerical solution or explosion between two hollow coaxial cylinders BRL-R-1381] 10 p1612 N68-19794 Optimal control problem for distributed parameter systems defined by scalar parabolic or elliptic partial differential equations 11 p1675 N68-20583 Unsteady radiative heat transfer in nonscattering grey plane parallel layer with black boundaries
11 p1801 N68-20591 Asymptotic solution of partial differential equations in thin domains 11 p1722 N68-20641 Partial differential equation of perturbation velocity solved for unsteady flow downstream of oscillating wind tunnel walls [D1-82-0703] 11 p1682 N68-20758 11 p1682 N68-20758

Nonlinear system of partial differential equations for determining dynamic stability of plate

11 p1794 N68-20918 Formulation of general equations of linear thin shell heory in terms of complex combinations of dependent One dimensional time-dependent equation of heat onduction solved for infinite three layer hollow cylinder (NWEF-1014) 11 p1806 N68-21774 [NASA-CR-89179] Coupled, first order partial differential equations in-volving particle current density and particle density for calculating high frequency effects on charge transport Structural transient characteristic metho [NASA-CR-66691] 12 p1952 N68-21957 Formulation of Liapunov functions from partial dif-rential equation [NASA-TM-X-61182] 13 p2093 N68-23405 Lie transformation group for solution of partial dif-Perturbation of Cauchy linear partial differential equation with constant coefficients 23 p4087 N68-36236 ferential equations [NASA-CR-61217] 13 p2094 N68-23480 Partial differential equi insient temperature distri tindrical fuel rods and com equations for calculation of distribution in reactor core with NT OXYGEN TENSION urbie coolant 14 p2288 N68-24450 [AE-315]

14 p2281 N68-25081

14 p2228 N68-25171

System design and programming for Illiac 4 com-ster, and application to solution of partial differential

Frobenius method solution of fundamental partial differential equations for conical shells with constant wall thickness subjected to edge loads 15 p2566 N68-25898 Fourier series linear homogeneous partial dif-ferential equations for cylindrical shell stability 15 p2567 N68-25900 Partial differential analysis for harmonic boundary value problems containing reentry corners [MRC-TSR-829] 15 p2492 N68-26383 Computer program for numerical solution of hyper-olic partial differential equations by method of [NOLTR-68-7] 15 p2495 N68-26769 Lispunov stability theory applied to class of partial differential equations, and generation of contraction groups related to equivalent norms [NASA-CR-1100] 16 p2695 N68-27457 Liapunov stability theory generalized and applied to class of partial differential equations 16 p2696 N68-27458 Singular solutions of linear partial differential equa-tions for loaded shallow shells with stress measure-ments and displacement data given 17 p2980 N68-28759 Semidiscrete partial differential equation for one dimensional linear conductive heat flow in solids [SAAB-TN-63] 18 p3188 N68-30300 Proof of eigenvector convergence obtained by method of finite differences [TG-230-T549] 18 p3106 N68-30414 Iterative solution of partial differential equations in boundary value problem [PB-177339-1] 19 p3198 N68-31032 Finite difference solutions to system of dispersive nonlinear partial differential equations [IPPJ-68] 19 p3342 N68-31682 Computer solution for partial differential equations for p-n diode dynamics 20 p3563 N68-32345 Partial differential equations describing water hammer reduced to time difference equations for using analog computers in surge analysis [SP-921] 20 p3459 N68-32425

Partial differential equations for gravitational col-

14 p2347 N68-25224

lapse of neutron stars (UCRL-TRANS-10206)

Application of extended Kantorovich method to eigenvalue problems in partial differential equations [NYU-AA-67-116] 20 p3601 N68-32610 Applications of operator theory and partial dif-ferential equations [AFOSR-68-1579] 20 p3514 N68-32696

Priori estimate and qualitative for elliptic and parabolic equatio [APL-CLB-3-T-545] ative properties of solutions 20 p3514 N68-32821 Method of integral relations applied to solution of in-compressible turbulent boundary layer equations [NASA-TM-X-61169] 20 p3465 N68-33195

Simplified method of solving partial differential equations for hybrid computer simulation of single tube heat exchanger [RISO-M-736] 21 p3791 N68-33626 21 m3791 N68-33626

Taylor series solution of partial differential equations classified as Cauchy problem 21 p3712 N68-33972

21 p3788 N68-34036 response calculated using 21 p3789 N68-34136 Numerical solution of hyperbolic equations by 21 p3713 N68-34282

Theoretical temperature and electro density profiles of E and F ionospheric regions [NASA-TM-X-63345] 22 p3956 N68-35750

Chemical potentials and partial pressures of ternary two phase system components with isothermal-isobaric change in composition [PA-TT-67] 03 p0313 N68-12438 Crossed-beam spectroscop etection of local temperatu spectroscopy technique for remote temperature and partial pressure in 08 p1164 N68-18098 Hyperoxia at near-normal partial pressures in rela-tion to spacecraft cabin atmospheres during long-dura-tion space flights

10 p1467 N68-20162 Hypersonic wind tunnel measurements of partial pressure on flat plate with positive and negative angles of incidence [REPT.-67-10] 12 p1810 N68-22012 Partial pressure measurement of ruthenium tetroxide over ruthenium dioxide as function of oxygen partial

IN-1013] 12 p1836 N68-22474 Solution of breakdown problem at partial pressures in Apollo LEM transceiver

15 p2445 N68-26892 Solid state galvanic cells for determining partial pressure of oxygen over three phase mixture uranium monosulfide, uranium oxysulfide, and uranium dioxides at high temperatures 17 p2837 N68-28453

Product development and testing of thin film oxygen partial pressure sensors [NASA-CR-1182] 22 p3875 N68-35149

PARTICLE ACCELERATION

Particle acceleration by evaporation pressure using 01 p0072 N68-10467 Atmospheric model for high energy particle ac-celeration in plasma turbulence [NASA-CR-90213] 01 p0121 N68-11000

Consequences of hydromagnetic turbulence theory on particles and fields phenomena in magnetosphere [TR-0158/3260-20/-3] 04 p0499 N68-13133 Medium energy synchrotron guide magnet configu-tion for acceleration of all charge to mass ratios from

0.04 to 1 [UCRL-17869] 05 p0642 N68-14333 Strong focusing ring cyclotron for multicharged ion [JINR-P9-3443] 05 p0645 N68-14708

Adjustment of acceleration conditions and beam arameters of linear strong-focusing proton accelerator

09 p1322 N68-18482 Transport and acceleration of particles as result of electric and magnetic disturbances [REPT.-68-04] 10 p1588 N68-20442

Design and performance of multiple acceleration system resonator in synchrophasotron
[ANL-TRANS-460] 12 p1855 N68-22444

Magnetic field gradient modifications for U-120 cyclotron to allow acceleration of helium 3 ions [UJV-1898] 12 p1930 N68-22583

Soviet and United States technological advances in charged particle accelerators, and acceleration methods based on electron plasma properties 14 p2234 No8-24603

Evidence for particle acceleration on galactic scale and on radio galaxies observations and radio emission from quasars [NASA-CR-84764] 16 p2753 N68-27390

Linear heavy ion accelerator with beam focusing by accelerating field [BNL-TR-177] 17 p2869 N68-29119

Feasibility and design considerations for 1000 BeV roton accelerator using cybernetic control of mag-etic field proton accelera netic field [JPRS-46039] 19 p3258 N68-31009

Crater characteristics produced in metal targets by iron microparticles at velocities of 0.5 to 10 km/s [NASA-TT-F-11890] 22 p3974 N68-35737

Particle acceleration within turbulent region for analysis on fluctuation origin of cosmic radiation [NASA-CR-97142] 23 p4162 N68-36131 Survival of heavy nuclei in Colgates supernova cosmic ray acceleration model [NASA-TM-X-63363] 23 p4164 N68-37233

PARTICLE ACCELERATOR TARGETS

Electron shielding - comparison of thick target energy straggling and angular distributions with Monte Carlo calculations [NASA-CR-89966] 01 p0112 N68-10702 01 p0112 N68-10702 K sigma N parity determ polarized protons as target [UCRL-17230] ned using crystal containing s as target 03 p0392 N68-12517

Targets with long lifes for sealed miniature ion accelerators for neutron production (KN-67-655/R/) 0 05 p0644 N68-14575 Uses and limitations of solid targets in atomic scat-

07 p1045 N68-16576

A-884

(REPT-256)

2474 aures 6892

8453 ygen 5149

ac-000 eory 133 igu-rom

708 am 182 t of 142

03 ale

V by 17

pres-nium diox-1467 333 ion

ion 144 20 by 19

8

DEX 20162 partial angles 22012 oxide

SUBJECT INDEX Effects of target thickness and collimation angle on intensity and spectral distribution of bremsstrabbung beams produced by electrons with energies from 1 to 6 GeV [DESY-67/29] 08 p1211 N68-17221 Absolute determination of 14 MeV neutron yields, and accurate techniques for establishing optimal target assembly of alpha particle detectors (SC-RR-67-346) 99 p1386 N68-18473 Particle accelerator beam spill control (PPAD-620E) 10 p1511 N68-19558 Neutron yield studies in accelerator-booster targets to determine feasibility of electron accelerator as neutron source for fast pulsed research reactor [GA-8087] Target mechanisms, extracted proton beams, and operation of Nimrod accelerator [RHEL/R-153] Angular and energy distribution measurements of electrons transmitted through thick silicon targets [NASA-TM-X-60492] 14 p2316 N68-25285

Horizontal cryostat for polarized proton targets [CEA-R-3172] 14 p2239 N68-25549 Thin target Born approximation for deriving thick target spectrum differential expression in photon energy and emission angle 15 p2552 N68-26141

Tritium to helium 3 decay effects on crystal struc-tures of tritide targets for neutron generators [NP-17412] 17 p2932 N68-28942

Use of gas targets in particle accelerators in deuteron combardment of neon 20 and neon 22 NP-17333] 17 p2936 N68-29209 Angular distribution of polarized proton beams scat-tered from oxygen cyclotron target 18 p3127 N68-29734

oton and neutron scattering on deuterium and car-20 p3546 N68-33050

Carbon 14/proton, alpha/boron 11 reaction at bom-barding energies from 2 to 3.6 MeV, and tritium titani um target degradation 21 p3733 N68-33693

Production of negative kaons and negative pions om protons incident on copper and uranium targets LPP/H-28] 23 p4124 N68-36901 [RPP/H-28]

Efficiency of bren astrahlung production on internal synchrotron target [DESY-68/24] 23 p4133 N68-37195

PARTICLE ACCELERATORS BEVATRON

CYCLIC ACCELERATORS
CYCLOTRONS
ELECTRON ACCELERATORS

NT ELECTRON ACCELERATORS
NT LINEAR ACCELERATORS
NT MICROTRONS
NT NUMBOD ACCELERATOR
NT OAK RIDGE ISOCHRONOUS CYCLOTRON
NT SYNCHROCYCLOTRONS
NT SYNCHROCYCLOTRONS
NT SYNCHROTRONS
NT SYNCHROTRONS
NT SYNCHROTRONS
NT VAN DE GRAAFF ACCELERATORS

Effect of magnetic field gradient local inhomogeneities on particle motion in space variation accelerators [JINR-P9-3434-1] 01 p0108 N68-10482

Effect of crossing angle on interaction rate of collid-ing electron beams in Princeton-Stanford storage ring on-Stanford storage ring 01 p0111 N68-10660

Calculation method for stray accelerator radiation fluxes of varying energies (JINR-P9-3402) 01 p0112 N68-10751

Oscillating beam transverse resistive instability in circular particle accelerators and storage rings [SLAC-76] 01 p0113 N68-10794 Bibliographies on particle accelerators [AED-C-18-09] 03 p0375 N68-12468

Experimental, and theoretical analyses of beam breakup effect in linear accelerator [SLAC-PUB-350] 04 p0491 N68-13755

Construction parameters of proposed 15 meter drogen bubble chamber for 300 GeV accelerator 05 p0642 N68-14294

Magnetic system current coils for strong focusing cyclotron in study of space charge influence on proton (JINR-P9-3448) 05 p0644 N68-14599

Energy expansions of 200 GeV accelerator to 400 GeV by adding superconducting synchrotron [UCRL-17862] 07 p0982 N68-16648 m of acceleration electrodes for OB p1157 N68-17674

Particle accelerator structures, power sources, ac-celerator control and instrumentation, accelerator physics, and project scheduling and facilities planning [LA-3772-M5] 99 p1324 N68-19373 numentarion ng and facilities planning 09 p1324 N68-19373

Particle accelerator beam spill control [PPAD-620E] 10 p1511 N68-19558

Addition of corrosion inhibitors to RF cooling water circuits of high energy particle accelerators [CERN-68-2] 10 p1481 N68-19621

[CERN-68-2] High energy physics, bubble chamber operations, computer programs and data processing techniques, and accelerator operations [UCRL-17544] 10 p1570 N68-20350

Heating of air by means of Townsend discharge heating of working fluid of hypersonic wind tunnels [ARC-R&M-3519] 11 p1804 N68-21355

Biological effects of particle accelerator radiation dose in humans and animals - somatic and genetic responses, physical factors, health and safety measures, and radiation shielding [CONF-670305] 12 p1831 N68-21951

Radiobiological effects of high energy particle ac-derator on human and mammal cells

12 p1821 N68-21952 Performance characteristics of superconducting multistage accelerator [BNL-12060] 12 p1855 N68-22570

Historical review of accelerator research at CERN -1956-1967 13 p2048 N68-23616

Electromagnetic acceleration device for simulating high velocity shock waves around reentry body [BMWF-FB-W-68-12] 14 p2323 N68-24800

Beam transport system unalysis for particle accelera-14 p2299 N68-25154

CERN Electron Storage and Accumulation Ring ICESAR/ efficiency - effects of background noise on particles in high frequency accelerators [CERN-68-3] 14 p2238 N68-25488

Lie series applications to celestial mechanics, accelerators, satellite orbits, and optimization
[NASA-CR-1046] 15 p2491 N68-25841

Nobelium inotope production and decay, fission of fermium 244, and research on element 104 [UCRL-17907] 17 p2842 N68-29047

Coumotron high energy beams and proton-proton reactions, proton elastic scattering, cross sections, and deuteron production
[BNL-12544] 17 p2940 M46 2011

Cylindrically symmetrical radiation shielding for high energy muons with no magnetic fields present in vicinity of proton accelerator [UCRL-18117] 18 p3133 N68-30365

Dynamitron accelerator and its optical system and NP-17359] 18 p3056 N68-30623

Operating characteristics of proton beam monitoring system used with particle accelerator [PPAD-640-E] 19 p3281 N68-31949 Approximate formulas for calculating scattered radiation in accelerator halls [NP-TR-1663] 20 p3548 N68-33148

Design parameters for linear accelerator for accelerating pions from 400 to 1200 MeV
[LA-DC-9419] 21 p3677 N68-34448

Klystrons tested for use as power source in linear ac-[LA-DC-9444] 21 p3669 N68-34509

Double drift bunching of proton beam for acceptance into accelerators
[LA-DC-9422] 21 p3743 N68-34511

Control and operating systems of linear accelerator [LA-DC-9436] 21 p3726 N68-34512 Description and design of du source for particle accelerators [LA-DC-9421] oplasmatron proton ion

21 p3743 N68-34513 Power requirements, ring structure, focusing and automatic parameter control of proposed 100-gigaelectron volt accelerator (JPRS-6447) 22 p3938 N68-35992

Summary report on particle accelerator and bubble number research and construction

23 p4117 N68-36575 Proton accelerator tube with strong focusing magnetic quadrupole lenses [CERN-TRANS-67-4] 23 p4123 N66-36881

23 p4123 N68-36881 Experiments on supraccelerator /textbook/ [AEC-TR-6936] h energy cybernetic proton 24 p4318 N68-38182

Experimental program for studies of high energy

nergy proton accelerators, and particle analysis 24 p4319 N68-38185

Experiments for measuring cross sections of elastic scatter of mesons, nucleons, and antinucleons by nucleons on superhigh energy accelerators 24 p4319 N68-38187

Experiments for solving general problem of strong sersections /superhigh energy physics/ - studies of mul-ple creation and formation of resonance states 24 p4320 N88-38188

Proposed experiments for studying electromagnetic teractions on superhigh energy proton accelerator 24 p4320 N68-38189

Experiments with neutrinos and muons on superhigh energy proton accelerator

24 p4320 N68-38190 Technical characteristics of experiments proposed for cybernetic accelerator - general requisites for pencils of particles and experimental rooms 24 p4320 N68-38191

Use of 18 GeV proton synchrotron-injector /booster/ or experiments on pencils of particles and with storage ings on antiprotons 24 p4320 N68-38193

Design concepts and dynamic characteristics of roton accelerator waveguide separating channel 24 p4520 N68-38194

PARTICLE BEAMS
NT ATOMIC BEAMS
NT ELECTRON BEAMS
NT BON BEAMS
NT MOLECULAR BEAMS
NT NEUTRAL BEAMS
NT PEUTRAL BEAMS
NT PROTON BEAMS
NT PROTON BEAMS PRINCIPAL COURTS OF Frequency shift measurements of coherent vertical etatron oscillations at injection as function of beam urrent in elterating-gradient synchrotrons BNL-11631]

01 p0101 N68-16082

Kaon and pion fluxes expected in intermediate energy meson beam experiments in proton area at zero [COO-1195-96]

energy and beam structure synchrocyclotron 03 p0390 N68-12404 se space dilution and beam nating gradient synchrotron 03 p0392 N68-12490 Devices for determining end of particles accelerated by sync [LYCEN-6713] Effective transverse phase density distribution in alterna [BNL-11763]

Accelerator beam degeneration from an

[PPAD-609D] 03 p0398 N68-12771 Transient development of hose instability of tickled

04 p0554 N68-13639 Current pulse shortening effects in linear accelerator beam destruction [SLAC-TRANS-73] 05 p0698 N68-14250 05 p0698 N68-14250

Large hydrogen bubble chamber for observation of eutrino interaction physics in high energy particle

05 p0642 N68-14286 Formula for correcting Knudsen vapor pressures for cell losses using known effuse distribution and condensation coefficients (LA-DC-4786) 05 p0702 N68-14683

Proceedings of 1967 CERN School of Physics dealing with beam optics, kaon decay, and use of polarized targets in particle physics (CERN-67-24, V. 4) 06 p0885 N68-15801

06 p0885 N68-15801 Trajectory optics, magnet requirements for precision ptics, composite spectrometers, exvelope optics, and eam shaping systems

06 p0085 N68-15802 Linear accelerator applications and researches in nuclear and particle physics, storage rings, and bubble hamber physics

(LAL-1176) 07 p1040 N68-16249 First and second order matrix theory for design of sum transport systems and charged particle spec-

(SLAC-75) 08 p1211 N68-17255 Rapid cutoff system for cyclotron beam (UCRL-17728) 08 p1157 N68-17930

(PPAD-620E) 10 p1511 N68-19558

ation of longitudinal space charge colorators - feasibility of using beacal inserts [CERN-68-1] 10 p1563 N68-19677

Multiple Coulomb scattering for ISR (LNF-68/1) 11 p1758 N68-21844

ELECTRON DENSITY PROFILES ELECTRON DISTRIBUTION

im transport system for linear accelerator and 14 p2237 N68-25145 in model of quasi-inderendent quarks 15 p2525 N68-26818 products at 180 degrees to beam (ANU-P/399) eter to detect reaction 16 p2663 N68-27680 cumulation in storage rings by radio se assisted by computer program Particle beam accur equency technique frequency tech analysis [CERN-68-22] 20 p3538 N68-33106 Kinematics of particle beam energies and angles of incidence from two nuclear reactions [AD-672932] 22 p3928 N68-35328 AD-672932]
Graphs for calculating waist-to-waist transportant particle beam in thin less optics
22 p3918 N68-35684 charged particle (UCRL-18217) Karlsruhe isochronous cyclotron beam property, phase measurements and instrumentation [KFK-754] 22 p3919 N68-35861 Particle separation with two and three cavity RF separators at CERN 2 m hydrogen bubble chamber [CERN-68-29] 23 p4113 N68-36171 Kaon and antikaon product tive kaon beam of 4.25 BeV/c [ORO-2504-109] on in hydrogen by nega-23 p4122 N68-36849 High energy, small pi 24 p4321 N68-38370 PARTICLE CLOUDS U CLOUDS PARTICLE COLLISIONS High energy collision rocesses by approximate m eena and related AROD-3246-18-P) 02 p0244 N68-11387 Limiting conditions charged finite particles distribution function of 02 p0254 N68-11567 ring properties, and ing beam experiments 03 p0720 N68-14976 Scattering theory mode determine \$ matrix in colli [AERE-TRANS-1066] d on Hamilton used to 06 p0883 N68-15121 Frictional forces and coll moving ion and neutral gases [NASA-TM-X-63079] on frequencies between 06 p0834 N68-15348 tion solution for interacting levels in eximation of slow collisions of heavy 06 p0886 N68-15952 Uses and limitations of solid targets in atomic scat-(NP-17144) 07 p1045 N68-16576 FORTRAN computer program for calculating kine-atics of two-body nuclear reactions using relativistic formulas (ONRL-4179) 07 p1047 N68-16645 integration of Bolt [EP-RR-15] collision integrals 07 p1049 N68-16726 FORTRAN computer p ter program for cross sections, analysis in nucleon-nucleus colliand particle emi [NASA-CR-93127] 07 p1054 N68-17100 ed for derived for dielectronic atum theory of resonance col-(NASA-CR-933591 08 p1221 N68-18125 trical rod determined by TTEF-4821 09 p1387 N68-18483 soberic analog state or superposition of scattering tes and two-particle, one-hole states 10 p1565 N68-19729 on method applied to Unitary impulse ap-12 p1919 N68-22003 Measuring high es 12 p1938 N68-22862 on theory applied to in-al affectiveness 13 p1998 N68-23199 Quantum mech terpretation of rel (ORNL-4215) or deuteron production in 1.5 to 3 GeV 15 p2514 N68-25933 Models of by k chamber data for parti-(BNL-12232) nergy proton-proton collisions 15 p2519 N68-26422 n operator and photon scat-16 p2734 N68-27074

One cha nel static model of pion-nucleon scattering 16 p2718 N68-27079 c heavy particle coll NASA-CR-95352] Pion, kaon, and antiproton mass in high energy proton pro-Theoretical study of surface wave propagated on mperate plasma column with collisions smoid collision in axially symmetric magnetic [NASA-TT-F-11632] Optical emission produced by proton and hydrogen tom impact on nitrogen and hydrogen molecules 19 p3321 N68-30941 Multiple production of pa GeV pions with photographic [REPT.-902/VI/PH] Meson-nuclei interaction at very high energies [JINR-P4-3800] 20 p3546 N68-33063 Analytical represersion spectra from nurange 750-2000 MeV [NASA-CR-96371] FORTRAN program for calculating particle spectra roduced in high energy proton-proton collisions by the temperature statistical model two temperature star [NASA-CR-963171 Summaries and reviews of conference papers on ectron-atom collision theory electron-atom collina [NASA-CR-89216] Inelastic cross section energy many-body coll (INS-P-889/VI/PH) Collison cross section measurements for hotoproduction of negative pions by seutrons in deu-[NP-17458] Conference proceedings on high energy collisions of (CERN-68-7, V. 1) Particle production in high energy proton-proton Bubble chamber data on a and many body collisions Regge poles and occurrence of resonances in pi N [UCRL-TRANS-1364] Neutral particle collision population density and ele decaying helium plasma [CEA-R-3450] nic collision Theory of Regge pole m lisions to exchange process [CERN-68-31] Shrinkage of forward and peaks in elastic and inelastic pro [JINR-P2-3897] High speed photography studies of particle trajecto-ries and distributions in collisions with water drops 24 p4289 N68-38415 PARTICLE COUNTERS
U RADIATION COUNTERS PARTICLE DECAY
U RADIOACTIVE DECAY

NT ELECTRON DISTRIBUTION
NT ION DENSITY (CONCENTRATION)
NT IONOSPHERIC ELECTRON DENSITY
NT HONOSPHERIC ION DENSITY
NT MAGNETOSPHERIC ELECTRON DENSITY
NT MAGNETOSPHERIC (ON DENSITY
NT MAGNETOSPHERIC PROTON DENSITY
NT PLASMA DENSITY
NT PLASMA DENSITY
NT PROTON DENSITY (CONCENTRATION) 16 p2733 N68-28293 ical model three body problem for ding particles, and use of perturba-17 p2925 N68-28488 in deep sea [NOO-TRANS-378] 04 p0509 N68-13243 ction in center of Design criteria for collective linear ion accelerator [JINR-P9-3440-2] 05 p0644 N68-14704 n collisions 17 p2945 N68-29499 Energy density and neutri-origins of neutrino sources o density in universe, and r distribution of particles ected from rough surfaces 18 p3121 N68-29616 06 p0903 N68-15076 Distribution density of particles for liquids and solids derived from kinetic equation of averaged force field 06 p0879 N68-15281 18 p3141 N68-29629 Average number and energy of gamma rays emitt as function of fragment mass in uranium 235 them neutron induced finion 18 p3142 N68-30008 [JUL-331-NP] 06 p0886 N68-15887 2-matrix due to integer character of oc-er, and investigation of inequalities in-matrix elements due to particle dis-Properties of 2-mi cupation number, volving density-m ticles in collisions of 200 emulsion nuclei 19 p3335 N68-31817 [UCD-CNL-83] 07 p1043 N68-16495 ments and their ap-DESY-67/281 07 p1053 N68-17057 Particle size distributions and long term mean con-entrations of radioactive aerosols measured by personal and static air si [AERE-R-5688] 13 p2005 N68-23658 20 p3550 N68-33376 flite measurements in near-f meteoroid penetration in discal light data 16 p2761 N68-27495 20 p3551 N68-33548 Project Luster Aerobee particle collection rocket ex-21 p3736 N68-33866 16 p2762 N68-27500 Meteoritic particles and other interplanetary matter in vicinity of moon measured by picacelectric sensors 16 p2762 N68-27501 ns of peripheral and central high 21 p3738 N68-34139 ental abundances in interplanetary dust 16 p2762 N68-27502 n of dust in solar system esti-21 p3742 N68-34438 16 p2762 N68-27503 nlyzed for phase func-22 p3921 N68-34975 16 p2763 N68-27509 ice decay in two body alculations to determine ing points forward of jet Approximate analytical calcurricle density at surrounding 22 p3922 N68-34979 nozzie in vacuum due to ext [NASA-TM-X-52468] ed gas in jet plume 18 p3061 N68-29919 matrix for theory of 22 n3922 N68-34983 iple meson production 19 p3385 N68-31581 [ITF-68-3] 22 p3923 N68-34984 21 p3761 N68-34008 Measuring plutonium 238 radioactive space debris particle density resulting from SNAP 9A satellite failure [TLW-6006] 22 p3931 N68-35575 23 p4115 N68-36309 Airborne stereoscopic camera and radar measure-ments of convective clouds during thunderstorm development on effects on excited molecule dectron-ion recombination in 21 p3720 N68-34792 23 p4143 N68-36998 potential for nucleon 23 p4136 N68-37351 24 p4286 N68-38395 on of equally sized liquid drops in U RADIATION COUNTERS 24 p4243 N68-37555 PARTICLE DIFFUSION

NT ELECTRON DIFFUSION el for relating particle col-24 p4314 N68-37781 Compatibility of interplanetary electromagnetic field d backward diffraction 24 p4321 N68-38331 01 p0129 N68-10035 Radial diffusion of violation of third adia [REPT.-67-16] ly trapped particles by 04 p0571 N68-13651 Derivation from covariant form of Boltzmann equa-tion resulting in relativistically satisfactory diffusion equation [AD-662908] 06 p0881 N68-15881 Convective instability ph ena in geophysics and PARTICLE DENSITY (CONCENTRATION)

NT ELECTRON DENSITY (CONCENTRATION) (NASA-CR-93068) 07 p0991 N68-16446

fusion equa [EUR-374] ite cadm

Comp SU-IPR-2 Neutron luttice of blocks (IAE-1363 Diffusion on fragme CEA-R-3 theory calc

Survey of fusions in s (NP-TR-16 Distribu IPPCZ-77 Compute neutron dif (KAPL-M-C-CR-6 NASA-C

and air po

Gulvano

FTD-HT

Flow v diffusion mosphere [SC-CR-6 PARTICLE NT FIE NT FIE NT ION NT NE

Charged I INASA- DEX

TY

3243

4704

, and

5076

M 5281

887

495

ap-

057

on-per-

658

195

es-

100

ier

02

03

m

19

11

(SC-CR-67-2812)

PARTICLE EMISSION ELECTRON EMISSION

(NASA-CR-90545)

NT FLECTRON EMISSION
NT FIELD EMISSION
NT NEUTRON EMISSION
NT PHOTOELECTRIC EMISSION
NT RECONDARY EMISSION
NT THERMIONIC EMISSION

ar final state du actions in oxygen

01 p0130 N68-10067

62 p0213 N68-11787

03 p0387 N68-12196

cay modes following photo

im detector for stu-

19 p3324 N68-31003

ributions in interaction is of water 19 p3225 N68-31322

SUBJECT INDEX ical solution for time dependent seutron dif-(EUR-3742.E) 09 p1387 N68-18496 in heterogeneous gra-lied by pulsed neutron tion of th 10 p1566 N68-19733 across magnetic field [SU-IPR-202] anomalous diffusion 11 p1760 N68-20881 Neutron diffusion mean ttice of cylindrical char rements on aquare graphite nel and on solid graphite (IAE-1363) 12 p1912 N68-22941 ns of uranium 235 fis-nd gamma iron insula-ICEA-R-32531 14 p2316 N68-25308 Subroutine for one d theory calculations (GA-8286) nal neutron diffusion 14 #2319 N68-25443 Survey on research for to fusions in magnetic fields (NP-TR-1640) erse plasma particle dif-16 m2738 N68-28074 Distribution function for at les in magnetostatic field chartic heating of parti-and particle diffusion IPPCZ-771 17 p2935 N68-29165 Computer program neutron diffusion equ [KAPL-M-6728] oupled time-dependent ne space dimension 19 p3331 N68-31557 Ocean diffusion models for predicting radios oncentration levels associated with accidental re-rom isotopic heat sources for future use in S 22 p3871 N68-35583 Momentum transfer a port equations for gas mis [NASA-CR-97148] s to Boltzmann trans 23 p4139 N68-36317 Galvanossagnetic and the gallium amenide after coppe [FTD-HT-23-762-67] magnetic properties of Tusion 24 p4335 N68-38342 Meteorological and particle studies related to health physics - plume rise, site evaluation and calculation, diffusion and transport, spectra, scavenging, theory, and sir polition and air pollutio [AECL-2787] 24 p4284 N68-38375 el for prediction of at-m of aerosols 24 p4286 N68-38397 d for calculation of fall 24 p4286 N68-38398 al measurements applicable se rise, and amoke diffusion 24 p4287 N68-38401 cal particle fluxes near 24 p4287 N68-38403 on of stack gu tion of airborne 24 p4288 N68-38407 aracteristics of relat heres boundary layer article dispersion in at-24 p4288 N68-38409 ome depletion by ground surface absorption via one dimensional parabolic diffusion

[PB-173925] (ITEF-497) [AD-672093] 24 p4290 N68-38422 [RHEL/R-146] 24 p4255 N68-38459 Method for deformed suclei (JINR-E4-3453) Average number and as function of fragment [JUL-331-NP] Distribution of partic field of magnetic storm [NASA-TM-X-63147] Satellite observations of very low frequency mag-setosphere emissions and association with energetic charged particles [NASA-CR-89967] 01 p0130 N68-10067

Correlation of orbiting geophysical satellite solar lare observations with solar radio and exergetic parti-Rotational energy of three-particle system (ITF-67-49) 17 p2941 N69-29422 Compton scattering from protons at 90 deg in energy age 550 to 1130 Mev (NASA-CR-91510) 04 p0570 N68-13579 ntic eigenfunctions and g particle decay con-07 p1039 N68-16218 ric particle sequential Tape progra 07 p0995 N68-16310 ent, kaon decay. and flying spot sc [COO-818-103] 08 p1212 N68-17394 photography of men Hydrogen b 09 p1389 N68-18623 Decay of neutral K-m isotopic spin, and charge (ITEF-516) nto pions according to invariance 09 p1389 N68-18624 s with muons and elecctron scattering 12 p1923 N68-22168 Energy spectrum calcusion of binary frain frags [SRO-141] a for antineutrino emis-of uranium 235 .12 p1941 N68-22910 of solar cycle variation in Polar cap absorption s 15 p2549 N68-25880 NASA-TN-D-44731 nation for evaluating IJINR-E2-3730) 15 p2520 N68-26447 Nonlinear chiral Lagrangia emission, absorption, and scatt [COO-264-421] models for soft pion ing 15 p2524 N68-26752 ium target and analysis is, and tritons 16 p2719 N68-27163 Probability of heavy charged particle emission in negative muon capture by acon nuclei [JINR-P1-3721] 16 p2726 N68-27953 oft particle or production or unalyzing multiparti-(IPP-6/61) 17 p2943 N68-29488 Successive particle emmercited nuclei with large at [JINR-P4-3814] calculated for highly 21 p3744 N68-34641 imion produced by in-adiation with tungsten 21 p3701 N68-34718 in potential fields 23 p4125 N68-36947 Helicity scatter Singularities of qua ermediate state reson IFVE-STF-67-16-K] phs containing in-23 p4127 N68-37013 Decays of odd parity baryon re 23 p4127 N68-37020 PARTICLE ENERGY

NT ELECTRON ENERGY

NT ELECTRON STATES

NT PROTON ENERGY carbon at energies notomiclear reactions in seen 300 MeV and 1000 MeV 01 p0109 N68-10500 Devices for determining energy and beam structure particles accelerated by synchrocyclotron YCEN-6713) 03 p0390 N68-12404 of particles accel
(LYCEN-6713) Alpha particle and half-lives [UCRL-17723] 03 p0399 N68-12787 cavy particles traveling 05 p0709 N68-14254 05 p07 5 N68-14598 gy of gamma rays courts in uranium 235 therms

06 p0886 N68-15887

10 p1520 N68-19786 ing power of charged

12 p1876 N68-22678

14 p2306 N68-24776

Energy loss, range, a particles in allique or ger [CEA-R-3371]

Fast neutron ((COO-7-0456)

ty in ring current

19 p3233 N68-31993 ne development of neutron octing electromagnetic nucleon phase shifts 20 p3549 N68-33249 on rate of verious processes on of analytical expressions 22 p3920 N68-34866 n onergies and angles of incidence from to (AD-672932) 22 p3928 N68-35328 wave function and energy spectrum finite deformed potentials 22 p3936 N68-33856 approach to effective nuclear force of nucleon potential 23 p4128 N68-37030 Single particle wave func calculations from finite defo [JINR-P2-3857] Self consistent a (RC-68-52) U FLUX [RATE] PARTICLE PLUX DENSITY

NT ELECTION FLUX DENSITY

NT NEUTRON FLUX DENSITY

NT PROTON FLUX DENSITY Kaon and pion fluxes expected in intermediate ener-y meson beam experiments in proton area at zero gradient synchro [COO-1195-96] 01 p0110 N68-10600 raison plants could .01 p0118 N68-10649 FORTRAN subcoutines for determining intersec-ons of nuclear particle flight path and wall of holical iubular duct [NASA-TN-D-4435] 09 p1374 N68-18541 gy density in ring current 10 p1520 N68-19786 Energetic particle flux measured by Explorer 33 s [NASA-CR-95484] 17 p2963 N68-28765 pd particle transport in Solution for equi semi-infinite space (ORNL-TR-1912) 19 p3311 N68-31578 tical particle fluxes man malyan .34 p4287 N68-38403 activity and chemical con-24 p4289 N68-38414 Precipitation scavenging of m nnicron particles 24 p4289 1968-38416 Calculations based on convective and Brownian dif-fusion to predict rain washout coefficients for mi-micron aliver iodide particles 24 p4289 N68-38417 Artificially placed tracers for study of scavenging by Turbulent trapafer characteristics of redissions of sent from air to grass (PUBL-131) PARTICLE INTERACTIONS

NT ELECTRON CAPTURE

NT ION ATOM INTERACTIONS

NT MOLECULAR COLLEIONS

NT MOLECULAR COLLEIONS

NT MUCLEAR ROTERACTIONS

NT NUCLEAR ROTERACTIONS

NT SPIN-ORBIT INTERACTIONS 01 p0100 N68-10012 COO-1195-87] OL p0104 N68-10295 es of week elementary puriets in 01 p0106 N68-10439 1100000

COO-Muti ment o [LA-3]

SUBJE

Vibr TTF-6 Con

weak i Rela and de teracti Unit

CAL state p Hyd in neg (COO Ele | ANL PARTIC NT I

Qua

Mo [LA-I Sign LUCS Kar decay

Zer

REP Ma mass (TRfuncti (TH/ Ma (JIN) CP

Gr

and n 5 baryo

Co (15-1

23 p4118 N68-36634

Kaon-nucleon total cross sections [RPP/H-31] 23 p4121 N68-36825

Hydroger bubble chamber measurement of decay parameters for positive negative hyperm yields neutron plus positive negative pean (UCRL-17781) 23 p4123 N68-36892

Charged triplet model for finite radiative corrections (eptonic interactions and decay NP-16941) 01 p0106 N68-10441 So leptonic intera [NP-16941] Computer programs and experimental studies on an energy nuclear particle reactions INYO-2897-22] 01 p0113 N68-10757 [NY0-2897-22] Of p0113 Neb-10737
Energy dependence of fragmentation parameters and interaction mean free paths in nuclear ensulsion for heavy cosmic ray nuclei [CR-104] O2 p0262 N6B-11358 Energy estimation in collisions of very high energy pions with nuclei of photographic emulsion [INR-828/VI/PH] 02 p0245 N68-11443 Regge pole domination of strong interactions, and 5 matrix approach to bootstrap of rising trajectories [TH/222] 02 p0246 N68-11514 Calculating T-odd angular correlations at cascade mission of two mixed gamma-quanta by polarized 02 p0247 N68-11577 Digital computers used to calculate multiparticle in-teractions in high and superhigh energy region [NASA-CR-91039] 03 p0387 N68-12068 Plasma oscillations, ionic wave propagation, electron eam-plasma interactions, and positive column insta-ilities, resonances, and propagation 31-PR-145] 03 p0400 Nes-12284 [SU-IPR-145] ure in nuclear shell model 03 p0389 N68-12386 ICOO-1573-131 Analysis of six-prong jets at 8 GeV/c positive pionproton interactions [INR-807/VI/PH] 03 p0390 N68-12414 Weak interaction matrix elements between nuclear 03 p0393 N68-12545 NP-107-2] High energy physics - film measuring and computa-ion, particle interactions, tambda magnetic moment malysis, and plunetary atmosphere species production COO-1537-1 03 p0393 No8-12550 (COO-1537-1) High energy particle interaction research summaries experimentation, instrumentation, bubble and spark chamber developments, and laser beam studies [NYO-1984-11] 04 p0348 N88-13395 Theoretical work in elementary particle physics - discrete symmetries, weak interactions, and higher symmetries analyses for charged particles [CERN-67-24, V. 1] 04 p0549 N68-13606 Formalism, and transformations of discrete symmetries in elementary particle interactions
04 p0549 N68-13607 Higher symmétries in weak particle interactions 04 p0550 N68-13608 Mass spectrometric analyses of particle-surface in-ractions resulting when oxygen atoms moving with tellite velocities strike solid surface 04 p0551 N68-13765 [NASA-CR-91520] ommaries on rubidium and cesum energy bunds, sond and tin group representations, electron gas are potential, particle interacting energies, and ir maser processes. rface po (OPR-66) 04 p0562 N68-13810 Theoretical studies on high energy particle interac-ions for radiation shielding 05 p0703 N68-13959 Quantum phase geometry for internal degrees of freedom of isolated systems and modification of high energy particle interactions (INIC-824/VI/PH) 05 p0710 N68-14314 Resonance scattering problem in symmetry breaking quasi-particle method for baryons and quarks.
[JINR-E2-3454] 05 p0710 N68-14341 Relationship of wave functions of unstable partices and particle decay laws
[JINR-E2-3470] 05 p0711 N68-14356 Applicability limit of weak four-fermion interaction (ITEF-471) 05 p0717 N68-14716 Particle interaction measurements and calculations stronomical measurements, and radioactive inetope detection [NASA-CR-91866] 06 p0888 N68-16101 Absorption of S-orbit negative pions by helium 4 [TID-24141] 07 p1045 N68-16573 Bethe-Salpeter equation for two spinless particles in-teracting through massive scalar field. 07 p1051 N68-16869 Cascade calculations of fast particle interactions with nuclei [JINR-P2-3562] Asymptotic behavior of vertex function in theory of nonrenormalizable CP noninvariant interaction of photons with apinor particles
[JBNR-E2-3557] 09 p1388 Nest 18402 09 p1387 N68-18569

(FTF-67-13) IIC-67-241 [188-67/31] (TR-548) teractions un [NTH-68/2] wave functions [FTEF-538] windowless gas target of (ORO-1067-2) Geom

[NTH-68/3]

ic invariance

Derivative method in many body theory 09 p1395 N68-19230 Interaction of fast neutrons with oriented holmiu 163 nuclei nary phase method applied to potential scatter-Relative partial decay rates for positive and negative kaons yielding positive and negative pions [COO-1193-98] 10 p1563 N68-19638 Mathematical model of two-state system interacting with radiation, neutron scattering measurements, and adiation, neutron scattering measurements, o-potential method of obtaining phonon disp Strange particle resonant states from pion proton in-teractions Derivation of dispersion sum rules in strong interac-Equal time anticommutator structure of baryon curscalar meson interactions 11 p1758 N68-21629 rents in neutral pseudos [NASA-TM-X-63165]. [NASA-18t-A-52105] Scattering of test particles by waves in plasmas con-taining suprathermal particles described by Fokker-Planck equation including wave-particle interactions 12 p1944 N68-21962 Multi-pion final states from pion minus proton in-Current definition and mass renormalization in odel field theory C-67-24] Observable effects of box singularity 12 p1926 N68-22361 Double charge exchange scattering of positive pi-mesons on complex nuclei [PPAD-633F] 12 p1928 N68-22438 High energy proton-proton interactions with charged particles in hydrogen bubble chamber [BNL-11993] N68-22511 Expressions for describing pion-nucleon differential scattering cross sections in terms of Coulomb scattering amplitude, Coulomb phase shifts, and nuclear phase shifts.

[ORNL-4197]

12 p1933 N68-22658 Stripping reaction for spherical and deformed nuclei of lithium LHNR-E4-36241 Evaluation of peripheral model for calculating on roton-proton interaction with neutron and pion formation [JINR-E2-3638] Asymptotic equality of cross sections of neutrino and antineutrino interaction with nucleon [JINR-P2-3647] 13 p2119 N68-23757 Algebraic relation of diverse fundamental particle inelations between pions 13 p2120 N68-23844 Angular corretati [IBJ-876/VI/PH] Interaction between point defects and inclusions in Orbiting and resonance states of elastic scattering at potential barrier energies
[JINR-P2-3692] 14 p2297 N68-24681 Calculation of gamma spectrum from pion-pion in-teractions and neutral pion decay [NP-17315] 14 p2339 N68-24745 NP-17313] Helium and carbon /p,2p/ reaction 14 p2309 N68-24949 Uncertainty relationships for fermion interaction om Hamiltonian functions for two body harmon Nonrelativistic quantu ractions under gravitati Invariance amplitude with arbitrary spin cor Summary information on cross sections of neutron induced and charged particle induced reactions, neutron cross sections of isotopes, and development of induced particles are tensors.

09 p1397 N68-19292

09 p1399 N68-19471

10 p1571 N68-20512

11 p1749 N68-20661

11 p1754 N68-21140

12 p1921 N68-22123

12 p1925 N68-22282

12 p1938 N68-22799

12 p1941 N68-22921

13 p2119 N68-23774

13 p2139 N68-24220

14 p2297 N68-24681

15 p2512 N68-25665

15 p2506 N68-25725

15 p2521 N68-26506

15 p2524 N68-26697 mentary particle isotop-

15 p2526 N68-26931

NP-17258)

ics for particle in-

SUBJECT INDEX Low energy interactions of kaon nucleon system 16 p2719 N68-27143 Wave propagation and coupling in two interacting charged particle streams analyzed in terms of Maxwell equations and Lorentz force 16 p2737 N68-27715 Gauge theory of strong interactions applied to vector 16 p2724 N68-27838 Green functions for pair production in degenerate rmion system due to particle interactions 17 p.2923 N68-28403 Quantum mechanical model three body problem for interacting and colliding particles, and use of perturba-tion theory 17 p2925 N68-28488 terference of nonidentical particles 17 p2941 N68-29423 [JINR-P2-3763] Intranuclear cascades with many particle interac-[ORNL-TR-1800] 18 p3133 N68-30316 Decay spectrum of polarized muom in particle in-[NP-17451] 18 p3136 N68-30649 Angular correlation between neutral pi-mesons produced in negative-pion sensos interactions [INR-P-882/VI/PH] 18 p3139 N68-30809 Generalized equivalent potential method for calcu-ting multichannel scattering and particle scattering implitudes at monestru spin 19 p3321 N68-30975 Single particle parameter distributions in interaction energies, volumes, and enthalpies of water 19 p3225 N68-31322 Kinetic equations in weak interaction approximation conequilibrium process in statistical mechanics (ITF-68-4) 19 p3319 N68-32029 Magnon processes of nuclear spin-lattice relaxation in magnetic insulators 20 p3563 N68-32338 Polar orbiting satellite and other means of injecting whistler-mode waves into magnetosphere and producing wave-particle interactions 20 p3468 N68-32470 Single particle states identification in fission transi-tion nucleus uranium-235 20 p3544 N68-32789 Composite model of sigma hyperon as bound lambda ion and neutrino antikaon pairs 20 p3549 N68-33248 al state decay modes following photo-particle 21 p3734 N68-33746 Multiple scattering from interaction of electromagnetic radiation with statistical collection of nonmagnetic dielectric particles [TR-45] 21 p3732 N68-34440 etry, interaction Hamil-ucture of SU/3/ algebra 22 p3919 N68-34826 Approximate internal symn mian, set of operators, and st Statistical mechanics of many body problem and par-ticle interactions using canonical point transfer method 22 p3914 N68-34938 Charts of thermodynamic properties of helium show-ing effects of ionization, particle interactions, temperature, and atmospheric pressure [NASA-TN-D-4754] 22 p3857 N68-35117 S wave pion pion elastic scattering in pion proton in-22 p3927 N68-35150 Elastic scattering and resonance charge exchange of kaon particle interactions at meson resonances 22 p3927 N68-35194 sids of particles with short range repulsion and long range attractive interaction weak long 22 p3978 N68-35450 Relativistic two body problem with separable in-(JINR-P2-3865) 22 p3929 N68-35503 at high energies 22 p3930 N68-35542 Inelastic particle inter [ORNL-TR-1538-A] Many body problems for random approximations, Fermi liquid analyses, phonons and electrons, and su-

tromag Part for bo tain or Bro (TH/

NDEX

8-27143

eracting Maxwell

8-27715

o vector

-27838

enerale

-28403

dem for

-28488

-29423

mterac-

-30316

icle in-

30649

mesons

30809

calcu-ttering

30975

action

31322

32029

32338

32470

ransi

2789

mbda

3248

rticle

3746

mag-

4440

ebra 4826

par-

4938

5117

n in-

1150

e of

194

450

in.

503

542

634

825

192

Hydrogen bubble chamber study of proton proton elds proton proton positive pinn negative pion reac-[COO-1195-125] 23 p4123 N68-36893 Mathematical expressions for Monte Carlo treatment of relativistic systems of point particles.
[LA-3839] 23 p4124 N68-36927 Vibrational and rotational spectra of four particle (ITF-68-14) 23 p4134 N68-37230 Conference on quantum mechanics and field theory, weak interactions, and higher symmetries [CERN-68-23, V. 1] 24 p4307 N68-37534 Relativistic systems and wave equations, scatteris and decay processes, and quantized fields and local in teractions 24 p4307 N68-37535 Beta, muon, hyperon, and kaon decays, and vector, axial, and hadronic currents in weak interactions 24 p4307 N68-37536 Unitary symmetry applied to strong, weak, and elec-tromagnetic interactions 24 p4307 N68-37537 eractions described by means of group operation in Lie group 24 p4311 N68-37662 Quark model status exa d in classifying low lying [CALT-68-162] 24 p4313 N68-37780 Reviews of papers on structure of materials, solid ate physics, and essergetic particle interaction COO-1198-534) 24 p4331 N68-37791 state physics, and (ICOO-1198-534) Hydrogen bubble ch er data on strange particles ractions at 5.0 GeV/c 24 p4315 N68-37903 m negative pion-proton in [COO-1428-72] Electromagnetic re ation of vector part of neutrino negative electron intera [ANL-TRANS-643] 24 p4316 N68-37948 PARTICLE MASS NT ELECTRON MASS Width of particle decay used as test of mass formul for boson nonets [LNF-67/53] 01 p0105 N68-1041 01 p0105 N68-10417 Zero/four/ symmetry and Regge pole theory for reac-tions in which initial and final states in T channel con-(UCRL-17738) 02 p0243 N68-11303 Model-based mass law and R-process as mass law 02 p0246 N68-11537 Sign of mass difference determined for neutral K Kaon systems, violation of conservation/parity, pion decays, strangeness oscillation, lifetimes, and mass dif-06 p0885 N68-15803 oken O/8/ symmetry and mass relations for nuclei /2301 06 p0887 N68-16082 [TH/230] heory - weight rtary rotation in growth of particle mass Gravit applied to plane (REPT.-67-27) olar orbits 07 p1078 N68-16255 ectroscopy and gap ence in K mesons ethod for determining (TR-44) 08 p1215 N68-17864 Asymptotic symmetry me function sum rules, and mas (TH/232) od for obtaining spectral 08 p1215 N68-17883 Mass numbers of of H.I.,xn reaction products from 12 p1939 N68-22865 nam equality, lifetimes, les and antiparticles 14 p2301 N68-24379 CPT invariance test de and magnetic moments of parti [JINR-P2-3668] Equivalence of active and passive gravitational par-ticle mass, and measurement data on difference between ratios for bromine and flaorine 16 p2712 N68-27147 S matrix theory of perturbations for calculating baryon resonance /1238/ electromagnetic man dif-ferences 19 p3324 N68-31082 of Lorentz type used to mass and min 19 p3332 N68-31611 Component wave function describe free particle with rest [15-1815] ray rates of boson 27-plet in 20 p3546 N68-32979

Finite energy sum rule derived from unitarity, nalyticity, Regge asymptotic behavior, and resonance

(UCRL-18232)

Man law based on liquid drop model and tabulated atomic binding energies
[LA-3751] 22 p3929 N68-35474 22 p3929 N68-35474 difference of K-mesons 22 p3934 N68-35780 Particle separation with two and three cavity RF separators at CERN 2 m hydrogen bubble chamber (CERN-68-29)

23 p4113 N68-36171 two and three cavity RF Equal time com mutators and electromagnetic mass (C-68-34) 23 p4132 N68-37163 Measured mass stopping powers of graphite and autics in relation to cavity ionization theory 24 p4309 N68-37602 PARTICLE MOTION Effect of magnetic field gradiest local inhomogeneities on particle motion in space variation accelerators [JINR-P9-3434-1] 01 p0108 N68-10482 ution function of Limiting conditions charged finite particles 02 p0254 N68-11567 Atomic motion in liquid argon studied by inelastic cattering on neutrons 02 p0254 N68-11567 Radial space-charge field el ment in magnetostatic fields [CEA-R-3262] ects on particle move 03 p0403 N68-12661 Computer analysis of pa bottle with electron cyclotro [CEA-R-3115] e motion in magnetic 03 p0398 N68-12751 one for charged parti-(DLR-FB-67-58) 04 p0554 N68-13380 two body relativis 05 p0709 N68-14255 05 p0715 N68-14573 Motion of single charged particles in trap with mag-tic mirrors and detection of nonadiabatic electron (UCRL-TRANS-1358) 07 p1044 N68-16513 Synchrotron emission at helical motion of relativistic ectrons emitting from source with relativistic velocity 07 p1060 N68-16700 INASA-TT-F-5211 Analysis of hourly a ta in magnetospheric ged Explorer 28 satellite and uncoupling of parallel otion in neutral sheet 08 p1241 N68-17927 and perpendicular p Lectures on particolar aspects of theo [INP-533/PL/PH] 10 p1364 N68-19714 of fledon reactions, in-10 p1565 N68-19725 Statistical theory of cha dered magnetic fields rged particle transport in dis-10 p1572 N68-19735 Three dimensional resonance effects on particle mo-on stability near earth-moon equilateral libration NASA-CR-937691 10 p1593 N68-20119 stence of tachyons, parti-ed of light 12 p1914 N68-21900 Analysis of charged particle motion in suchar Cou-lomb field [ITF-67-15] 12 p1936 N68-22785 Electrode drag for teractions of pulsed. [NASA-CR-94579] nents in boundary in-Motions of relativistic gra ied with linearized Einstein nal gas plasmas stu-ions coupled to one particle Liouville et LPTHE-TH-2371 14 p2307 N68-24827 sating second order [IEA-144] 14 p2298 N68-24843 Motion of charged parti-field, quantization of intera-tograble Lie algebras [CTS-T-PHYS-68-1] 14 p2311 N68-25062 MASA-TM-Y-432301 15 p2549 N68-25755

16 p2712 N68-27038 16 p2644 N68-27452 e motion in deal hear wheel taking into ac-pressure as well as 16 a2765 N68-27518 LA-3831, ADD.1 16 p2729 N68-28071 16 p2729 N68-28 a of trapped particles in belical ma (NP-TR-1644) 16 p2738 N66-28095 Space charges and particle [BNL-12356] 17 p2948 1468-28677 ticles into filteri (CEA-R-3347) 17 p2921 N68-29025 ct of te beam furnace o lemperature 17 p2987 N68-29266 18 p3059 N66-2901 s of mo of particles in unstood WAPD-TM-7651 18 p3064 N68-30634 relation type time-of-light tically channel polaritos neutron beam (KFKL7/1968) 19 p3278 N68-31475 19 p3317 M68-31719 20 p3458 N68-32337 Effect of bulk me for essemble of relat [NASA-CR-96471] 20 p3551 N68-33525 rticle m -INASA-CR-965471 21 p3680 N68-34017 rticle in planer motion and 22 p3970 M68-35028 -THEMIS-UM-68-11 22 p3955 N68-35711 NR.P2-1847) 24 p4311 N66-37690 24 p4288 N68-3848 24 p4299 Res-30420 NT KAON PRODUCTION 18 18 18 18 NO. erk model and high DESY-67/191 OL p0103 N66-10275

01 c0107 NSS-103

LINE-P1-33991 TE

Sieve

Prec

Parti

sphere

Option fro

PARTIC

NT E

SU-3

charge [ISS-6]

Angued or analyze

maiya TR-54

Grav

implicatelli

Qua

lC-67

um-iro

Spin

One

Effe

Con

SU/

Cor

decay and up (CON

lated parity

PARTK

Net

IS-T-

COO

stations of cosmic ray nuclei without particle Fragmentations of production [INR-792/VI/PH] 02 p0245 N68-11445 05 p0704 N68-13960 Crean sections states resulting fr gets under single-[ORO-2591-33] ns for particle production in excited from impact of protons on gaseous tar-e-collisium conditions 07 p1047 N68-16616 Statistical mode els for many particle production izing angular momentum comerv DESY-67/25] 07 p1053 N68-17056 Cascade calculations of fast particle interactions with nuclei [JINR-P2-3562] 09 p1387 N68-18569 Kinematic quantities for seities for two-body and quasi two-ion on protons tabulated 09 p1396 N68-19262 body photopre (SLAC-77) Neutral pion production in negative pions with senon nuclei [INR-844/VI/PH] ction in interstions of 9 GeV 09 pl398 N68-19375 Strange particle production in pion-proton and pion-scleon interactions in bubble chambers [COO-1195-94] 10 p1561 N68-19529 Orbital angular m ta produced by high energy 10 p1565 N68-19722 Low multiplicity interact nuclear enulsions interpr nucleon-nucleon collision [INR-784/VI/PH] tions of high energy nuclei in preted in terms of single 10 p1570 N68-20409 [DESY-67/31] 11 p1757 N68-21406 Peripheral mo (JINR-P2-3597) m production process 11 p1757 N68-21454 Positive pion photo [SLAC-TRANS-68] 12 p1926 N68-22374 Resonance pre n meson-nucleon interac 12 p1927 N68-22418 [UCRL-17984] roproduction cross sec-(LAL-1185) 12 p1936 N68-22738 e of multiple meson in spark (DESY-67/41) 12 p1942 N68-22961 High energy meson product serving counic ray lunar shade n implications from ob-14 p2340 N68-25069 Single pion production in pion-proton interactions riveen one and three giga electron volts 14 p2312 N68-25078 Multiple meson pr ction in proton-nucleon in-14 p2320 N68-25584 subble and spark chamber data for parti-n in high energy proton-proton collisions 15 p2519 N68-26422 Models of bub Six prong interactions of pions and protons and resultant particle production and distribution (INR-837/VI/PH) 15 p2525 N68-26776 Swimming pool reactor for gr neutron capture [IEA-133] mma ray production by 17 p2912 N68-28355 tial cross sections for roton-proton reactions 17 p2924 N68-28434 17 p2925 N68-28487 Counic gamma ray species of neutral pi-meaco [NASA-TM-X-63254] 17 p2963 N68-28697 does and angular des as and amplitudes UCIL-18141] 17 p2931 N68-28936 Cross sections as production by knows [UCRL-18131] nalysis in single pion 17 p2931 N68-28937 of pions 17 p2936 N68-29211 and electromagnetic fit (JINR-P2-3774) e theory to experiment for ion in pion nucleon scutter-

17 p2942 N68-29483

Soft particle emission model for analyzing multiparti-cle production 17 p2943 N68-29488 Parametric approacin multi-Regge model ch to study of total cross sections 17 p2943 N68-29489 Further results on negative pion proton yields neutral kaon hyperon in forward direction at 6, 8, and 11.2 GeV/c 17 p2944 N68-29495 Pion, kaon, and antiproton p as in high energy proton proto ction in center of 17 p2945 N68-29499 Electroproduction of pions at high energy and large omentum transfer 18 p3129 N68-29908 Surface ionization coefficient for fast secondary par-[FTD-HT-67-49] 18 p3135 N68-30524 Stastical model with energy and angular momentum 18 p3140 N68-30862 [DESY-68/10] on of next closed shell 19 p3319 N68-30868 Absorptive peripheral model calculations of produc-tion and decay resonance scattering angular distribu-19 p3328 N68-31211 Multiple production of GeV pions with photograp [REPT.-902/VI/PH] des in collisions of 200 nulsion nuclei 19 p3335 N68-31817 iom of 200 Lectures on experi stituting elementary p [CERN-68-24] rches for particles con-20 p3548 N68-33216 surements of vector ydrogen at energies Differential cross so meson photogroduction from 6.5 GeV to 17.8 GeV [SLAC-PUB-439] 20 p3549 N68-33320 element 105 20 p3550 N68-33424 Alpha radioactive is [JINR-P7-3808] st by coincidence elec-Pion form factor n 20 p3550 N68-33459 ion into electron ton annihilation into tiproton momenta of Antiproton-proton positron pair and anti-two gamma says for in 1.50 and 2.50 GeV/c 20 p3552 N68-33557 Pion production and pion s 21 p3736 N68-33893 Particle production in high energy proton-prot 22 p3922 N68-34983 nber data on multiple meson production 22 p3923 N68-34984 ic, multi-Regge, and duction processes 22 p3923 N68-34985 pion final states in pion 22 p3924 N68-34993 noretical neutron Computer production from [SC-RR-68-19] es and negative pions r and uranium targets 23 p4124 N68-36901 on of negative kar no incident on coppe on in high energy hadron interaction 23 p4132 N68-37167 (INR-P-915) roduction in positive pi Single neutral pi m (JINR-P1-3822) 23 p4134 N68-37243 us studies with partially to generalized for elec-Photopion production onserved axial vector o 24 p4308 N68-37542 m by positive pion beam at 1.48 BeV/c in hydroge 24 p4311 N68-37661 Statistical model and un multiple particle production (JINR-P2-3879) ry-symmetry theory of 24 p4315 N68-37881 PARTICLE SIZE DISTRIBUTION In-cloud drop size distribution function measured by [P-18] 01 p0086 N68-10019 Solid propulsion binder studies, propellant binde erminated by acid, chloride groups, application ichnology satellite motor, and oxidizer particle size or

03 p0410 N68-12315

03 p0415 N68-12321 n effects on incident radiation from clouds calculate [NASA-CR-91301] Particle size influence on decomposition and minimum explosion temperature of lead axides [AD-661673] 04 p0597 N68-13642 Particle size effect on explosive behavior of amm [NOLTR-67-112] 06 p0787 N68-15323 Logarithmic normal and Chi-square distributi functions evaluated for determining drop size distrib-tion in liquid sprays (NASA-CR-72272) 06 p0831 N68-160 06 p0831 N68-16068 Bistatic radar observations of drop size distribution rain shower 09 p1368 N68-18556 Size-dependent growth rate model for analyzing crystal size distribution 10 p1492 N68-20256 Design criteria for circular variable filter spectrome-er optical, electronic, and data handling systems for elating particle size effects to infrared spectra NASA-CR-93773] 10 p1531 N68-20217 [NASA-CR-93773] of Lifshitz-Wagner Experimental confin theory of particle coarse in binary nickel base allo [CALT-221-39] 12 p1893 N68-23005 Light scattering tech determination of micros [AFCRL-67-0620] for counting and size meteorites 13 p2066 N68-23206 Summary of information of raindrop-size distrand chloride particle [ECOM-02376-F] meteorological studi adar echo climatolog 13 p2058 N68-23260 Particle size distrib centrations of radios sonal and static air san [AERE-R-5688] 13 p2005 N68-23658 Filtration system for co from liquids [SAM-TR-68-10] 13 p2049 N68-24042 Dropwise condensation of water vapor - high speed otion picture determination of heat transfer neat transfer 14 p2375 N68-25372 Settling of nero horizontal tubing [TID-24285] 14 p2243 N68-25438 Lifetime and shape of small dust particles in inter-lanetary space that are assumed to be of cometary 16 p2764 N68-27511 Model of solid particles in mete near ecliptic 16 p2765 N68-27520 Calibration of hot-wire detector for particle concentration and size distribution in closed spacecraft cabin [NASA-CR-95398] 17 p2829 N68-28606 Small rocket engine test firings conducted to mea are particle size distribution of aluminum oxide ex INASA-CR-956881 17 p2962 N68-29036 Powder particle size effe pressed forged beryllium [AMMRC-TR-68-08] on physical behavior of 17 p2902 N68-29267 ticle size distribution of pter downwash dust cloud generated by heli [USAAVLABS-TR-67-81] 18 p3001 N68-30109 in water supersatural tic and thermodynam minimum size of conde [AD-670551] 19 p3266 N68-31829 tion using statistical 21 p3733 N68-34647 Mass exchange during tures and effect of particle [FTD-MT-24-210-67] ming of condensed mix-on burning velocity 22 p3978 N68-35284 FTD-MT-24-246-67] 22 p3876 N68-35322 Scattered light used to m are particle size of ex-23 p4106 N68-36192

Vibrational and rotational spectra of four particle

Neutron spectrometer with particle telescope for measuring fast neutron energies (JUL-499-RX) 01 p0066 N68-10847

23 p4134 N68-37230

(TF-68-14)

PARTICLE TELESCOPES

r

1

3

2

Experimental determination of transverse dispersion coefficient for system of two miscible fluids of equal density and viscosity Balloon-borne scintillation counter and counter telescope for measuring X rays and solar ultraviolet radiation in stratosphere auroral zone [REPT.-10/1963] 04 p0503 N66-13623 23 p4106 N68-36329 Cosmic ray intensity variations during 1966 recorded y neutron monitor and telescopes [N-4] 09 p1416 N68-18524 Sieve plate column separation of small particles in air 24 p4261 N68-37716 cope for charged parti-Precipitation scavenging of su bmicron particles 24 p4289 N68-38416 cles produced in ICEA-R-3378] 12 p1879 N68-22970 Particle size distribution of plutonic ım dioxide micro-Electronic counter and particle identification proto type telescope for 8-16 particle asymmetry experiment and flight unit and telemetry requirements for ad-vanced Apolio missions [NASA-CR-92120] 13 p2069 N68-23790 upheres after impact [MLM-1499] 24 p4352 N68-38442 its on particle size and distribu-iffraction patterns 24 p4260 N68-38476 Optical measurements of tion from Fraunhofer diffre [AEDC-TR-68-125] Sum rule countraints U channel of baryon-p (AD-663165) 13 p2069 N68-23790 tium target and analysis na, and tritom 16 p2719 N68-27163 utron bombarument or rission of protons, deut PARTICLE SPIN Techniques for a NT ELECTRON SPIN NT ISOTOPIC SPIN [PPAD-628E] High charge resolution a NT NUCLEAR SPIN Vidicon system f [ADP-53] SU-3 complex for boson resonances quarks of two mixed nonets with same spin and parity and opposite charge conjugation (ISS-67/36) 02 p0249 N68-11820 19 p3279 N68-31696 [ORO-2504-110] PARTICLE THEORY Applicability limit of weak four-fermion interaction 02 p0249 N68-11820 [ITEF-471] 05 p0717 N68-14716 Angular momentum redistribution over atomic spin and orbitals, crystal lattices, and electromagnetic fields analyzed for optical processes in crystals [TR-344] 03 p0406 N68-12230 Generation of particle to Structure of BBGKY hierarchy for Boltzmann gas and particle distributions [NASA-CR-75659] 16 p2646 N68-27611 Um in inhomogene [JINR-P10-3526] Analysis of four bor sai electron analog device [AFAPL-TR-67-79] Gravitation and light-gravi vitational deflection, effect al red shift, Maxwell and Particulate mechanics and at array of elastic equiradii spheres d stress-strain analysis for n spin, gravitation theories, and quar 16 p2779 N68-27624 Fredholm integral equation for partial waves as basis for constructing particles in nuclear Coulomb field [ITF-67-44] 16 p2727 N68-27988 05 p0700 N68-14308 rong decays of baryonic resonances 3/2 minus in Operators and matrix theory solutions for boson theory problems SU/3/symmetry (LPTHE-TH-214) 05 p0720 N68-14817 22 p3928 N68-35195 Spin effects, elemental plantaged proton targets entary particle reactions, and Theory of many body problem and particle physics [OSR-68-1741] 23 p4115 N68-36335 06 p0885 N68-15804 PARTICLE TRAJECTORIES
NT ELECTRON TRAJECTORIES Crossing relations for particle spin amplitudes, and implications for multi-Regge pole model [TH/235] 08 p1213 N68-17373 Magnet fringe field correction to gain axial stability and synchronism of particle motion in microtron (REPT_67-14) 01 p0102 N68-10194 Quark model analysis on positive and negative baryon mass splittings [IC-67-27] 12 p1923 N68-22198 Design and implementation of hubble chamber parti-cle track pattern recognition program which uses part manual and part computer track recognition [BNL-1152] 01 pt034 N68-10557 Excited spin wave interaction n measurements on yttri-(COO-1488-9) 14 m2330 N68-24677 Orthogonal mechanical scanner with electronic pulse-length discrimination for automatic evaluation of nuclear track and solid detector plates [ANL-TRANS-509] 01 p0066 N68-10873 Spin and parity calculations for meson production in pion-proton interaction [COO-1195-110] 14 p2305 N68-24680 [CERN-68-10] 14 p2305 N68-24680 Design and operation of emulsion chambers exposed to atmospheric radiation in Bolivia and Japan 01 p0115 N68-10930 One particle spin in external electromagnetic field (15-T-95) 14 p2310 N68-25037 Models of peaks, mores of secondary emission Regge pole domination of strong in matrix approach to bootstrap of rising ([TH/222] ong interactions, and S rising trajectories 02 p0246 N68-11514 Effects of two-particle spin-orbit nucleon-nucleon interactions on oxygen 16 and nitrogen 16 nuclei 14 p2315 N68-25228 ries of seconda [TH/68/13] ponent wave function of Lorentz type used to e free particle with rest mass and spin 5] 19 p3332 N68-31611 effect due to sign change in Omega Regge TH/2201 IORNL-TM-21201 02 p0246 N68-11515 Computer analyses of m containment systems [AFAPL-TR-67-91] Diffe em for calculation of linear induc-SU/3/ multiplet structures for higher meson 03 p0395 N68-12623 RIFP-741 20 p3544 N68-32786 Earth rotation produced by gravitational accretion of articles - rotation period acquired by planetoid to ng nucleon-nucleon poten-REPT.-67-191 05 p0734 N68-13918 21 p3737 N68-34015 Conference on SU/3/ related to particle coupling, decay rate predictions, scattering amplitude, parity, and spin reactions (CONF-670725) 22 p.3919 N68-34825 Scanning and m particle tracks from [UCRL-17635] systems for analyzing mber photographs 05 p0660 N68-14228 SU/3/ and strong decays of baryon resonances re-nted to systemization of baryon spectrum based on arity and spin states 05 p0709 N68-14281 -22 p3920 N68-34828 ICERN-67-26, V. 11 Spin pho ice decay in two body 22 p3922 N68-34979 05 p0641 N68-14283 matic field theory proof of superconvergence as for scalar case and for particle spin 22 p3923 N68-34989 Large hydrogen bubble chamber for observation of eutrino interaction physics in high energy particle [FTD-MT-66-74] Nuclear structure, and spin and parity assignments of arious nuclei 05 p0642 N68-14286 hnical parameters, and operational planning for heavy liquid bubble chamber 23 m4117 N68-36578

05 p0642 N68-14289

05 p0699 N68-14300

(TUEP-68-18)

Optical particle tracking system for heavy liquid bub-

Design, and development of wide angle lones for ubble chamber photographic particle tracking 05 p0699 N68-14302

Liquid hydrogen bubble chamber spectrography of L-mesons in kaon-proton interactions [UCRL-17833] O5 p0712 N66-14430 ioctory optics, magnet requirements for precision, composite spectromsters, envelope optics, and shaping systems 06 p0885 N68-15802 06 p0882 N68-16087 particle tracks 07 p1040 N68-16305 on Regge trajectories in lar scattering process U7 p1042 N68-16416 ng and truck s 67 p0997 N68-16544 Computation of space coordinates from photographs of particle trajectory points in bubble chambers [JINR-P1-3487] 07 p1046 N68-16588 pries in retarding modirror cusp magnetic field by 08 p1219 N68-17968 rence, and exchange nucleon scattering 09 p1389 N68-18621 Fermion trajectory inte mechanisms in backward pio [TH/236] Spectrometer design consisting of several speck chambers, Fe absorbers, and scientillators for determin-ing energy of high energy particles from track curva-tures with ionization chambers [FTD-HT-23-743-67] 11 p1700 N68-21488 12 p1924 N68-22221 Axial injection studies on 88-inch cyclotron to determine motion of injected particles through magnetic field in upper pole hole [UCRL-18016] 13 p2047 N68-23200 Changes to RHEL geometr gram for bubble chamber track [RHEL/R-150] al reconstruction pro-Correcting for geometrical to ensurements of particle tracks 14 p2305 N68-24706 Charged particle energies strength versus arbit radius in to [CEA-R-3383] versus magnetic field abular form 14 p2307 N68-24834 and boundary trajecto 15 p2512 N68-25675 Neutron energy threshold detector systems using olid state nucleur track detectors and finale radiator 15 p2467 N68-26437 tic mirror cusp pl particle tracks on bubble and marking from mahyling.

[SLAC-82]

Mass formula in broken SC/2,C/ and application to nucleon and delta Regge trajectories

[KFKL-5/1968] 16 p2738 N68-27906 Computer methods for calcuries and current collected by cl probe mounted in satellite skin [NASA-CR-96155] lating particle trajecto-roular planer Langmuir 19 p3343 N68-31845 trajectories by group matic constraints 19 p3335 NGS-31885 Classification of Regge theoretical arguments or cines [REPT.-48/21] eory for classifying Algebraic methods in Regge th Regge poles according to trajector 22 p3924 N68-34991 Retarding properties of no 22 p3930 N68-35528 occasing nuclear parti-earch data 22 p3844 N68-35623 High speed computers for proc cle tracks and other physical resear urement in glass and scattered light 22 p3933 N68-35703 Lexan polycarb (KAPL-3412) Reggeized Tadpole model used to investigate p-a

Ac in ca

A

Pi

rats,

PATH

C

R

H

L

very [NR

PATT

PATT

NT NT

D

L reco

Sattr

P

spec [AL

D

digi (A)

S [M

in re

tory

PATH

hear.

Range and momentum identifications of plons, suons, and electrons from docay modes of positive K-sesons and measurement of relative branching ratios UCRL-18245] 23 p4120 N68-36752 [UCRL-18245] Classification of Regge trajectories according to broken SL/2,C/ algebra 23 p4122 N68-36846 [KFKI-1/1968] Helicity scattering of particles in potential fields (JINR-P2-3848) 23 p4125 N68-36947 Regge trajectories and re [IC-68-36] s in quark model 23 p4128 N68-37027 High speed image digitizer for track chamber photo-BNL-12679] 24 p4258 N68-38111 ndies of particle trajecto-es with water drops 24 p4289 N68-38415 PARTICLES

NT AEROSOLS

NT ALPHA PARTICLES

NT ANIONS ANTINEUTRINOS
ANTINUCLEONS
ANTINUCLEONS
ANTIPARTICLES
ANTIPARTICLES
ANTIPROTONS
ARGON PLASMA
ARTIFICIAL RADIATION BELTS
ATOMIC BEAMS
BARYON RESONANCES
BETA PARTICLES
BOSONS
CATIONS
CESIUM PLASMA
CHARGED PARTICLES
COLD NEUTRONS
COLD PLASMAS
COLLISIONLESS PLASMAS ANTINEUTRINOS NI NI NI NI NI NI NI NI COLLI PLASMAS
COLLISIONLESS PLASMAS
CONDUCTION ELECTRONS
CORPUSCULAR RADIATION
COSMIC PLASMA
CYCLOTRON RADIATION
DELTESTIMA BLASMA M NT CYCLOTRON RADIATION
DEUTERUM PLASMA
DEUTERONS
DROPS (LIQUIDS)
ELECTRON BEAMS
ELECTRON PLASMA
ELECTRON PRECIPITATION
ELECTRON RADIATION
ELECTRONS MANA NT NT NT ELEMENTARY PARTICLES NT NT FERMIONS FINES FOG FREE ELECTRONS
HELIUM PLASMA
HIGH ENERGY ELECTRONS
HIGH TEMPERATURE PLASMAS
HOT ELECTRONS HYDROGEN PLASMA HYDROGEN PLASMA
HYPERONS
INNER RADIATION BELT
ION EAMS
ION CYCLOTRON RADIATION
RAONS
LIGHT BEAMS
MAGNETICALLY TRAPPED PARTICLES
MESON RESONANCES
MESON RESONANCES NINT MESON RESUMANCES
METAL IONS
METAL IONS
METAL PARTICLES
METAL POWDER
METALLIC PLASMAS
MICROPARTICLES
MIST NT NT MINT NT NT NT NT NT MIST MOLECULAR BEAMS NEUTRAL BEAMS NEUTRAL PARTICLES NEUTRAL PARTICLES
NEUTRINOS
NEUTRON BEAMS
NEUTRONS
NONEOUILIBRIUM PLASMAS
NUCLEONS
NUCLEONS
PLASMAS
NUCLEORS
PLASMAS
NUCLEORS
PHOTOELECTRONS
PHOTONE BEAMS
PHOTONEUTRONS
PHOTONS NT NI NI NINININI NINININI NININI PHOTONEUTRONS
PHOTONS
PHELECTRONS
PLASMA CLOUDS
PLASMA JETS
PLASMA LAYERS
PLASMA SHEATHS
PLASMAS (PHYSICS)
POLARONS
POLLEN NIN NEXT NT POLLEN

POWDER [PARTICLES]
POWDERED ALUMINUM
PRIMARY COSMIC RAYS
PROTON BEAMS
PROTON BELTS
PROTONS PROTONS
RADIATION BELTS
RANDROPS
RAREFIED PLASMAS
RECOIL PROTONS
RELATIVISTIC PARTICLES
RELATIVISTIC PARTICLES
RELATIVISTIC PASMAS
SOLAR CORPUSCULAR RADIATION
SOLAR COSMIC RAYS
SOLAR PROTONS
SOLAR PROTONS
SOLAR VIND
SOOT
THERMAL NEUTRONS SOOT
THERMAL NEUTRONS
THERMAL PLASMAS
TOROIDAL PLASMAS
TRAPPED PARTICLES
TRITONS
VANADYL RADICAL NT Atmospheric fluorescence for cosmic particle detec-[NYO-3038-5] 01 p0131 N68-10466 Chemical, biological, and physical properties of suspended, colloidal, and dissolved particles in natural water [K-L-6119] 03 p0318 N68-12719 Impaction data for plate colla particles from vulcano eruption (AD-663800) ector exposed to falling 08 p1169 N68-17771 Radioactive fallo ver Great Britain d allout in rainwater and airborne dust in during mid 1967 [AERE-R-5575] 09 p1334 N68-18894 Physicochemical properties of radioactive aeros from nuclear explosions, and fallout from atmosph by clouds and precipitation 11 p1735 N68-21528 Logical contradiction of existence of tachyons, parti-cles that travel faster than speed of light [NASA-CR-94241] 12 p1914 N68-21900 Core particle models of nucei consisting of excited core with extra particle 14 p2309 N68-24906 Magnetic behavior of single domain particles, and agnetometric demagnetization tensor 16 p2716 N68-27813 Measurement and behavior of airborne radionuclides at different latitudes since 1962 [BNWL-SA-1739] 17 p2880 N68-29317 Research programs in geology, hydrology, aerosols, mineralogy, geophysics, and particle studies (BNWL-481, V. 2, PT. 3) 17 p2827 N68-29512 Physical properties and applications of dust struc-res in space technology [NASA-CR-1136] 20 p3602 N68-32976 cting cloud particles 21 p3695 N68-34789 ear and explosive destruct concepts for nuclear rocket engines [NASA-CR-96699] 22 p3909 N68-34833 Fluids of particles with short reweak long range attractive interacti [TR-II-1] 22 rt range repulsion and 22 p3978 N68-35450

Particle comminution due to hypervelocity impact 24 p4271 N68-37524 Liquid lead and indium evaporated particle velocity 24 p4245 N68-37741

PARTICULATE FILTERS
U FLUID FILTERS

PARTITIONS (MATHEMATICS)

Lithium ions in krypton system for calculating cluster ion formation [BMWF-FBK-67-74] 08 p1138 N68-17294 Problems in partition the analysis, and number theory [AD-665400] ory, topology, asymptotic 11 p1721 N68-20613

Partition functions and there igh temperatures for hydroge dynamic properties to rintomic and diatomic molecular ions [NASA-TN-D-4523] 11 p1806 N68-21732

[NASA-CR-94350] 12 p1924 N68-22214

slating lower bounds to 14 p2309 N68-24932

14 p2280 N68-24979

Inequalities obtained for inertia triple of partitioned matrices using theorems on skew-triangular block [AD-673286] 23 p4088 N68-36547

PARTS U COMPONENTS

PASSBANDS U BANDPASS FILTERS U BANDWIDTH

U BANDWITH
PASSENGE AIRCRAFT
NT BOEING 707 AIRCRAFT
NT BOEING 720 AIRCRAFT
NT CH-47 HELCOPTER
NT CH-53 HELCOPTER
NT CV-990 AIRCRAFT
NT CV-990 AIRCRAFT
NT CV-990 AIRCRAFT
NT CV-990 AIRCRAFT

NT NT

CV-990 AIRCRAFT
DC 8 AIRCRAFT
F- 28 TRANSPORT AIRCRAFT
HFB-320 AIRCRAFT
TU-124 AIRCRAFT
VC-10 AIRCRAFT
VISCOUNT AIRCRAFT NT

velopment of medium range large commercial air-for passenger transportation in Europe "T.-6] 03 p0301 N68-12297 craft for passenger transportation [REPT.-6]

Structural component senger jet aircraft design ents and fail-safe tests for pas-16 p2590 N68-27910

Specific aircraft demand determined for city pairs in VTOL intercity passenger transportation study [R-144, V. 4] 21 p3624 N68-33937

Generalized aircraft requirements for city pairs etermined in intercity VTOL passenger transportation [R-144, V. 3] 21 p3624 N68-33938

Factors affecting demand and cost function esti-ates for intercity passenger transportation by VTOL R-144, V. 21 21 p3624 N68-33939

Methods and results of demand study for intercity passenger transportation by VTOL aircraft [R-144, V. 1] 21 p3625 N68-33940

Study of severe turbulence encountered by civil air-craft with flight load recorders to determine aircraft re-

23 p3991 N68-37016 [ARC-CP-974] PASSENGERS

Circadian rhythms and effects of long distance flights on psychophysiological responses of passengers and [FAA-AM-68-8] 18 p3010 N68-30277

imated maximal operational capacity for one ager transportation to Moon and Mars 20 p3593 N68-32566 Approxim (D-83)

PASSIVITY

PASSIVE SATELLITES

NT BEACON EXPLORER A

NT BEACON SATELLITES NT ECHO SATELLITES
NT ECHO I SATELLITE
NT ECHO 2 SATELLITE
NT EXPLORER 22 SATELLITE
NT PAGEOS SATELLITE

Geodetic position determination using method of

06 p0833 N68-15340 Materials development for 425 foot diameter passive communications satellite with self erecting properties [NASA-CR-93423] 09 p1431 N68-18704

Performance characteristics of two passive commentations satellite configurations using solar radiat

INASA-CR-665751 09 p1431 N68-18810 Structural weight analysis and design charts on feasi-bility of applying stationkeeping concepts to passive communications satellites [NASA-CR-66574] 09 p1431 N68-18812

09 p1431 N68-18812

Proposed test of theory of gravitation by an ashielded earth orbiting gyroscope using passive [NASA-CR-94933] 15 p2509 N68-26282

wire grid experimental radio links 16 p2773 N68-27920

ng Retrodirective Opti-ommunication relay via 19 p3243 N68-31763

n in Germany for artifi-22 p3877 N68-35538

EX

oned lock

5547

97

10

in

irs on

ti-)L

19

ty

6

influence of carbon, platinum, and magnesium chloride on corresion of stainless steel, and formation of passivation film on steel samples immersed in mag nesium chloride (EURAEC-1918) 07 p1010 N68-17005

Catalytic behavior of Fe and Pt electrodes in hydrogen oxygen fuel cells [NRL-6718] 21 p3654 N68-34645

Treatment of metallic surfaces for use with space storable propellants [NASA-CR-97062] 23 p4076 N68-36651

Patch-type tests of ethylene-propylene rubber expu sion bladder material for thermal sterilization compat bility studies

23 p4162 N68-37411

PATCHING U MAINTENANCE

PATHOGENESIS

Dose-tissue volume factors in pathogenesis and morphology of laminar cerebral cortex lesions [NASA-TM-X-59783] 14 p2203 N68-25623 PATHOLOGICAL EFFECTS

Effects of unicellular algae diet on composition of steric microflora in rats

08 pl131 N68-17747 ses of guinea pigs and

monkeys to tailward acting impact accelerations [NASA-CR-92039] 10 p1470 N68-20480

Lightning strike pathology in livestock and evalua-on of patho-physiologic response to simulated lightn-ng discharges in sheep and tissue culture cells 11 p1635 N68-21039

Infection resistance and radiation effects on mice determined after varied exposures to space cabin en-vironment and ambient conditions (NASA-CR-62065) 12 p1825 N68-22577 12 p1825 N68-22577

Acute pathological effects and mechanisms of injury cats vibrated erect with vertical sinusoidal motion 14 p2200 N68-24888

Auditory damage criteria of noise exposure and hearing loss [REPT.-68-2] 16 p2603 N68-27110

Pathological effects of high oxygen consumption in rats, and pathomorphological changes in lungs
17 p2818 R68-28505

NT HUMAN PATHOLOGY

Cloud seeding, typhoons, earthquake forecasting, and pathology [JPRS-43872] 05 p0759 N68-14271 Ruby and neody induced retinal damage [MR-68-4] 16 p2596 N68-27349

ological changes in respira-tems of rats 21 p3632 N68-33912 Hyperoxia induced patholory and cardiovascular syste

Lane identification in Omega system /long range, very low frequency hyperbolic radio navigation/
[NRL-MEMO-1876] 22 p3909 N68-35477

PATTERN DISTRIBUTION
U DISTRIBUTION [PROPERTY]

PATTERN RECOGNITION
NT CHARACTER RECOGNITION
NT GRAPHOLOGY

Detection and scaling of statistical differences between visual texture [NASA-CR-90033] 01 p0033 N68-10127 Linear and quad criminators for pattern

(IRA-TR-12) 01 p0040 N68-10211 istical expectation and corresponding steel and informativeness for pattern recognition 01 p0042 N66-10310 rrelations of distributed

Pattern recognition, functionals, and entropy, and comparisons of spectral and Fourier analyses for speech recognition [AD-659197] 01 p0034 N68-10412

Discrete propagation based n digital pictorial pattern analysis [AFCRL-67-0467] ed mathematical models for 01 p0035 N68-10618

[MTR-305] 01 p0061 N68-10885 d drawn line patterns 03 p0324 N68-11933 Method of recogni [NASA-CR-91072] Redundancy in binary patterns from source signals treated as Markov information source and as finite

(USL-854) 03 p0320 N68-12015

ng language FLiP used as paradigm for spicmetation of pattern matching feature e of pattern manage nipulating language 03 p0324 N68-12043 esign and impresent a raide of LISP symbol is

[NASA-CR-91048]

03 p0321 N68-12059 Automatic control based aition, delayed speech feet properties of speech [NASA-TT-F-11391] on phonetic pattern recog-back offsets, and acoustic 04 p0483 N68-13354

Cybernetic systems em control - manage-ision, data processing. 06 p0007 N68-15337

the to classify vitami means for classifying Baby chick elects

06 p0778 N68-15540

Mechanized speech reco rns, information extraction th communication and in classification of pat other studies dealing os p0798 N68-15541

ra recognition machines

06 p0819 N68-15583 Approximation algo cognition by machine for geometric pattern

06 p0819 N68-15590 Single equivalent representing informat [NASA-CR-86024] extractor system for parameters of speech 06 p0778 N68-15768

Algorithm for perceptr tem with input correla [FTD-HT-23-582-67] 06 p0821 N68-15874

Techniques for a ettern recognition and 07 p0997 N68-16543 (PPAD-628E)

ignrithms and applica-era classification 07 p0977 N68-16717 Generalizat tion of fuzzy sets concept to [TR-EE67-7]

Thin film, solid state materi on techniques for star detec-adout for star pattern redeposition and fabrica-ter strips with electronic ognition from spinning NASA-CR-926711 07 p1068 N68-16822

i to auditory patterns by 97 ±0967 N68-16995

or post N68-17018 s for self organ

(RADC-TR-67-556) 07 p0971 N68-17025 ward programming, of finite sequentia (TR-EE67-9)

07 p0981 N68-17167 of visual information Digital compa processing in hur [GA/EE/67-1] 08 p1136 N68-17839

Development of machine with throsh [AFOSR-68-0037] pattern recognition curve fitting 00 p1152 N68-18038

TR-15] 09 p1308 N68-18472 i image scanning for

09 p1310 N68-18805 on system for identify-to data 09 p1320 N68-19229 Spaceborne pattering and classifying of [NASA-CR-999]

nieped for character ad auditory displays 9 p1290 N68-19235 recognition, pattern pe [NASA-CR-77888] Information proce ic systems 10 p1478 N68-20572

Summary of U.S.S.R. recognition of patte (FTD-HT-66-570) 11 p1666 N68-20763

Summary review of pa [REPT.-07931-1-F] 1 p1669 N68-21329 Skeletons of stable pi 11 p1732 N68-21571

Pattern recognition by resulting in low false alarm (RAE-LIB-TRANS-1265) at frequency filtering

11 p1665 N68-21815 lagic unit for par Frequency coded to [NASA-CR-1035] 12 p1826 Not-22448

pattern recognition applied to class of game [SRC-107-A-67-45] 13 p2032 N68-23219

icategory, pattern clas-tatistical patterns 13 p2093 N68-23382

nt functions for AFOSR-48-0381 13 p2093 N68-23383

and applications to pat-13 p2034 N68-23388

[AFOSR-48-0515] of pattern recognition 13 p2005 N68-23653 data for face centered acture identification 13 p2084 N68-24002 ard diffra

res used for pat-13 p2096 N68-24049

Pattern recognition of a is, and mathematica ion making, and op-NASA-CR-946[0] 13 n2037 N68-24258

and recognition of on random process 14 p2197 N68-24788

er patterns freq TR-68-40-ES 15 p2460 N68-26297

riric petterns for auto ne recognition 16 p2629 N68-27625

ation function for 16 p2697 N68-27737

Finite stopping rules and sature-ordered sequential p ased on smillistage decision erametric metho ra recognition sy

16 p2635 N68-27816 es for studying topological perception physiology of rat

NASA-CR-958111 18 x3006 N68-29948 ligital perceptron b on optimum coding an (FTD-MT-24-203-47) 18 p3039 N68-2994

[AMRL-TR-68-121 pattern recognition 18 p3010 N68-30332

Vander Lugt tec matched spetial filte (NADC-AE-6764) 18 p3124 N68-30441 sals in pattern iden (FTD-MT-24-192-67) 18 p3015 N68-30457

Visual perception and i pattern recognition 18 p3016 N68-30796 in as information system

19 p3269 N68-31306

identification by readal perception s [FTD-MT-66-158] 19 p3216 N68-31496 ttern charification of

19 p3256 N68-31500 plied to pattern recog-

Potential function nition and system ide [TR-EE68-8] 20 p3453 N68-32751 als to cotimum deci

(IRA-TR-16) 20 p3514 N68-32799

21 p3666 N6B-34758

TR-68-7 22 p3841 N68-35317 [ECOM-0066-1] 22 p3831 N68-35404

Problem of patte (FTD-HT-47-444) 22 p3843 N66-35970 ne cress corre

23 p4026 N46-36482 uthesis for probabilistic revieria 24 p4274 N68-37500 and for iterative design cation FTD-MT-23-504-671

24 p4238 N68-37592

A-893

SUBJE

ty of st PENETE

PENETE Non tion in [NAS Rest (SC-D CRR Cak

Into cy

Nue plane NAS

Pre

low pr

Mor trons **INAS** on Ex Rac ticles [CEA Ne distant [GA-

AP ITE Ca PENET PENET

Co

CTC

Re evalu [NA On Li (NA Di for meanth PENNI

(RE F MA PENN V AD

fection and discrimination FTD-HT-23-1044-671 24 p4208 N68-38337 Pattern recognition optimization by minimizing number of mutually correlated characteristics [FTD-HT-23-962-67] 24 p4241 N68-38429 PAULI EXCLUSION PRINCIPLE Nonrelativistic quantum mechanics for particle in-ractions under gravitational forces NTH-68/2] 15 p2506 N68-25725 (NTH-68/2) Pauli algebra and restricted Lorentz group (REPT.-1) 22 p3900 N68-35389 PAVEMENTS Horizontal shear strength of grout keys and connec-[PB-176868] 10 p1607 N68-20109 Stabilization of materials for substrate and base of pavement with hydrated lime, cement, and asphalt 10 p1617 N68-20393 Asphalt coverings for highways and airport runways 10 p1543 N66-20499 Correlation between Pennsylvania and California drag testers for measuring pavement surface resistance [MR-633251] 13 p2048 N68-23622 Effect of uniformly distributed lateral load on buck-ling of combinuously supported beam [NYU-AA-67-103] 13 p2162 N68-24034 Effect of wheel braking on directional control of pneumatic tires on pavement [NASA-TN-D-4602] 14 p2186 N68-25313 Interactions between pr SUFFACES [NASA-TM-X-61108] 14 p2265 N68-25343 Standarized methods for analyzing ground flotation characteristics for aircraft of various designs based on type of airfield construction [SEG-TR-67-52] 19 p3199 N68-31777 19 p3199 N68-31777 PAYLOAD MASS BATIO Optimal payload trejectory characteristics for winged booster vehicles [NASA-TM-X-60325] 06 p0909 N68-15313

Computer program for trajectory optimization and payload maximization in multistage launch vehicles [NASA-TN-D-4729] [9 p3368 N68-31989] PAYLOADS

Payload considerations for interplanetary probe seasuring solar corpuscular radiation, magnetic fields, and meteoroids at perihelion 06 p0915 N68-15024

Payload type and density effect on space flight systems performance (BMWF-FB-W-67-18) 06 p0916 N68-15519 OV-1 general purpose orbital vehicle for acientific 07 p1079 N68-16380

Engineering aspects of instrumentation and circuitry for pilot-static probe payloads for Nike-Cajun rockets [NASA-CR-93251] 08 p1245 N68-17867 Payload preparations, and launch windows for Black trant acounding rockets [SRFB-009] 09 p1429 N68-18494

Scientific payloads for a to Mars and Venus mission [NASA-CR-66561] ed space flights common 09 n1438 N68-19249 Experiment payloads for manned space flight missions to Mars and Venus [NASA-CR-93569] 09 p1427 N68-19354

Technical and management studies defining Apollo applications program payload integration tasks [NASA-CR-61762] 13 p2155 N68-23586 Simulator requirements and flight program evalua-tion of Apollo applications program payload integra-

13 p2155 N68-23683 INASA-CR-617611 -Payload integration and feasibility analysis for Apollo Applications Program /AAP/ for low earth, synchronous, and lunar landing orbits. [NASA-CR-61760] 13 p2156 N68-23725 Design plan, experiments, and psyload integration for Apollo applications program [NASA-CR-61759] 13 p2156 N68-23888

Test program summary for Apollo Applications Program combined mission payload integration
[NASA-CR-61789] 14 p2350 N68-24553

Subsystem development and qualification test plan for Apollo applications program combined mission payload integration NASA-CR-61787] 14 p2350 N68-24554

Hardware configurations and integration of 23 scien-fic experiments into Apollo Applications Program tific experiments in mission AAP-IA [NASA-CR-61785] 14 p2343 N68-24575

Prelaunch checkout and payload integration test equirements for combined mission flights of Apollo [NASA-CR-61784] 14 p2350 N68-24576 Payload and module integration development and ualification test plan for combined mission flights of

Apollo applications program [NASA-CR-61786] 14 p2350 N68-24577

Dynamic response of axisymmetric hammerhead sodel to unsteady aerodynamic loading in wind tunnel [NASA-TN-D-4504] 15 p2380 N68-25916

Cost versus weight optimization for multistage rocket vehicles [NASA-TM-X-60089] 16 p2772 N68-27530 Computing optimal payload for orbit transfer from near earth parking orbit to synchronous orbit by

nuclear electric propu (DLR-FB-67-86) 16 p2770 N68-28279 Load relief study for control system to improve aunch probability of Saturn 5 booster with Voyager avloads

payloads [NASA-CR-61867] 17 p2976 N68-28895 Service manual for Capache payload recovery stem for sounding rockets of Nike-Cajun and Nike Apache class [NASA-TM-X-63277] 18 p3002 N68-30228

Mounting and acceptance tests for sounding rocket 19 p3372 N68-31198

Control loop system for earth oriented payload despin from dual-spin satellite configuration 20 p3597 N68-33540

Refurbishment and reflight of instrumented payload on Aerobee rocket for X ray astronomy program
[NASA-CR-96716] 21 p3774 N68-34803

Load relief control system to improve launch probability of Saturn 5 boo [NASA-CR-61956] otter with Voyager payload 22 p3966 N68-35622

PBRE [REACTORS]
U PEBBLE BED REACTORS

PCM [MODULATION]
U PULSE CODE MODULATION

PDM [MODULATION]
U PULSE DURATION MODULATION

PEACETIME

Public planning for national space program in peacetime economy following cessation of Vietnam hostilities [NASA-CR-93356]

08 p1263 N68-18120

Lichens and free-living microorganisms on mountain peaks and their nitrogen fixation abilities [NASA-CR-92553] 06 p0840 N68-15809 Models of peaks, mor nts, and boundary trajectories of secondary emiss [TH/68/13] 15 p2512 N68-25675

PEARSON DISTRIBUTIONS Pearson distribution of doubly truncated gamma

(NASA-CR-61184) 02 p0231 N68-11868 PERBLE BED REACTORS

Thermal and stress performance of pebble bed reac-

03 p0368 N68-11984 [AAEC/TM-344] Perturbation theory approuds of pebble bed reactor ch to fuel management study of pebble b [AAEC/E-161] 03 p0369 N68-11988 obble hed reactor fuel cycle

Grind-leach process for pebble h - comminution of beryllia matrix fu [AAEC/E-162] 03 p0346 N68-11989 Erosion behavior of pebble reflector and pebble flow data for reactor design [AAEC/TM-339]

03 p0369 N68-11999 Burnup survey of plutonium-thorium-beryllium oxide fuels and fuel selection for pebble bed reactors [AAEC/TM-330] 03 p0369 N68-12004

Thermodynamic design of regenerative pebble bed [ARL/ME-288] 16 p2640 N68-28225 Pebble bed heater for providing high enthalpy air

stream for supersonic combu [COA-NOTE-AERO-200] in studies 17 p2867 N68-28367 Computer program for computation of heat transfer nd pressure reduction in regenerative pebble bed heat (ARL/ME-290) 18 p3188 N68-30291

a for pebble bed reactor ium cycle (JUL-542-RG) 22 p3910 N68-35614

lnert particle effects on particle to fluid mass transfer from single sphere at low Reynolds and high Peclet number flow 18 p3062 N68-30036

U SOIL SCIENCE

NT SHOT PEENING

Precision glass-bead peening lant tank surface corrosion prot [NASA-TN-D-4288] ing equipment for propel-04 p0514 N68-12890 PEGASUS SATELLITES

Electrical breakdown of Mylar micrometeoroid de-tectors on Pegasus panel under simulated space condi-[NASA-CR-91345] 04 p0525 N68-13147

un satellite measurements in near-ency of meteoroid penetration in lated to zodiacal light data 16 p2761 N68-27495 Explorer and Pegasus satellite earth space on frequency of m metal test materials related to a

PELLETS

Time, temperature, metallization, and other arametric effects on reduction hardening of unfired magnetite pellets [BM-RI-7069] 05 p0618 N68-14111 ufacturing pellets from powdered

Pelletizer for manufacturing | formula foods in small quantities [SAM-TR-67-75] 06 p0772 N68-15135

Purification and precision pelletization of sulfur for neutron dosimetry [K-1720] 12 p1838 N68-22633 Lead batch composition effects on pelletizing and pellets physical properties

13 p2083 N68-23829 FRG - computer program for evaluating heat over-fluxes due to pellet eccentricity or cladding irregulari-ERT/ING/67/111

15 p2500 N68-26114 Production of uranium plute lets for irradiation test capsules [WARD-3791-12] nium carbide fuel pel-15 p2505 N68-26798

Preparing high density uranium monocarbide pellets by reaction sintering of uranium dicarbide and uranium 18 p3117 N68-30433

Thermal conductivity measurements on sintered pel-lets and compacted uranium dioxide fuel in reactor pile [GEAP-5100-6] 20 p3532 N68-33132

Trace impurity determinations in pelletized and powdered uranium dioxide nuclear fuels
[NASA-TT-F-11869] 24 p4214 N68-37742 s in pelletized and pow-

PELTIER EFFECTS

Peltier heating, and cooling current measurements n molecular kinetics of solid-liquid interface NRL-6637] 09 p1406 N68-18392

PENBULOUS GYROSCOPES
U GYROSCOPIC PENDULUMS PENDULUMS

NT GYROSCOPIC PENDULUMS

Detection of anomalies in binocular vision by means of screening devices which use Pulfrich pendulums [AMRL-728] 01 p0007 N68-10149 Focused ruby laser radiation effects on pendulum recoil momentum

01 p0072 N68-10195 Pendulum measurements taken with Cambridge and Italian Geodetic Commission appearatus along with first order world gravity net and standardization data [AFCRL-67-0324] 06 p0839 N88-15691

Dynamic stability of pendulum during combined parametric and forced excitation
[ASRL-TR-134-5] 10 p1559 N68-20124

ndulum apparatus 11 p1690 N68-21337 Gravity measurem nal pendurum sent of inertia 15 p2511 N68-26618 dum theory applied to measurement of m [BRL-MR-1891]

Design and testing of automa ir high precision relative graving natized vacuum pendulum 18 p3072 N68-29747 (ACIC-TC-1359) ts on molten aluminum halites

Viscosity measurements on enclosed in hollow glass pendu 23 p4016 N68-37352

PENETRANTS m and application of indigenous dye

Preparation a penetrants set [A8] 07 p1002 N68-16235 ing textbook on liquid 17 p2891 N68-28777

NT MAGNESIUM PERCHLORATES IN

EX

105

11

35

or

33

nd

29

4

R

Classroom training text liquid penetrant testing to lo ty of surface discontinuities [NASA-CR-61229] book on sondestructive 17 p2893 N68-28791 nt of chemical penetra-036 X ray emmission mea on into reinforced plan 23 p4084 N68-37022 ENETRATING PARTICLES
U CORPUSCULAR RADIATION PENETRATION. tecting lack of penetra-Nondestructive testing for de tion in aluminum fusion welds [NASA-TM-X-60590] 890 01 p0067 N68-10131 tions using high speed Remote and rapid soil is earth penetrating projecti ISC-DC-67-1922 01 p0057 N68-10379 Philberth probe for pe 147 iting through polar ice (CRREL-SR-119) 03 p0342 N68-12016 Calculations of pulse into cylindrical conducts [LA-3500] magnetic field penetration 03 p0384 N68-12417 tration of plate in half Numerical analysis of p plane within supersonic flow [NASA-TT-F-[1687] 12 p1862 N68-22424 Predicting penetration of low pressure gaseous plasma [D1-82-0706] electromagnetic waves in 14 p2322 N68-24541 r penetration of fast elec-ingh aluminum targets 15 p2552 N68-26139 Penetration codes for s flare proton spectrum in-f aluminum and of tissue 16 p2720 N68-27229 [NASA-CR-95141] detector, impact detector, to study micrometeoroid rate, and radiation effects Stainless steel penetrat and solar cell degradati impact damage and punc on Explorer 23 satellite (NASA-TN-D-4284) 16 p2774 N68-28198 Radioactive aerosol us ticles into filtering layers [CEA-R-3347] d to study penetration of par-17 p2921 N68-29025 Neutron dose distribution and spectra as function of istance from neutron source in penetration study GA-8485] 17 p2934 N68-29053 IGA-84851 Condensation method for determining penetration coefficient of fast positive hydrogen ions into metals [CTO-451] 17 p2939 N68-29286 Approximation for barrier penetrability for time de-pendent potentials [TTEF-5 [7] 19 p3327 N68-31181 netration predicted by superconductivity 20 p3560 N68-32260 PENETRATION BALLISTICS
U TERMINAL BALLISTICS Response character evaluated for use on h [NASA-TN-D-4454] 10 p1609 N68-20364 Design and operation Luna 13 [NASA-CR-94587] 13 p2067 N68-23459 Dilatometers, bore hole jucks, and penetrometers, mability in bore holes on 13 p2153 N68-24180 [NASA-CR-61202] PENNING DISCHARGE Self absorption reso eclotron harmonics by s spectra at electron ry plasma superimposition on Penni (IPP-3/60) 02 p0252 N68-11157 enning discharge in in field for collisionless of ous magnetic mir-03 p0401 N68-12501 (JINR-P9-3589) in Penning discharge 09 p1401 N68-18562 Penning discharg netic mirror fields (REPT.-68-05) 12 p1946 N68-22157 ons of ele is in penning discharge 14 p2326 N68-25235 MATT-TRANS-S71 ENNSYLVANIA Visibility fores g for Pittsburgh, Primcylvania (AD-661279) 03 p0364 N68-12248 survey procedures, and NASA-CR-95093] 15 p2580 N68-26753 86 final demand sectors input-output coeff. in Philadelphia regio [NASA-CR-95092]

PENTABORANES Preparation of pentaborane-11 in bench scale qua TR-141 02 p0176 N68-11390 U CHLORIDES PENTAERYTHRITOL TETRANITRATE U PETN PENTANES NT NEOPENTANE effects on synthesis of Adjacent acetate group cyclopentane aminopolyoles 03 p0312 N68-12277 Chemical shock tube at resulting from gas phase re-ygen in low temperature reg udy of peruside formation action of n-pentane with on-10 p1484 N68-19928 15 p2407 N68-26034 Liquid vapor equili methane pentane systems 22 p3822 N68-35062 Radiolysis of liquid pentane by electron energy 24 p4219 N68-38265 PENTANONE Chemical proce [NYO-2668-15] yeis of liquids 13 p2011 N68-23304 on circuits, and errors in cir-and transistors 18 p3052 N68-30133 Transpor cuits using both pentod [FTD-HT-23-946-67] PENUMBRAS Calculations for effect toff in presence of penulo geomagnetic lutitudes r effective rigidity of geomagnetic cu-f penumbra, and rigidity change due 06 p0902 N68-15067 PEPTIDES Infrared spectra of uncollapsed monolayers of olypeptides correlated with behavior at air-water in-[NRL-6554] 02 p0173 N68-11049 Cleavage feasibility in peptides of acid amide protec-04 p0456 N68-13491 Dicyanamide mediated synt [UCRL-17936] nis of dipeptides 11 p1635 N68-21138 ptide sequences in thermal protenoid micros [NASA-CR-94534] 13 p1998 N68-23193 Sequential and st tide synthesis cal reactions in polypep-15 p2392 N68-26028 Gas chromatographic separation of tripeptide 15 p2407 N68-26036 Conformational studies of polypeptides containing consomatic and nitroaromatic side chains 18 p3020 N68-29863 Oligopeptide and polypept rebiological conditions, and p rization of synthetic polymen ide formation undi reduction and chara-19 p3213 N68-32146 PERCENTAGE U RATIOS PERICEPTION
NT AUDITORY PERCEPTION
NT AUTOKINESIS
NT BINAURAL HEARING
NT CONSCIOUSNESS
NT CRITICAL FLICKER FUSION
NT EXTRASENSORY PERCEPTION
NT BUYER NT EXTRASENSORY PERCEPTIN
NT FLICKER
NT PAIN SENSITIVITY
PROPRIOCEPTION
NT SENSORY PERCEPTION
NT SOUND LOCALIZATION
NT SPACE PERCEPTION
NT SPACE PERCEPTION
NT VESTICAL PERCEPTION
NT VESTICAL PERCEPTION
NT VISUAL DISCRIMINATION
NT VISUAL PERCEPTION DARAG Heart rate of change parameters and performance of againtive, perceptual, and psychomotor tasks under INASA-CR-922031 18 p3014 N68-30150 ring physical and symbolic Human performs streams on percept [AFOSR-68-1516] 22 p3811 N68-35212

U SELF ORGANIZING SYSTEMS

15 a2581 N68-26754

NT AMMONIUM PERCHLORATES NT LITHIUM PERCHLORATES

Chemical kinetics of urunium, neptunium and ame ORNL-TR-1644] 01 p0022 N68-10554 tions in heavy was Q5 p0623 N68-144Q5 anese, iron, sickel, un and sickel perch [NRL-6597, PT. 1] 08 p1145 N68-18171 rolytic polymentus rate media 10 p1487 N68-20 ight scattering study of hydr luminum in agreeus perchire ally decomposed in-blorate 11 p1652 N68-21137 C.CR-67-28411 Polarographic current apprentis in alla perchlorate electrolyte by silver perchlorate addition 13 p2014 N68-2366 perchiorates in aqueous of UCRL-TRANS-102361 19 p3227 N68-31569 PERCHLORIC ACID Fuel rich perchloric acid flames containing mixed percearbon fuels studied by sampling burnt gas RPE-TR-67/31 03 p0427 N68-12535 pric and sulfuric acids 11 p1649 N68-2100 [UCRL-17915] Kinetic study of hexavaler hydrogen peroxide in acid sol [CEA-R-3168] 12 p1840 N68-22904 ic acid and bydr 13 p2006 N68-23081 Mass spectrometric study of the of perchloric acid and chlorine di (RPE-TR-66/13) 14 p2214 N68-24832 Oxygen additional oxygen (RPE-TR-67/5) 15 p2577 N66-26520 Applicability of dilu ric, sulfuric, and perchloric photometry up to 250 dep [ORNL-4279] 24 p4210 N68-37440 PERCUS METI Solutions of Percus-Yevick Jones potential, and statistical gas and fluid systems equation for Lenna thermodynamics of ra 18 p3187 N68-30062 n and operating principles of percuni-contact action detonators time, and noncontact [FTD-MT-66-153] 19 p3206 N68-31625 ERFECT GAS ERFLUORO COMPOUNDS NT PERFLUOROALKANE nion rate of perfluoropropene 19 p3232 Net-31922 (PUBL.-68-2) INASA-CR-65681 22 p3943 N68-35358 PERFLUORGALKANE Reactions of pe nes with others of JPRS-44780) 10 p1484 N68-19933 PERFORATED PLATES 06 pi161 N68-17728 Hyrostatic stabil plates and square-ing low-G operation [NASA-CR-61676] eristics of perforated 10 p1604 N68-19636 in shock towned place 18 p3055 N68-30019 rown for place-stress and a with various size circuor driver-reservair to MPL-AFRO-1235] FORTRAN of plane-strain solution ar holes [GEMP-598] 19 p3376 N68-31158 Stress intensit between series of INRC-101201 PERFORMANCE DI PORSCITA 02 p0190 N68-11875

SUB.

P

yger

char meto

Cole listic [NA

com min (N/

N 5.64 [N/

R N

bini (SF

boli [N/

206 [N

1

IC THE

Effect of radial clearance on turbine perfor (FTD-HT-67-52) .13 p1989 N68-24264 Performance of Battelle rotating crystal slow neutro (BNWL-SA-1536) 14 p2256 N68-24735 Efficiency and steady state performance of cylindrical thermionic converter with rhemium emitter and niobium collector
[NASA-TN-D-4382] 14 p2192 N68-25059 14 p2192 N68-25059 Relation between stimulus-ate and detection of visa oriented changes in heart al signals efficiency in vigilance tasks (AMRL-TR-67-233) 16 p2596 N68-27184 Performance characteris methods for differential pres (NASA-TM-X-52448) s and error reduction transducer 16 p2660 N68-27233 characteristics deter-or lunar exploration 18 p3169 N68-29764 Performance and dyn mined for hopping transpo [NASA-CR-95810] Performance of nonviber properties fabrics as function of 20 p3507 N68-32257 Performance and applicatio launch vehicle equipped with pe [NT/DTA/GI-III/67/NO.115] m of an ELDO-A/PS 21 p3780 N68-34765 Theoretical performance of hypervelocity wind tun-[AEDC-TR-68-104] 22 p3852 N68-35301 of solar cells on Performance degra (NASA-TM-X-63379) 24 p4199 N68-37832 PERFORMANCE PREDICTION AS-304 signal reception predictions for unified S-01 p0029 N68-10504 [NASA-TM-X-63006] Prediction method for e data transcription system [R-2595] ing human error rate in 01 p0017 N68-10830 R-2595]
Computer program /CONTEMPT/ for predicting containment pressure-temperature response to loss of sociant by accident in water cooled reactors IDO-17220]
Ol p0097 Nos-10973 (IDO-17220) Small group behav [NASA-CR-90247] 02 p0167 N68-11019 Axial flow effects on [NASA-TM-X-54065] of wall constricted arc 02 p0251 N68-11083 Prediction of radiati ge to Apollo telescopic mount photographic fit [NASA-TM-X-33666] 02 p0212 N68-11469 Correlations for pre-closed valves, threader [NBS-TN-355] akage of fluids through and seals 02 p0301 N68-11701 Survey of literature on aerod with external carriage of pylincent to wing-funciage combin [ARC-R&M-3503] 02 p0159 N66-11785 predictions regarding ersonic transports 03 p0299 N68-11913 Economic and perferelopment of comme stress measurements on blade tested in free air 03 p0299 N68-11962 Performance prediction included VTOL-type prop-[CAL-BB-1846-5-2] Effect of aspect ratio on axial flow compressor per-[ARC-CP-943] 03 p0297 N68-12409 Mathematical analysis of variable design effects on booster performance [TR-1001/2305/-1] 04 p0563 N68-12942 Computer eval monitor systems a [MTR-197, V. 3] utive, operating, or 04 p0481 N68-13076 atrix analysis of low posses for performance AESTR 43911 04 p0476 N68-13088 n for Saturn ASd flight peri 204 LM propulson 04 p0565 N68-13372 04 p0489 N68-13451 DLR-FB-67-32]

nimations for describing of sounding rocket per-

04 p0583 N68-13586 of high speed digital data

04 p0480 N68-13826

ting aircraft hanng interval for determining characteristics of com (NASA-TT-F-11220) all distribution fu effects on static Weibe for estimating environ-fatigue, and fracture strength tests on gl [NRL-6635] 08 p1191 N68-17776 Performance pre-signal transmission o [NASA-CR-93249] Cost versus perf (RM-5380-PR) Jet pump cavitation p. [NASA-TM-X-52417] 08 p1125 N68-18186 ging, and performs or Apollo missions it, air, and ignition con-tion of gas turbine engine Gas producer, turi trois, and performance (R-7217) 09 p1413 N68-18547 del for technological (AD-664165) 09 p1453 N68-18629 Data processing syste ad mission performs nal subsystems, design, mary for Surveyor I 09 p1429 N68-18654 (NASA-CR-93493) Reliability prediction maintainability and per [AD-664372] effects on future aircraft 09 p1274 N68-18691 represents and aircraft Predictive m [AD-664371] 09 p1270 N68-18697 nematical prediction acting struts, and t tel for landing dynamics of lunar vehicle landing NASA-TN-D-4434] 09 p1432 N68-19085 Standard trajector Voyager spacecraft, a faces, and reliability of eters for design of ce prediction, inter-NASA-CR-93559 09 p1433 N68-19097 9 p1435 N68-19153

for overload prediction additional terminals, and [NASA-CR-61468] 06 p0812 N68-15854 10 p1602 N68-19618 ontrol systems with of human controller design, and performance tripurpose large launch le systems 06 p0779 N68-15903 [NASA-CR-73154] 10 p1599 N68-20046 Tables for predicting stravionics fundamentals course [SRM-68-15] nd time domain methods rol responses during comdent performance in 10 p1476 N68-20077 06 p0780 N68-15910 Quantized models of fading for error analysis, and Markov processes for performance prediction of block in simulated car follo modified manual conti (SRRC-CR-68-11 10 p1500 N68-20214 06 p0785 N68-15932 Summary of configurations for law [NASA-TM-X-52398] ons, major systems, and per-nch vehicles 10 p1600 N68-20290 Optimum design geo bine performance effici [NASA-TN-D-4384] for high radial inflow tur-06 p0770 N68-15943 n of electric and nuclear pace vehicle launchers 12 p1960 N68-21907 Definition analysis pilot performance du [NASA-CR-73171] tal prediction of ary entry 06 p0785 N68-15945 Approximation method for ad-nction transistors ittance matrix of Digital simulation of crew [PRR-2-68] formance 07 p0948 N68-16241 junction transistors [RAE-LIB-TRANS-1262] 12 p1847 N68-22016 silicon solar cells and ill performance 07 p0938 N68-16371 Empirical method for predicting flow loss of gas or liquid in flexible hours [NASA-CR-62061] 12 p1859 N68-22097 prediction of doub [ESRO-TN-3] liction from absorption elengths from 0.5 to 1 ing levels and crystal Solar cell performat coefficients of silicon ive turbine geometry and output efficiency of tu [NASA-TM-X-1581] 12 p1962 N68-22725 [NASA-CR-93154] 07 p1066 N68-16510 rmance analysis on Apollo reentry acquisition Method for predicting spacecraft batteries from in [NASA-CR-92883] te cycle lives of and tracking radar [NASA-TM-X-63180] 13 p2028 N68-23733 07 p0939 N68-16705 Computer program and mathematical model for cal-ulating performance characteristics of solar thermitted reference Performance optimitation and signal channel phase shi ying systems 07 p0966 N68-16984 moelectric energy conversion [NASA-CR-94615] 13 p1996 N68-23987 Flight performance prediction propulsion system S-1B-5 stage [NASA-CR-94697] of predicted performance ediction for Saturn AS-205 07 p0979 N68-16994 14 p2336 N68-24626 ght variations in human al stress resistance 14 p2197 N68-24863 ds for reliability Prediction of rhythmic d performance, physical fitne ctures 07 p0979 N68-16996 er program for impro-entrol landing in gusts wed performance of au-08 p1110 N68-17449 14 p2185 N68-25286 erformance analysis of 08 p1155 N68-17611 trayton cycle in turbine eng [UCRL-70827] 14 p2193 N68-25297 sient thermodynamic analysis for development nematical model that predicts transient tempera-nd voltage-response characteristics of fuel cell (NASA-TN-D-4601) 14 p2193 N68-25304 error analysis for digital dispersive channel 08 p1148 N68-17885 performance prediction, engineering 14 p2265 N68-25334 hips for phased ibration induced error signal ed by nonlinear inertial ac-08 p1148 N68-17916 14 p2368 N68-25572 Operational and cost estimates for rocket planes in unsoceanic traffic 15 p2385 N68-26024 nulator for predicting sign concepts 15 p2387 N68-26409 Feasibility of grou helicopter performan [BHC-299-099-350] analog sources, and technique for predicting p (SIG-CR-337) 15 p2428 N68-26475 Digital computer prog m for thermal and hydraulic f reactor core channels at (BMI-1832) 15 p2503 N68-26684 data for application to reliability analyses of [TR-68-23-CM] 16 p2686 N68-27045 dynamic analysis for 16 p2780 N68-27707 ding performance and salt reactor 16 p2705 N68-28048 ORNL-TM-2157) Conference proce nd technological de version devices for 17 p2810 N68-28714 and predicted develop-secondary batteries 17 p2811 N68-28721 Performance characteristi ment of silver zinc primary a ce predictions for pri-17 p2812 N68-28726

NASA D

DEX

19618

00046

e in

0077

, and

0214

per-

0290

clear

1907

x of

2016

as or

2097

and 1725

ition

733

987

205

626

Ban

863

20-

286

of

297

104

34

nai

72

in

24

09

nd.

75

lic

14

15

17

R

Characteristics, composition, and performance pro-ictions for low temperature hydrogen cells 17 p2812 N68-28729 Performance prediction on primary hydrogen ox-ygen fuel cells for spacecraft power supplies 17 p2812 N68-28730 diation damage and temperature dependence data licon solar cell arrays 17 p2814 N68-28741 Verification experiments for prediction of per-ernance and operating characteristics of nuclear space power a (SAN-679-7) 17 p2815 N68-29062 tion patterns and near antenna performance 17 p2852 N68-29104 Phase impedance, power factor, performance characteristics, and working fluids studied for mag-netohydrodynamic generators 18 p3142 N68-29990 Predicting overall thrust and power of air propellers operating at zero advance ratio [REPT-67-9] 18 p3003 N68-30465 Computerized prediction celeration effects on solid pr listics and heat transfer [NASA-CR-66639] 19 p3359 N68-31305 Supplementary information for computer program predicting lifting pressure and camber shape of composite planform in subsonic flow [NASA-TN-D-4427, SUP.] 19 p3194 N68-31515 Entry and terminal phase performance analyses of infigurations for direct versus orbital entry for Mans (NASA-CR-66662) 19 p3367 N68-31834 Ablative materials p ce for solid rocket nozzle applications (NASA-CR-72429) 19 p3360 N68-31937 Noncavitating and cavitating performance of two low area ratio water jet pumps with throat lengths of 5.66 diameters [NASA-TN-D-4759] 19 p3266 N68-31960 19 n3266 N68-31960 Reliability prediction niques for single item and multiitem problems (NASA-CR-1129) 19 p3286 N68-31979 Satellite ephemeris computation program for pre-icting orbiting satellite passage 19 p3369 N68-32012 Performance prediction and improvement of tur-bines and turbopumps [SP-915] 20 p3401 N68-32403 20 p3401 N68-32403 Performance calculations for subsonic aircraft turbofan engines INASA-TM-X-52469) 20 p3578 N68-32909 prediction for Saturn AS-system, S-1B-6 stage 20 p3579 N68-33418 Final flight performa 206, Mission 276, propu [NASA-CR-96473] prediction for Saturn AS-system, S-1B-7 stage 20 p3580 N64-33586 Final flight performs 207, mission 276, propu [NASA-CR-96451] Material diameter an equation prediction of fr [AHSB/S/-R-149] nd thickness effects on stress acture behavior 20 p3607 N68-33599 Performance prediction technique for evaluating electro-optical sensors, and mathematical model of low light level television system [03685.20.03A] 21 p3688 N68-33839

del of two dimensional jet for pre-listance to sidewall 21 p3680 N68-33885 nce prediction of Saturn Propulsion system perfo S-1B stage, August-Docen [NASA-CR-96344] 21 p3758 N68-34038 Analog and digital sim-tion for test assembly on ing thrust balance system [NASA-CR-72430] n of performance predic ne pump self-compensat 21 p3697 N68-34271 ng hybrid mode in disk molifiers 21 p3668 N68-34365 Power estimate fi loaded waveguide o [CERN-68-30] naile properties pro ons at temperatures other statistical method 21 p3704 N68-34449 prediction for small as-Design and perform tronomical satellite [NASA-TM-X-63333] Test evaluation of ra-maintion infrared radio 21 p3780 N68-34496 hreadboard radiome (NASA-CR-91389) Criteria for design of laboratory experiments useful describing human behavior in space and militar

21 p3641 N68-34526

21 p3641 N68-34527

ns of visual fitness criteria space travel /static and

(NASA-CR-91293)

tion and guidance simulator for identifying nee capabilities of human operator during r or midcourse flight 21 p3642 N68-34532 nini in-flight controlled experiment for testing at methods used to predict visual acuity of as-als in space 21 p3642 N68-34534 Laboratory studies of flash blindness parameters and uantitative methods for predicting effects on visual cuity of pilots of high performance sircraft 21 p3643 N68-34537 Performance prediction for ELDO A launch vehicle and consideration of circular and elliptical orbits [DTA/3-NO.12/9174] 21 p3781 N68-34771 ts, Mach number effects, supersonic transport 22 p3803 N68-34913 Pressure prediction methods and sonic boom reduction for s Performance calculation with uranium-plutonium cy [JUL-542-RG] s for pebble bed reactor 22 p3910 N68-35614 Transient behaviogarithmic amplifie [ORNL-TM-2195] 22 p3849 N68-35843 (DUN-SA-66) 23 p4100 N68-36295 Theory of plasma resonance plane probe 23 p4139 N68-36311 Mathematical models for performance analyses on ground satellite tracking systems determining mass of orbiting body [ESD-TR-68-157, V. 2] 23 p4061 N68-36393 One dimensional mean line analysis for determining using performance of free vortex axial flow turbines DAE-882] 23 p3985 N68-36469 DAE-MEZI Design of specific optimal controllers 24 p4237 N68-37475 Radiation hazards and performance predictions for mixed uranium plutonium oxide irradiated fuels.
[BNWL-450] 24 p4292 N68-37478 Performance model for general multiplexing systems 24 p4221 N68-37552 PERFORMANCE TESTS Performance assessment of attitude control system during coast flight, and of thrust vector control system during powered flight of Voyager spacecraft (NASA-CR-89996) 01 pol 37 N68-10066 **Garigliano Nuclear Power Plant operations summary** 01 p0091 N68-10452 [EUR-3489.I] Design, fabrication, and operation of heavy water or-unic cooled reactor 02 p0236 N68-11016 Performance and service life tests conducted with 800-mW X band triode oscillators ECOM-01795-6) 02 p0187 N68-11121 Digital computer program for performance analysis all inertial guidance system along reference trajectories [NASA-CR-86009, V. 2, PT. 4] [02 p0235 N68-11844 Preoperational nonnuclear performance of sodium actor experiment facility for power expansion pro-ram system gram system NAA-SR-12408) 03 p0372 N6B-12212 Heat transfer and p probe for glaciers [CRREL-TR-194] ce analysis of thermal 03 p0339 N68-12346 Physics performature gas cooled read (GA-8117) f Peach Bottom high tempera 03 p0379 N68-12683 Specifications and processing for Apollo spacecraft in [NASA-TM-X-60754] ace test requirements is materials 04 p0524 N68-12874 Test evaluation of a oil as organic reactor a [FTD-HT-66-746] opyl diphenyl, and gas 04 p0337 N68-12884 of low density phenolic ive composites 04 p0524 N68-12889 Performance evaluation aylon, and elastomeric [NASA-TM-X-60755] color for day-night high

> 04 p0506 N68-12937 y tonis of nickel cade

04 p0447 N68-12944

04 p0515 N68-13300 Pilot test evi response to operation 04 p0489 N68-13616 Dusign, and evaluate model for mili INASA-CR-979] 04 p0487 N68-13617 netruction of 05 p0642 N68-14324 of ring shaped sweep-line, 05 p0631 N68-14632 rmance of two-stage axial flow turbine operatmg at different rotor tip o [NASA-TN-D-4388] 05 p0607 N68-14639 Accelerator improvements, component modifications and performance of alternating gradien ryschrotron (BNL-11766) 05 p0645 N68-14734 circuit self-contained atus at mirres 25 deg F 05 p0615 N68-14799 Performance testing of open compressed air breathing appara BM-RI-7077) of rescent coupling scelerator 05 p0645 N68-14855 Test evaluation of con pulsion bladder for nitro lant tank of lunar orbiter [NASA-CR-66533] its Teffos-aluminum ex-05 p0732 N68-14858 Voltage breakdown to and electronic grade Fre SC-M-67-641 in Freem cleaning agents. IC-M-47-641 05 p0681 N68-14884
Test evaluation of long fin-stabilized projectiles on ISL-T-25/67) 06 p0763 N68-15219 anulactured S-12 silver-06 p0768 N68-15275 Evaluation of small conical shock tube for monitor-ing simulated atmospheric pressure [NOLTR-67-85] 06 p0822 N68-15326 n of four thermal jumbs Performance test eval [REPT.-470] 06 p0857 N68-15459 se for high temperature Cold air study of gas tu aircraft engine application [NASA-TN-D-4389] 06 p0765 N68-15743 Experimental test me tape recorder using iso-tron beam welded house [NASA-CR-92550] el of spaceborne magnetic actic drive system and elec-06 p0847 N68-15807 High temperate filled thyratrons [NASA-CR-994] 06 p0816 N68-15892 wand tests, and flight performance on storage system for low gravity pollo-Saturn space flight 1] 06 p082 N68-15950 Development, ground of cryogenic nitrogen operation during Apo (NASA-TN-D-4293) Testing, fabrication electrical performance penerator developme [NASA-CR-92520] 06 p0771 N68-16074 Electrode design, formance tests of maine battery cell [NASA-CR-965] inic separators, and per-07 p0937 N68-16321 urbine - materials seg-nce tests 07 p0938 N68-16351 Two stage potential port of performance NASA-CR-925] Cold air perfo of scale model ou irut stage with inlet fe NASA-TN-D-43921 07 p1073 Net-16413 e-br seeled sickel cod-NASA-CR-928641 07 p0938 N68-16429 Experimental design age axial-flow turbin performance test of two NASA-TN-D-43821 07 p0938 N68-16469 Organic Rankins cycle b 07 p0956 NAS-16501 Brayton cycle to MTI-47TR241 07 p0940 N68-16922 Design, and perf 07 p0971 H68-1696

SUB

P

Sy

[NA

netic [FTI

C

[NA

Ef diod (NA

F

tors (

NA

Te solut and

Di for a

X.

(RE

Pe

De

Pr

(LS

Sydr Sydr [NA

De

(CE

Dy

Sy

A

Design, and performance of wideband FM genera-07 p0966 N68-16979 Performance of receiver a binary multiplex communicati ctures in synchronous 07 p0966 N68-16982 Performance tests on closed loop Brayton cycle tur-ocomoressor alternately using nitrogen and argon working gases [MTI-67TR81] 07 p0940 N68-17029 Performance cha ection thrust vector of gaseous secondary in-overexpanded primary (NASA-CR-66533) 07 p1074 N68-17081 Spacecraft primary soride couple with ftery containing copper hium-chlorine tetraoxide NASA-CR-72331] 07 p0941 N68-17108 on lubricated jour-07 p1004 N68-17151 Performance tests scale model for sucle (NASA-CR-91275) elocity, and design of 98 pl 202 N68-17289 Performance evaluentation kit NRX-A2 reactor instru-INASA-CR-912731 08 p1203 N68-17296 Design and perfer system ARTRIX [COO-1469-0067] of graphical processing 08 p1151.N68-17322 ality control of sphematical and en 08 pl 199 N68-17423 Design, and perf sors, and radiosomic us burnidity sen-08 p1177 N68-17487 ed stainless steel as (NASA-CR-93289) 08 p1185 N68-17616 Harmonic filter, elect ad design of traveling w gun, performance tests, tube amplifier for space [NASA-CR-93192] 08 pl153 N68-17620 Dynamic chi omparisons o ce tests, and statistical simulators with flying (USAAVLABS-TR-67-56) 08 p1157 N68-17775 Design, and perform for public address syst [FTD-HT-66-635] of battery operated circuit 08 p1180 N68-17886 ng multilayer radiation Evaluation of self-evacuati shields for cryogenic storage ta [NASA-TN-D-4375] 08 p1258 N68-18046 Aerodynamic performance pump-drive turbine for M-1 r [NASA-TN-D-4393] of scale model oxygen et engine 08 pl232 N68-18188 Effects of Reynolds number change on performance of axial flow turbine working in argon [NASA-TN-D-4432] 09 p1273 N68-18501 SNAP 23A post-test and [MMM-3824-0002, V. 2] 09 p1374 N68-18563 SNAP 23A post-test and [MMM-3824-0002, V. 1] 09 p1375 N68-18568 Supersonic performance with sharp sys evaluation of mass flux al inlet, and with blunted probes with sharp systemy metrical inlet [NASA-TM-X-1524] 09 p1342 N68-18834 mixer-settler in DP-MS-67-711 09 p1348 N68-19027 Variable banows. corder/reproducer de miniature, television criteria and performan-NASA-CR-93526] 09 p1343 N68-19047 Performance, and structural durability of full scale rbofan duct burner at simulated supersonic transport NASA-CR-54637] 09 p1414 N68-19070 of wake, and thrust bulk carrier 09 p1415 N68-19074 of liquid metal cooled fast BAW-1312] 09 p1378 N68-19083 Performance and cathode, pore-disper [NASA-CB-93672] lities of standard exide ated particle cathodes 09 p1316 N68-19363

ix algebra digital computer programs, and ex-10 p1602 N68-19618 on dry lubricated ball oscillation in vacuum 10 p1533 N68-19731 bearings under simulate [NASA-TM-X-53707] Test evaluation of t ics for alumi (NASA-CR-92016) 10 p1603 N68-19768 Performance evaluation of nitrogen inerted lubrica-on system with contact seals for ball bearing of tur-[NASA-TM-X-52413] 10 p1534 N68-19861 lability, research and n activity related to circuits, devices, and development, as state-of-the-art n 10 p1506 N68-20011 storable bipropellant cetrol system 10 p1585 N68-20064 thrustors in spacecraf [NASA-TN-D-4416] Performance of liquidosmbandment thrustor [NASA-CR-93771] 10 p1585 N68-20121 Aircraft carrier fire [NRL-MEMO-1851] 10 p1616 N68-20231 nance tests on disk gap-lanetary entry 10 p1459 N68-20316 Structural design as hand parachute for su [NASA-CR-66587] Steady state perfo erflow audium-pote ests on single pass coun-oled mercury Rankine cycle condenser [NASA-TM-X-1548] 10 p1615 N68-20340 Orifice inlet effects on ce of straight cylin-[NAPTC-ATD-143] 11 p1777 N68-20595 Performance evalua for arresting aircraft do [AD-665328] of wire rope cons er sandings 11 p1678 N68-20723 Design and p CORTROL SMEMBBY CO.
(NASA-CR-93921) 11 p1788 N68-20989 Performance of fa nan CC2 hover craft - experimental [ARC-R&M-3507] 11 p1623 N68-21170 ace of blunt trailing 11 p1620 N68-21487 onic converters and generators (NASA-CR-94154) 11 p1631 N68-21597 of sintered metal brakes SEG-TR-67-531 11 p1631 N68-21661 n fabrication, testing, and 11 p1778 N68-21684 Comparison of mixed and i coled turbine performance u olated flow methods for ing two simplified exam-NASA-TM-X-1572] 11 p1621 N68-21692 ng of radio frequency (SLAC-78) 11 p1680 N68-21722 ers for n S-1C thru 12 p1871 N68-22047 [MR-1182] Saturn S-IC thrust [MR-1183] 12 p1871 N68-22048 rire wound potentiom aturn S-4B stage thru Performance test result ters for Saturn S-2 stage (MR-1218) 12 p1871 N68-22089 ce of signal averaging 12 p1872 N68-22110 lysis, structural analysis, o panel oriented solar NASA-CR-943191 12 p1819 N68-22233 Hyperbolic char limiting values [NBS-TN-435] experimental results with

12 p1977 N68-22363

fectron bombardment tential

12 p1961 N68-22370

of tungsten-rhenium nal neutron flux 12 p1873 N68-22383

12 p1855 N68-22444

Performance of m thrustor at large accele [NASA-TM-X-52429]

alloy thermocouples (NASA-TT-F-11623)

Performance tests on bipropell dant propellant valves for rocket er [NASA-CR-61732] nt and quadredun-12 p1962 N68-22530 Performance ch s of superconducting nultistage accelerator BNL-120601 12 p1855 N68-22570 Testing and selection tions in high purity water [WAPD-T-1977] erials for wear applica-12 p1882 N68-22618 ce data of high temivity inputs 12 p1907 N68-22619 LA-3789] Fabrication and test perform collector-radiator heat pipe st [NASA-CR-94402] 12 p1821 N68-22991 Design and testing of fue system for cargo truck [REPT.-1921] 13 p2143 N68-23223 Reliability, performance, fa for power module for use in air [RD-67-62] ares and cost estimates raffic control centers 13 p1994 N68-23242 high temperature filter 13 p2106 N68-23300 Performance tests or ry propellant feed syst (NASA-TM-X-1579) ge isolator for mercu-13 p2144 N68-23477 Performance tests operated, 6 inch, 150 p [NASA-CR-94589] es on man valve 13 n2073 N68-23495 and operating parametern of three-fluid cr [NASA-TR-R-284] exchangers 13 p2168 N68-23513 Design and perfor satic-input fluidic [NASA-CR-72388] 13 p1995 N68-23602 que-speed graphs for ince tests [NASA-CR-61758] 13 p1995 N68-23603 s of vibrating m 13 p2045 N68-23608 sylvania and California ement surface resistance 13 p2048 N68-23622 [MR-633251] mce tests on temperature differenti (BMWF-FBK-67-86) 13 p2169 N68-23666 Design, thermal analysis, testing, and breadboard in-gration of two-stage radiant cooler for high resolution radiometer [NASA-CR-94600] 13 p2068 N68-23710 formance crite (BNWL-542) 13 p2048 N68-23797 Design and performance hydrogen thrust character [NASA-CR-54813] of liquid oxygen-liquid 13 p2144 N68-23999 Qualifications tests on lite apagee rocket motor: [NASA-CR-94621] 13 p2145 N68-24001 Design and test per on applications techno (NASA-CR-94619) e of apogee motor nozzle 13 p2145 N68-24008 Acceptance tests of nic for spacecraft power suppl [NASA-CR-94617] um secondary cells 13 p1996 N68-24162 ESTEC test facility for testing ESRO 1 satellite solar cell modules and arrays [ESRO-TN-9/ESTEC/] 13 p2049 N68-24177 g lubricants in air and in (DLn-FB-68-18) 13 p2078 N68-24312 ct Belgian pilots related to 14 p2205 N68-24885 sta for prototype solid state telemetry trans [NASA-CR-94671] 14 p2222 N68-24992 alve actuating system for at and secent engines in NASA-CR-620751 14 p2337 N68-25108 Acceptance test pad and pointing sys NASA-CR-618191 14 p2237 N68-25219 Thermal hydra heat exchanger for [UNC-5200] ctural performance of d reactor plant 14 p2295 N68-25275 and test data of fan 14 p2185 N68-25278

system engineering mo-bus ground stations [NASA-CR-95056] 15 p2423 N68-25936 nance of rotating 15 p2405 N68-26030 Systems analysis and performance analyzer ance tests of radar per-15 p2425 N68-26173 Operation of coaxial platic field gun in longitudinal mag-15 p2530 N68-2640E [FTD-MT-24-103-67] ta reduction from free 13 p2546 N68-26494 pump impeller in room Performance of centrifu temperature water [NASA-TN-D-4613] 15 e2455 N68-26651 Effects of nuclear diodes for use in SNAP (NASA-TN-D-4620) n on performance of 15 p2437 N68-26662 Flux flow and stabilitions under controlled h [ORNL-TM-2162] ce of superconduc-15 p2543 N68-26674 led assemblies of com-icro fuel cell 16 p2594 N68-27645 Performance test di posite silver zinc cell a NASA-CR-94104) Test methods for comb hubility, vapor pressure, a d for property analyses bustion characteristics, gas and volutility of aircraft fuels on high temperature lubri-(FTD-MT-66-991 16 n2747 N68-27850 ne fuels in single com-16 p2747 N68-27851 Diffusion chamber type burner and test procedures for analysis of hydrocarbon fuel burning characteristics 16 p2747 N68-27852 Performance of high ten ture lubricants at vari-16 p2670 N68-27864 Laboratory tests of grease lubricant performance in 16 p2670 N68-27865 X-band klystron perfo , and design of coupled (REPT.-357-1Q) 16 p2632 N68-27886 ed orifices and oriir mixers 16 p2649 N68-27889 Performance test d [NASA-CR-95251] ball shutoff valve 16 p2671 N68-27900 16 p2671 N68-27901 [NASA-CR-95224] unium alloy fatigue 16 p2589 N68-27909 hirting membrane solar (L/3484) 16 p2594 N68-27926 testing of 6000 psig. nctional and en nch shutoff valve hydrogen storage bo [NASA-CR-95266] 16 p2672 N68-28091 Design and perform cumulation ring device (CERN-68-8) lectron storage and so-16 p2640 N68-28217 e and response of two Dynamic control, p 17 p2864 N68-28676 ry electron bomi ment ion engine syste [NASA-CR-95680] 17 p2961 N68-28896 Systems analysis and diometer assembly avelength bands of ear nce test data on du woring far infrare wavelength bands of (NASA-CR-1086) on radiance profile 17 p2884 N68-28965 per stages of gaseous strogen distribution of WRE-TN-DWD-101 17 p2977 N68-29269 Performance testing of NERVA XE-1 control drum its ability to function in closed loop positioning system (NASA-TM-X-32465) 18 p3114 N68-29973 ar inductor altern for Brayton cycle spac [NASA-TN-D-4698] 18 p3004 N68-30002 argon of six inch radial 18 p2996 N68-30033

of single stage axial fit [NASA-TN-D-4700] 18 p3005 N68-30241 Jet flight test of i pation system per-perational environ-[FAA-RD-68-36] 18 p3112 N68-30285 ce of superso cascade tunnel 18 p3056 N68-30459 kronous motor with 18 p3158 N68-30526 during prolonged (ARC-29687) 18 p3015 N68-30589 re probe at super-[ARC-29558] 18 p3077 N68-30616 ELDO launch vehicle secon d stage performance ment for European I RAE-LIB-TRANS-1271) 18 p3172 N68-30620 e of zero gravity humidity contro system in potable v spacecraft cabins [NASA-CR-66640] 18 p3016 N68-30752 Performance tests of h meteorological dropsonder [WRE-TN-SAD-169] de drug chute for 18 p3004 N64-30793 on servo for control drum of nuclear [NASA-CR-72423] 19 p3203 N68-31116 1500-hour performs tained-electrolyte low ([NASA-TM-X-52455] of liquid-cooled con-ure fuel cell system 19 p3203 N68-31163 of RA-28 turbojet et (ARC-RAM-3538) 19 e3358 N68-31251 of airborne range and 19 p3238 N68-31326 tion system model no [NASA-CR-61897] 19 p3238 N68-31329 ry test and data analy 19 p3277 N68-31393 data for automatic sel cadmium batteries 19 p3204 N68-31473 continuous cycling of ctural configuration of lightweight aircraft 19 p3359 N68-31476 turbojet and turbofan NASA-TM-X-16241 m of solar thermionic converter [NASA-CR-95980] 19 n3205 NAR-31490 Air bearing potes pport system for high speed ground 199-1775231 19 p3199 N68-31675 ng and tilting stage in [UCRL-17773] 19 p3279 N68-31677 Low speed wind plant intake and chactories project F2 [ARL/AERO-289] rmance tests for power of government aircraft 19 p3199 N68-31807 al tests for fluidic and G 021 19 p3206 N68-31855 magnessia de cells for radios 19 p. 206 N68-31926 um perchlorate m (ECOM-0116-F) or parawing opening al drop tests 19 p3200 N68-31956 NASA-TN-D-4663] Test facilities and r testing acceleroment idence and navigation MDC-TR-44-481 19 m3308 N64-31965 Lunar excursion mo system validation test [NASA-TM-X-61146] artment cooli 19 p3260 N68-32025 e of pumps by using su-20 p3466 N68-32461 og pump performa SP-910) 20 n3442 N64-32478 Application of to [NASA-CR-1128] 20 p3468 N68-32779

ple stage turbine with rotor blade r of 0.3 NASA-CR-1172) 20 p3578 N68-32987 Basic parameters (combinations and po (ARL-68-0073) rage internifier film 20 p3479 N68-33259 cal ammonis batter 20 p3404 N68-33384 ing turbine en (ER-1584-3) 20 p3580 N68-33436 e circular arc airfeil NASA-CR-546211 20 p3394 N68-33499 and minimum curve les and velocities -(NASA-CR-54622) 20 p3394 N68-33500 e circular arc airfoils and velocities 20 p3395 N62-33501 Transonic stator v tested over range of fi [NASA-CR-54623] 20 p3596 N68-33545 for ion engine durability [NASA-TM-X-52427] 21 p3758 N68-33995 nt, drain rate, and elec-Effects of electrolyte am ode geometry on copper (NASA-TN-D-4790) 21 p3627 N68-34234 Pneumatic cylinds [NASA-CR-96543] 21 p3697 N68-34263 radar tracking backup 21 p3660 N68-34312 Pictoral turn and b ventional instrument [NA-68-28] 21 p3692 N68-34362 mor for flight Crews in aviation [TR-68-57-CM] 21 p3640 N68-34385 nide faal alem BR-5 reactors [ANL-TRANS-609] 21-p3726 N68-34476 Klystrons tested f wer source in linear ac-(LA-DC-9444) 21 p3669 N68-34509 Description and de source for particle sc (LA-DC-9421) mentron proton ion 21 p3743 N68-34513 Predicting tion from may [AR-3] is for target identifica-21 p3640 N68-34515 ms analysis of SNAP 2 nactor in operatio 21 p3726 N68-34578 characteristics of trans TUSAETL-TR-401 21 p3694 N68-34618 carbon dioxide elec es for oxygen reclama NASA-TM-X-61194] 21 p3654 N68-34643 Performance to Sheffield electroj (RFP-1034) oncy res 21 p3699 N68-34688 gen closed cire 22 µ3815 N68-34994 of refractory metals in NASA-CR-10971 22 p3910 N68-35153 for analysis of stell 22 p3876 N68-35295 m of Atlas Cents estart capability in ea NASA-TM-X-16471 22 p3965 N68-35357 ats of three phase after (FTD-MT-24-235-67) 22 p3943 N68-35392 for hi [FTD-MT-24-342-67] 22 p3861 N68-35436 10 parce mt de [NASA-TM-N-1663] 22 p3808 N68-35536

SU

na [A

Era [A

fie ne [D

JF

R

PERI

(F)

soli tras teci (F)

PERI

PERM

PERI

circ resu [N/

PERU

(RE

PERM

thro

PERI

PERE

A

pies IBJ

PERM

in B

pale geog

PERM

Design, construction, and tests of all-pneumatic free gyroscope with wide angle gas bearing supports [NASA-CR-66675] 22 p3878 N68-35590 Design data on gas lubricated self-acting bearings for suspending spin axis of gyroscopes [MTI-68TR29] 24 p4262 N68-38123 NASA-CR-66672]
Storability and performance tests on manual mopellants for space missions
22 p3953 N68-35591 Design, develope and testing of vented nickel 24 p4201 N68-38133 [NASA-C.R-2017-2]
Design, construction, and test data on ruggedized flight feasibility model of mass spectrometer based on meaospoole principle for use on Satura launch vehicles [NASA-CR-61961]
22 93878 N68-35635 Performance evaluation of filter/coalescer elements when removing water and solids contaminants from various military fuels 24 p4263 N68-38136 Performance test evaluation of boiling water driven Wind tunnel performance tests of rotary wings at high tip speeds and advance ratios (USAAVLABS-TR-68-44) [DLR-MITT.-68-18] 22 p3808 N68-35666 24 p4195 N68-38141 Analysis of J-2 engine flight and performance tests [NASA-CR-61991] 22 p3955 N68-35694 Performance and noise environment tests on protec-Performance evaluation of solid propellant rocket totor ignition to determine igniter design and parame-(USAARU-69-1) 24 p4208 N68-38197 Reliability and maintainability tests of airborne hydraulic fluidic components and systems [USAAVLABS-TR-68-36] Life test data for resistojet thrustors operating with ammonia or hydrogen [NASA-CR-66604A] 22 p3955 N68-35828 24 p4202 N68-38424 Performance tests on blunt compressor blade configuratio [AEDC-TR-68-197] nt trailing edge supersonic ation of seal design 23 p4067 N68-36254 Testing and evaluati [NASA-CR-97143] 24 p4196 N68-38473 Hovering tests of extremely flexible lifting rotor to determine effects of rotor tip configuration and operat-PERFUSION U DIFFUSION PERIDOTITE ing conditions on performance [NASA-TN-D-4820] U ENSTATITE
U OLIVINE
U PYROXENES
U SERPENTINE 23 p3984 N68-36334 High speed tests of compressor cascades with double circular arc blade sections [NAL-TR-152] 23 p3985 N68-36508 PERIGEES Design, fabrication, and testing of integral lubrica-on pump for hypergolic turboalternator power system Orbit calculations for size and shape of orbit, required velocity at perigee and apogee, and gravitational effects on satellite orbit [NASA-TM-X-63126] 09 p1425 N68-19242 [NASA-CR-92309] 23 p4067 N68-36564 Performance of vortex valve controlled secondary jection thrust vector system for solid propellant schet motor control 09 p1425 N68-19242 PERIHELIONS. rocket mater control [NASA-CR-66692] Existence of quasi-periodic solutions to three body roblem in celestial mechanics 23 p4161 N68-36624 Solar cell testing, and procedures and apparatus for determining silicon solar cell output [ESRO-TM-133/ESTEC/] 18 p3164 N68-30060 Experimental and electronic probe with perihelion of 0.3 AU [RF-95-OE] requirements for solar 23 p3995 N68-37031 18 p3168 N68-30814 Microstructure and mechanical properties of berylli-um tubing and performance tests on support columns PERIOD EQUATIONS

U PERIODIC FUNCTIONS of beryllium [NASA-TN-D-4833] PERIODIC FUNCTIONS

NT TANGENTS

NT TRIGONOMETRIC FUNCTIONS 23 p4079 N68-37053 Acceptability of missile stage separation devices [ONERA-TP-615] 23 p4161 N68-37155 Scale factors for proving existence theorem of eriodic surfaces Proving tests on three prototype carbon dioxide ower packs for artificial limbs and operating charac-06 p0865 N68-15631 teristics of pressure regulator [RAE-TR-68135] Generalized Floquet theorem for space group elements of periodic antenna structures
07 p0964 N68-16929 23 p3995 N68-37258 Efficiency, mass flow rate, torque, and exit diffuser effectiveness of 5-inch axial flow turbine [NASA-TM-X-1679] 23 p3996 N68-37263 Matrix formulation and perturbation stability of equations with periodic functi tion methods for Performance tests of stator component in closed osition and effects on performance of single stage tur-ne suitable for air cooling 08 p1248 N68-17514 Floquet existence theorem for set of linear dif-ferential equations with periodic functions used to study stability of tuning fork gyroacope 08 p1 209 N68-17515 23 p4162 N68-37264 Apollo X ray astronon test program with test data [NASA-CR-92325] ny experiment qualification Methods of eliminating short period terms from Hamiltonian by means of canonical transformation [NASA-TN-D-4399] 08 p1193 N68-17532 23 p4066 N68-37321 Systems design and performance characteristics of ulticircuit conical electromagnetic shock tube for stermining plasms flow phenomena 08 p1193 N68-17532 Stability of dynamic and elastic systems with almost periodic or nearly periodic excitation 24 p4322 N68-37443 10 p1604 N68-19876 Performance data on ingradient resistance and volt-ge characteristics of SNAP 27 n- and p-type ther-Small parameter bounds of periodic systems of per-turbation type age Chiman Chima 10 p1547 N68-20048 Periodic approximate solution tion of nonlinear elastic continuum natic direction finder system performance analysis [D6-20972] 12 p1975 N68-22059 Stability of linear Hamiltonian equations amperiodic coefficients in Hilbert space 16 p2694 N68-27249 24 p4224 N68-37723 Performance of single stage, axial flow turbine designed for Brayton cycle space power system [NASA-TM-X-1666] 24 p4200 N68-37943 variables to solving doubly ems of elasticity theory 18 p3174 N68-29649 Applying series of real varia rriodic binarmonic problems o Transistor amplifier design modifications for reliable operations, and performance test data [ECOM-2995] 84 94235 N68-37956 Techniques for calculating functionals of matrices arising in solid state physics and quantum chemistry 19 p3315 N68-31333 Operational testing and measurement of resolving time of radiation counting assembly [CEA-R-3440] 24 p4257 N68-37962 Singular perturbation theore of ordinary differential equation [AD-672212] ns for periodic surfaces Performance and reliability testing of power supply system for SNAP 19 with interfaces for Nimbus B [MND-3607-239-1, V. 1] 21 p3714 N68-34652

24 p4297 N68-38006

24 p4291 N68-38065

ms 24 p4258 N68-38066

AN/AYN-1 true aimpeed data converter preproduc-

Airborne microwave radiometric iceberg detection system flight test and specifications [\$J-230-4980-1] 24 p4258 N68-38066

in to boundary value problems and periodic of second order nonlinear differential equa-

22 p3898 N68-34942

22 p3914 N68-35051

Error bounds for spline interpolations of odd degree to smooth functions at uniformly spaced joints [LA-3886] 22 p3902 N68-35793 Solution vectors for periodic linear differential equa-ons in state time space exemplified by satellite atons in state time sp titude control (UTIAS-TN-127) 22 p3902 N68-35956 PERIODIC ORBITS
U ORBITS PERIODIC OSCILLATIONS
U OSCILLATIONS PERIODIC PROCESSES U CYCLES PERIODIC VARIATIONS
NT ANNUAL VARIATIONS
NT DIURNAL VARIATIONS Stability and spatially periodic magnetization of hard IMIT-3700-61 01 p0122 N68-10171 Periodic and random perturbations effects on non-[FTI-102/T-035] 01 p0107 N68-10477 c variation and other properties of variable 02 p0267 N68-11717 Tabulation of phase oscillation periods as amplitude functions (CERN-67-29) 04 p0548 N68-13411 alation data on periodic 06 p0903 N68-15077 ic ray barometer effect due to 06 p0904 N68-15079 Amplitude-phase modulation of periodic coumic ray variations by simultaneous use of two frequencies 06 p0904 N68-15080 Cosmic ray variations as aggregate of causal effects and random processes 06 p0904 N68-15081 Random processes method of obtaining data on periodic cosmic ray variations 06 p0904 N68-15082 Necessary conditions of strong stability of Hamilton equations with unlimited periodic operational coeffi-cients 06 p0865 N68-15603 Oscillations of quasilinear sys freedom - Jacobi matrix method tem with one degree of 06 p0880 N68-15605 Periodicity, and time information in nerve impulse of [IZF-1967-23] 06 p0779 N68-15878 sity variation in upper atmosphere based on satellite drag analysis 07 p0991 N68-16698 from 1958 to 1966 bi [NASA-CR-92668] Synthesis procedures for two dimensional, periodic mary, and non-binary arrays 07 p0966 N68-16983 Earth surface energy budget and carbon dioxide fluc-ations in cornfield (ECOM-2-68I-2) 09 p1331 N68-18312 Counic ray intensity varie y neutron monitor and tele ons during 1966 recorded 09 p1416 N68-18524 Mathematical model of seasonal change on Mars and related phenomena with dust, winds, and elevation differences as principal ingredients [SAO-SR-255] 09 p1425 N6R-19294 lical motion of comets 09 p1427 N68-19357 Motion picture techniques for determination of seasonal changes in geomagnetic variations [PB-176284] 09 p1339 N68-19486 Echo 2 orbital data analysis for exospheric density 10 p1520 N68-19760 Dynamic stability of pendulum during combined parametric and forced excitation
[ASRL-TR-134-5] 10 p1559 N68-20124 Analyzing motion stability of rotating rigid body subjected to periodic disturbances 11 p1746 N68-21102 onic analysis of monthly precipitation over North America (ECOM-2893) 13 p2098 N68-23257 Time optimal control for class of common random disturbances [ESD-TR-68-11] 13 p2046 N68-24222 Theory of steady state wave propagation in periodic structures 15 p2511 N68-26917

[REPT.-1057-011]

SUBJECT INDEX	
Random functions theory used to study variations of	PERMANGANATES
Random functions theory used to study variations of natural electric field in ocean [AWRE-TRANS-56] 16 p2658 N68-28322	Chemical reactions of solid potassium permaganates exposed to flash photolysis and flash heating
Airborne ionosonde and ionograms for studying traveling ionospheric disturbances over time	PERMEABILITY 19 p3220 N68-30895
[AFCRL-68-0125] 18 p3068 N68-30084	
Ultralow frequency whistler structures in magnetic field and plasms distribution models of varying mag- netospheric micropulsations	Flow coefficients for channels with permeable walls 02 p0202 N68-11735
netospheric micropulsations [D1-42-0691] 19 p3269 N68-31105	Irradiated and nonirradiated polyethylene and cel- lophane permeability to gases, vapors, and liquids [NASA-TT-F-11325] 04 p0526 N68-13352
Effects of chromospheric parameter fluctuations on	Grease permeability relation to stability
solar radio emission [NASA-CR-96138] 19 p3361 N68-31651	Grease permeability relation to stability [RIA-67-2770] UB p1183 N68-17965
Mean monthly air temperature anomalies over Northern Hemisphere over extended time periods [M-7368] 20 p3520 N68-32600	Mathematical analysis of fluid flow in well patterns containing permeability interferences
	11 p1684 N68-21106
Zonal circulation intensity variations at 500 mb over Northern Hemisphere	Liquid saturation in porous materials using nuclear magnetic resonance techniques and three phase rela- tive permeability
[M-7366] 20 p3525 N68-33518	15 p2410 No8-20424
Hourly values of ionospheric soundings for December, 1967, from Woomera, Australia [WRE-CPD-1967/12/W/]	Hydrogen permeation through SNAP 8 fuel element cladding assemblies
22 p3867 N68-35065	[NAA-SR-MEMO-12425] 17 p2916 N68-28975
Hourly values of ionospheric soundings for November, 1967, from Woomera, Australia	Phosphorescence quenching for calculating permea- bility of polymeric films to gases [TR-0158/9250-01/-5]
[WRE-CPD-1967/L1/W/]	20 p3510 N68-32660
22 p3867 N68-35066 Handbook containing data and methods for deter-	Permeability characteristics and transport properties of membranes for salt water conversion, and experi-
mining global climatological changes [FTD-MT-24-293-67] 22 p3906 N68-35473	ment designs [NASA-CR-96282] 20 p3478 N68-32704
Selected model studies, observations, and theories	Hydrogen permeation rates of austentic stainless steel with impressed cathodic current
on cloud formations, atmospheric circulation, precipitation, and weather forecasting	steel with impressed cathodic current 22 p3888 N68-35033
[JPRS-46566] 23 p4093 N68-36421 Astrophysical computation of orbital elements for	Permeation, diffusion, and solubility of helium, water
periodic comet Olbers	Permeation, diffusion, and solubility of helium, water vapor, hydrogen, nitrogen, and carbon dioxide in amorphous and crystalline polypropylene and polyester resins
[REPT194] 23 p4173 N68-37364 PERIODICALS	[TRANS-1537] 22 p3896 N68-35527
Selected articles in applied spectroscopy [FTD-HT-67-3] 02 p0220 N68-11575	Review of solubility, permeability, and diffusivity in
[FTD-HT-67-3] 02 p0220 N68-11575 Soviet articles on plasma physics, fluid mechanics.	polymer diluent systems [NASA-CR-97218] 23 p4083 N68-36640
Soviet articles on plasma physics, fluid mechanics, solid mechanics, detonations and thermodynamics translated from journal of applied mathematics and	Permeation and diffusion of nitrogen, oxygen and
technical physics	rare gases through stainless steel [LA-3909-MS] 20 p3503 N68-33236
[FTD-HT-66-261] 02 p0241 N68-11661 PERIODICITY	PERMUTATIONS
U PERIODIC VARIATIONS	Search for simple groups of orders less than one mil- lion and construction of one new group [AD-660717] 03 p0359 N68-12207
PERIODICITY (BIOLOGY) U RHYTHM (BIOLOGY)	
PERIPRERAL CIRCULATION	Permutations, and alternative sequences for problems related to Eulerian numbers
Limb volume measurements as indices of peripheral circulatory factors in cardiovascular orthostatic	[FOA-P-B-8001-11, V. 1] 09 p1366 N68-19477
response [NASA-CR-93247] 08 p1130 N68-17734	Computer program for calculating permanents of /0,1/ matrices in class U/k,k/
Gravitational effects on gaseous diffusion in	10 p1545 N68-19667
peripheral tissues 10 p1466 N68-20160	Inequalities and equalities for permanents of square matrices, and hafnian theory
PERIPHERAL JET FLOW	11 p1729 N68-21108
Hybrid propulsion efficiency for peripheral jet air cushion vehicle and effect on thrust of aerial helix	Introduction of permutation properties into helicity eigenfunctions for identical particle systems [LYCEN-6734] 12 p1933 N68-22664
[REPT4] 19 p3358 N68-30947 PERIPHERAL NERVOUS SYSTEM	[LYCEN-6734] 12 p1933 N68-22664 PEROVSKITES
Structure and formation of peripheral reflex arcs through linkage of intervertebral centripetal neurons	Structural analysis on ferromagnetic manganites with distorted perovskitic structures
through linkage of intervertebral centripetal neurons and centrifugal neurons of peripheral sympathetic gan-	distorted perovskitic structures 07 p1068 N68-16956
[FTD-HT-66-685] 04 p0452 N68-13042	Curie temperature, dielectric properties, and ferro-
PERIPHERIES	and antiferroelectricity of perovskitic polycrystalline selid solution in ternary system 17 p2954 N68-28470
U BOUNDARIES PERISCOPES	Structures of perovskite derivatives and phase trans-
Arrangement and operation of optical equipment for	Structures of perovskite derivatives and phase transformations of polytypic minerals [ECOM-01338-6] 24 p4333 N68-38032
remote macroscopic observation of radioactive sam-	PEROXIDES
[IBJ-870/XIV/PS] 12 p1903 N68-21999 PERMAPROST	NT HYDROGEN PEROXIDE NT INORGANIC PEROXIDES
	NT INORGANIC PEROXIDES NT POTASSIUM PEROXIDES NT SODIUM PEROXIDES
Structures and gravity anomalies of cryogenic origin in Baikal region and maximum depths of permafrust [DRB-T-482-R] [4 p2253 N68-25385	infrared and Raman spectra of his trifluoromethyl
Permafrost, crustal movements, magnetic anomalies, paleomagnetism, and other reports on terrestrial	NASA-CR-91342] 04 p0464 N68-12868
geophysics	Fluorocarbonyl trifluoromethyl peroxide synthesized by ultraviolet irradiation of mixtures of fluorocarbon peroxide and fluorine
18 p3069 N68-30545 PERMALLOYS [TRADEMARK]	peroxide and fluorine
Spin wave resonance in thin permalloy films	Oxidation of unsaturated compounds with organic
prepared in ultrahigh vacuum 13 p2134 N68-23529	peroxides [NIC-TRANS-2478] 09 p1293 N68-18459
Effects of low titanium additions on crystal growth	Chemical shock tube study of peroxide formation

itions on crystal growth nico /permanent magnet

20 p3506 N68-33359

Chemical shock tube study of peroxide formation resulting from gas phase reaction of a-pentane with oxygen in low temperature region

10 pi484 N68-19928

Effects of low titanium additions on crystal growth and magnetic properties of Alnico (permanent magnet materials/ alloys

PERSON	WEL DETECTION
Oxidation of conjugated a with beazoyl perceide [NIC-TRANS-2520]	nd nonconjugated dienes
Photosemitized decomposi	10 p1485 N68-19945 tion of hydroperoxides
[NASA-CR-94252] Oxidation method for pre-	12 p1831 N68-21933 paration of alkaline earth
NASA-TT-F-11641]	12 p1832 N68-22021
Kinetics of oxygen-perosic graphite	12 p1834 N68-22181
Organic peroxides or high or h	
RAE-TR-67182	12 p1840 N68-22911
Production of gameus day active oxygen [NASA-TT-F-11708]	gen from salts containing 18 p3027 N68-30386
Peroxycarbonate oxygenat	ion agents as catalysts for
PERSEID METEOROIDS	22 p3819 N68-34876
Meteoritic evaporation, lur tation and values for break-u	ninescence, and fragmen- ip of Perseid-type meteo-
roid (T-300-R)	16 p2768 N68-27723
Photointerpretation of lum of Perseid meteoroid	inescence, fragmentation 23 p4169 N68-36642
[UDC-523.503] PERSONALITY TESTS	To being treespoor
Measure of conceptual stru pression formation - Perso	nality tests and human
(TR-5) PERSONNEL	02 p0172 N68-11658
NT AIRCRAFT PILOTS NT ASTRONAUTS NT COSMONAUTS	agency version described the
NT CREWS	1981
NT FLIGHT SURGEONS NT FLYING PERSONNEL	
NT NAVIGATORS	NNET I
NT PILOTS [PERSONNEL	NNEL.]
NT PROGRAMMERS NT QUALIFICATIONS	Edula re-Estado
NT SPACECREWS NT TEST PILOTS	To the second of the second
connected with IMP operation	cedure for clean rooms
[NASA-TM-X-55998] Minutes of confirmation h	01 p0046 N68-10102 earing for NASA deputy
PLANIT flexible language :	07 p1104 N68-17193 program designed for per-
sonnel problem solving [SP-2840]	10 p1502 N68-19583
Civilian personnel manage and development laboratories [MAM-68-3]	ement of DOD research
User guide to computer mo of Army procurement, promo	11 p1808 N68-21761 del for projecting impact
	composition of commis-
[RAC-TP-286] Safety manual for personnel	16 p2799 N68-27028 Lusing recodymium lasers
[APGC-TR-68-53] Phosphor and equipment de	20 p3406 N68-32994 mign for personnel moni-
[TID-24522]	22 p3818 N64-35959
PERSONNEL SELECTION NT PILOT SELECTION	PA NEZAL SHE'SAN
plied to personnel selection to [STB-67-18]	st evaluation 02 p0168 N68-11097
Computer position profile ing computer personnel	for analyzing, and select-
Background information a	06 p0813 Nes-13944 and tests for selection of
(TR-54)	11 p1667 N68-20867
Psychiatric selection for he psychophysiology related to a ties.	zardous duties and stress erospace research activi-
Flight evaluation rencedure	11 p1638 N68-21798

Flight evaluation procedures and quality control in aviation school training [TR.46-3] 13 p.2007 N68-24211 Linear programming for assignment of personnel to position [AD-668326] 15 p.2580 NAR-26230

SL

9

1

F

to

spi

H

OB:

per cuh [CI

C

Cula

PERSONNEL SUBSYSTEMS Surface cleanliness testing problems arising from lack of sufficient number of trained and knowledgeable 17 p2896 N68-29337 Applying social and behavioral sciences to policy, plans, and operations of U.S.A. Air Force [AFOSR-68-0631] 18 p3015 N68-30638 Stability of Edwards po (NAMI-1019) preference schedule 18 p3016 N68-30715 Process development of system for digital computer recessing of psychophysiological data to obtain high stress tolerance pers [NASA-CR-1122] 22 p3816 N68-35102 Component relection and train ning for space flight 24 p4207 N68-38010 PERSONNEL SUBSYSTEMS Small group behavior and perf [NASA-CR-90247] 02 p0167 N68-11019 Shock protection design concepts for m cylindrical structures, housing equipment, and nel subjected to nuclear blast ment, and perso 14 p2367 N68-25548 Transfer and utilization of organizational research knowledge by managerial personnel in complex organizational settings [NASA-CR-89837] 18 p3012 N68-29601 PERSPIRATION Time sequence of perspiration and skin temperati in various regions of human body exposed to infra [NASA-CR-94963] 15 p2392 N68-26172 Physical and chemical properties of human sweat and factors affecting water balance in confined spaces [NASA-CR-95492] 17 p2827 N68-29518 Human water losses by evaporative perspiration in pressure units 21 p3634 N68-33926 PERT PERT project and cost estimate for Large Astronomical Satellite /LAS/ [ESRO-TM/P/-61] 04 p0599 N68-13406 Stochastic structure in algorithm for analyzing PERT 09 p1360 N68-18583 Machine processing of information by PERT system in use at large industrial complex [JPRS-44733] 10 p1503 N68-20184 Implicit enumeration algorithm imal path in disjunctive PERT net [RR-125] m for finding minimax-13 p2091 N68-23153

Analytic and Monte Carlo distribution theory for PERT 13 p2174 N68-23230 Review of recent mathematical developments in (AROD-5447-5-M) 21 p3715 N68-34716

NT ORBIT PERTURBATION NT SATELLITE PERTURBATION

PERTURBATION

Periodic and random perturbations effects on non [FTI-102/T-035] 01 p0107 N68-10477 Small perturbation effects on equilibrium of con-ducting fluids filling apherical cavities in magnetic fields

02 p0255 N68-11665 Perturbation of initial weak magnetic fields in propagation of strong shock waves of point explosions in infinitely conductive ideal gases which are at rest es which are at rest 02 p0256 N68-11681

d electron perturbations in due to phonon emission 03 p0408 N68-12462 Shock wave-induced electr crystal surface of solid due to plu

es and wave drags obos in channel flow with free surfaces 04 p0435 N68-13376 [D1-82-0664] Analytical formulations and numerical integration methods for many body problem and special perturba-[NASA-CR-1005] 06 p0913 N68-15741

Matrix formulation and perturb shility of equations with periodic f tion methods for 08 p1248 N68-17514

rbations of cosmological moder as of microwave background 09 p1422 N68-18890 lity of screw-type perturbation in linear Hall

11 p1760 N68-20844 tion and classification of stability concepts of dynamic systems [DOC.-678D2511 12 p1914 N68-22061 Perturbation method for non stacles 12 p1859 N68-22098

Perturbed optimal control proble ms and calculus of 12 p1852 N68-22103

External perturbing moments and manuscopy vehicle having flywheel with moving axis 12 p1972 N68-22354

ng effect of constant neutron Elin tion of perturbi NAA-SR-MEMO-12290, REV.

13 p2112 N68-23058 Optical mode coupling in la stying perturbation sers by intracavity time 13 p2078 N68-23096 Relaxation of local perti

tion in quantum vibra-(FTD-MT-24-92-67) 15 p2544 N68-26768 Transition probabiliti rbation effects in elar ulation to explain per-crential scattering cross

[NASA-CR-95344] 16 p2727 N68-28005 Propagation of pert viscoplastic rod [NASA-TT-F-11722] es in viscoelastic and 16 p2789 N68-28115

Computing improved asteroid orbits for use in mass etermination of Jupiter, and technique for special per-tributions by direct integration without differences 17 p2972 N68-29413

rol system for spacecraft [NASA-CR-86072] 18 p3169 N68-29871 Atmospheric scatt nic booms by turbulent

vortices along bound (NPL-AERO-1260) 18 p3001 N68-29892 Numerical analysis of planar motion of dynamic model representing kilometer wave orbiting telescope to investigate feasibility of concept [NASA-CR-96630] 21 p3764 N68-33641

Boundary method for calculating gravitational insta-bility for large perturbations in system of two viscoelastic materials

21 p3680 N68-33993 Theory of nonlinear mixed frequency generation in nisotropic plasma

21 p3748 N68-34001 Perturbation of solutions of system of nonlinear dif-ferential equations under general linear boundary con-ditions

23 p4090 N68-36794

Terrestrial and lunar gravitat term behavior of close lunar orbit nal effects on long 23 p4171 N68-36796

Integral representation for viscous surface waves generated by steady disturbances 24 p4244 N68-37584

PERTURBATION THEORY

VINTI THEORY

Perturbation method for inverting radiative heat anafer equation to obtain vertical constituent distribution in planetary at [NASA-TM-X-63021] 01 p0134 N68-10169

ong period va Nimbus 2 exp centricity and perigee is of earth zonal har-rearth oblateness over [NASA-TM-X-63011]

01 p0135 N68-10357 Hansen planetary th [NASA-TN-D-4169]

02 p0266 N68-11369

(AAEC/E-161) 03 p0369 N68-11988

[AROD-6135-4-P] 03 p0338 N68-12045 of renormalized current ry without cutoff 03 p0396 N68-12637 Equal time co (DESY-67/26)

ions of pert otion when roots for corresponding linear 04 p0530 N68-13331

os p0696 N68-14703 (RT/FI/67/16) or electron behavior in (NASA-TT-F-114191 05 p0730 N68-14879

alytical study and computer simulation of 05 p0640 N68-14937 [AFCRL-67-0453]

Stability of zero solution o tions during constant perturb ear differential equa-06 p0862 N68-15428

for constructing wave west excited states of d for com 06 p0887 N68-15955

ted sph INASA-CR-927171 07 p0992 N68-16733 Nonlinear perturi ry for optimal esti

(NASA-CR-92981) 07 p0977 N68-16918 d for determining normal modes ical cavities with circular resonabation method rvalues of optic

07 p1037 N68-16949 ion techniques for error analysis of finite corroximations for linear differential equa-

[NASA-TN-D-4372] 07 p1092 N68-17068 Perturbation theory for predicting electric field in-uced instability in fluid with stabilizing temperature NASA-CR-93333) 08 p1220 N68-17953

Air drag effects on satellite orbits with diurnal variations in air density (RAE-TR-67092, PT. 6) 08 p1243 N68-18244

cond order the ing harmonic ing modes ory for lifting problems for foils per-cecillations in either plunging or TR-116-ME-F) 09 p1265 N68-18281

Quantum theory of many particle systems [AFOSR-68-0100] 09 p1390 N68-18723 Collective oscillat ms in Hartree-Fock ap-10 p1570 N68-20138

approaches to near op-soost vehicle guidance 10 p1597 N68-20449 finum steering ogu [NASA-CR-1007] General perturbations pacecraft guidance, flight eory applications to chanics, and trajectory

[NASA-CR-1008] 10 p1597 N68-20450 Transport properties of metals, equations based on erturbation theory, and suggested changes for trans-

10 p1583 N68-20507 Partial differential equation solved for unsteady flow di wind tunnel walls [D1-82-0703] on of perturbation velocity 11 p1682 N68-20758

n theory with application to n-creation operator 11 p1754 N68-21109 Partly gentle perturba erturbation by annihila

Effect of constantly acting perturbations on motion described by differential equations [FTD-MT-24-168-67] 11 p1748 N68-21549 11 p1748 N68-21549

Perturbation theory ap stween reactor theory a dving neutron diffusion p d to variational analogy classical mechanics for 12 p1914 N68-21961

Interchange the variational principle in Perturbation theory [NASA-CR-94333] 12 p1898 N68-22203

Convergence of pertiexchange forces into solv [NASA-CR-94334] n theories for energy athematical model 12 p1927 N68-22426

Some variants of fi-skii and applications to [MRC-TSR-772] t theorem of Krasnosel-tar integral equations 13 p2090 N68-23079 Using theory of distr ciple for doubly harmo [MRC-TSR-795] roof of maximum prin-

13 p2091 N68-23138 Perturbations of highly ec determined by Hansens method [NASA-TM-X-63184] recentric orbital bodies of of partial anomalies 13 p2149 N68-23410

ry for estimation and tic systems 13 p2044 N68-23487 Nonlinear perturbation control of time-discrete at

Deser-Hülbert-Sudershamis elements of equal times are supported to the control of tral representation and urrent-current commu-(JINR-P2-3661) 14 p2303 N68-24631

parameter for develop-e of system to harmonic series solutions as con-Use of inertia as perturbation par ag series solutions for response of acitation, and expansion of serie mued fractions 14 p2358 N68-25087

n equations and energy transfer in binary 15 p2452 N68-26179 X

55

eh.

33

18

10

te a-

18

53

44

11

13

p-

18

19

ŋ

0

17

y

8

9

Ú

1

3

d

Perturbation solutions for buckling and failure of axi-ly compressed columns and shells 15 p2569 N68-26232 puting optimum trajectories on hybrid and dig [NASA-TM-X-59216] 16 p2757 N68-27417 ses and perturbation analy-and cubic field splitting of 16 p2609 N68-27422 on theory in molecular 16 p2723 N68-27781 in equations and state 16 p2716 N68-27801 Perturbation theory for be sided and malaligned rocks ng load analysis on ungeided and malaligned roo [ESAS-421, V. 33, NO. 3] 16 p2783 N68-27883 Charge distribution function in perturbation theory of classical electrodynamics solved by Boltzmann-Vlasov equation [SLAC-83] 16 p2739 N68-28191 intivity temperature de-n in copper 16 p2746 N68-28239 Predictio pendence of dilute all [NASA-TN-D-4626] Perturbation theory for nearly circular orbits using [NASA-TN-D-4531] for artificial satellites with ng Von Zeipel method 16 p2770 N68-28251 Perturbation, linear an quations for low freque mal ionic plasma waves linear theory and Vlasov rid excitation of longitu-17 p2946 N68-28391 Perturbation electron energy band structure in zinc study G-factor and magnetic breakdown 17 p2952 N68-28397 Perturbation expansion for long range poter serical models for classical fluid 17 p2924 N68-28467 al model three body problem for ing particles, and use of perturba-17 p2925 N68-28488 rules to study effect of correlations between binding energy in bremsstrahlung cross section of nuclear ph [NP-17348] 17 p2934 N68-29046 tion theory and covariant quantization of ant fields by functional integration 17 p2935 N68-29168 Quantum transport theory in photodection problem, id correlation formalism to describe photon emission Explo theory 17 p2936 N68-29212 Effect of static applietic and electric fields (M68-25-1) 18 p3149 N68-29589 Wind shear, velocity, and diurnal oscillations using rturbed equations for geostrophic wind above osci-ting low level jet 18 p3065 N68-29621 Computation of magnetic perturbation method and a co-culating satellite radiation dos [CERTS-NT-01-6] etic coordinates B.L. by the a computer program for cal-18 p3159 N68-29739 Continuity of function associated with Fredholm operators in Banach space, with application to perturbation theory, is analyzed 18 p3103 N68-29974 tion theory and n diative corrections up to INP-173771 18 p3134 N68-30419 nantum mechanics using perturbation theory for er order effects in Coulomb excitation 19 p3320 N68-30891 Exact theory for stabil hypersonic and high sup-bation theory [AASU-284] vatives of curet wing in flows based on pertur-19 p3194 N68-31439 Computer program to calc [RT/FI/68/9-PRV-R-/67/14] 19 p3330 N68-31507 Linear and nonlinear nonequilibrium plane flo [IA-135] rbation theory for 19 p3265 N68-31688

urbation theory for calof artificial satellites 19 p3369 N68-32010

20 p3589 N68-33101

in central gravitational (FTD-HT-23-871-67)

shation the and state 20 p3548 N68-33210 neutral hydrogeni n F2 region and protono-pendent continuity equa-no in topside ioneaphere 20 p3473 N66-33267 Dynamic coupling bet there - solution of time NASA-TM-X-63310 g in molecules, to accurately exp S, M cular spectroscopy 21 p3646 N68-33659 tonian fluids [NASA-CR-96547] 21 p3680 N68-34017 Perturbation analysis of existing resonant satellites [NASA-TM-X-63328] 21 p3771 N68-34426 as for periodic surfaces of ordinary diff [AD-672212] Sigma model and equi mutators in perturbation [JINR-P2-3827] e current-current com-22 p3936 N68-35851 Classical - qu 23 p4120 N68-36711 of perturbation theory of 23 p4124 N68-36929 tion problem arising in 24 p4219 N68-38154 Perturbation theopeopagation of strong [DLR-FB-68-52] larity solutions for 24 p4248 N68-38357 ty on wind profile under terrain roughness 24 p4288 N68-38410 on dispersion loss at Jicamarca Radas Faraday rotation (Observatory, Peru INASA-CR-86708) 16 p2654 N68-27543 NASA-CR-856331 16 p2655 N68-27640 PERVEANCE Magnetic field of beam in scaled tube (ECOM-01463-9) n of perveance electron 16 p2630 N68-27013 sive welding using PETN for welding aluminum [NASA-CR-90209] 02 p0214 N68-11029 Integrated tim detonating PETN (UCRL-50328) ion spectra of 08 p1210 N68-17882 Preparing PETN-impregnated capable of iniation by gaseous de [NRC-10168] d polyurethane foams etonation waves 19 p3299 N68-31841 Initiation of PETN by imp acting hydrogen-oxygen detonation waves (NRC-101221 21 p3792 N68-33822 PETROGRAPHY Geology of Bougainville and Baka Islands, Nev 02 p0206 N68-11446 Magnetic susceptibility and petrographic, spectro-graphic, and chemical analysis of manganese bearing [BM-IC-8359] 05 p0617 N68-13996 publicy of group 4B, 5B, and 6B rais tabulated Magnetic sus metal bearing m BM-3C-8360) 05 p0673 N68-14109 sering properties of pre-Preshot geol Schooner 2 site [PNE-509] 12 p1870 N68-22982 U CRUDE OIL PETROLOGY NT PETROGRAPHY idea from Carnarvon romorph 02 p0203 N68-11063 Upper Cretaceous As eismology, petrology, lds, and prospecting 06 p0432 N68-15030

s, reentry temperature system ating through rocks at elevate 08 p1237 N68-17365 n of south Yeniney ACIC-TC-13511 petrology, and earth 17 p2882 N68-29454 [MODULATION]
PULSE FREQUENCY MODULATION le tension effect on per formance of heart-lung prep [NASA-CR-92516] 06 p0775 N68-15937 on, lithium, calcius column with nircon of experimental loop alkali [AERE-M-1829] 12 p1841 N68-22975 PH effect on wear ch binations in water [AECL-2784] eristics of ten metal com-13 p2983 N68-23728 Anion and solution pH effect on anodic pro-and corrosion of irvin [ARL/MET-48] 16 p2685 No6-16 p2685 N68-28199 Electrochemistry of iron over wide ranges of pH in solutions of sodium salts [ARL/MET-49] 19 p3230 N6E-31851 Zinc corresion in solution hydroxide over wide pil range [ARL/MET-67] n of water and un 19 p3231 N68-31890 Stress corresion and hyd PH in 600 deg F hydroge rogen embrittlement of 17-4 or ammoniated and arrated (KAPL-M-6580) nd electric charging on high strength steels 12 p1885 N68-21851 Effects of temperature, pH, a bcritical crack growth rate on PH reactivity effect duri pressurized water reactors [WCAP-3696-6] eration of closed cycle 13 p2105 Nee-23241 PH factor change in aquinoctive dislocations us rock extracts of 13 p2062 N68-23815 Computer programs for calculating pH values of electrolyte solutions [PUBL.-128] 23 p4029 N68-37282 23 p4029 N68-37282 PHANTOM AIRCRAFT
U F-4 AIRCRAFT PREFERENCESCOPERS PHARMACOLOGY Organic phosphorus compounds in pharmacology, ological activities, hydrometallurgy, hydraulic fluids. and textiles [JPRS-43702] 03 p0311 N68-12154 at of capacity of puls nary circulation at high alt [ARDG/FE/-FE-348-2-F] 23 p3997 N68-36155 nical changes in bisins plation 24 p4204 N68-38014 of animals mad [AD-674665] Radioactive dusts inhaled by human respiratory system and deposited in nanopharysts, truches, and (CEA-R-3234) 07 p0947 N68-17046 HASE COHERENCE nodel line emitter, as and spectra, pla fields, and nonline Similarity laws for jet noise, meld pressure covariances of near pressure in coupling in turbulent INASA-CR-938387 10 p1559 N68-20094 PHASE CONTRAST irect visual obe in critical mix seas of phase of OSR-67-2300) n of concentration fluct activityrone in cyclohex 01 p0022 N68-10538 Comparison of achlieren as for visualization of acrosive ed phase contrast methods amic flow at hypersosic [NASA-TT-F-11509] 12 p1877 N68-32814 d differential inter

Solid state phase equilibris in cobalt tungsten car-bide alloys

Liquid vapor equilibrate methane pentane systems

SUBJ

PHASE CONTROL	
Ounium tetroxide as fix electron microscopy of	ing and coloring agent in thermoplastic polymeric
(TRANS-1536)	22 p3896 N68-35525
Phase acceptance of quad [CERN-68-28]	rupole doublets 23 p4111 N68-36012
Optimum receiver methor ferences between stochastic	
PHASE CONTROL NT COUPLING CIRCUIT	and a sylectory, a
Low-pass comb, microstr digital phase control and reci [ESD-TR-67-482]	ip filter for sonreciprocal procal filtering in S-band 01 p0028 N68-10258
Computer analyses of retr tive antenna phase control to [NASA-CR-977]	rodirective, and self adap- chniques for Mars probe 09 p1371 N68-18484
Feasibility of signal proces	
[NASA-CR-80038]	09 p1304 N68-19069
Incremental phase change frequency standards [RAE-TR-67230]	10 p1532 N68-20486
Interference reduction tec	hniques employing phase
Interference reduction tec- control, feed forward, Q mult [RADC-TR-68-8] Minimizing peak-to-avera	13 p2029 N68-24029 ge power ratio of radio
signals by proper selection of	phase spectrum 14 p2222 N68-25025
PHASE DEMODULATORS Receiver, phase demodule	ator, phase lock, output,
and power supply circuits for	r microwave interferome-
[CAL-157]	03 p0345 N68-12679
Phase demodulation of re- accuracy of demodulator resolver/digital converter [NASA-CR-91503]	used for design of
Dynamic model for cycle locked loops	07 p0965 N68-16977
Cycle slipping performanc locked loop	e of second order phase
Electrical and mechanical	07 p0965 N68-16978 design concepts, and per-
Electrical and mechanical formance specifications for a monitor	xpanded scale ac voltage
[NASA-CR-65982] EMSE123 phase sensitive of	09 p1340 N68-18517 lemodulator development
(NASA-CR-65984)	09 p1314 N68-18518
Multiple purpose inverter demodulated inverter circui	design based on phase t selected from state-of-
(NASA-CR-92200) PHASE DETECTORS	18 p3005 N68-30318
Signal to noise ratio anal coherent phase detectors for reduction study [NASA-CR-80890]	yeis at outputs of three or radio noise threshold
[NASA-CR-80890]	05 p0630 N68-14275
Low noise pulse amplifier for tectors in pulse shaping netwo [EUR-3659.E]	or germanium lithium de- rk
[EUR-3659.E] Effect of phase detector	
lock loop design parameters [NASA-CR-69972]	09 p1320 N68-18961
Mathematical analysis of p multiple sensor correlation rec	
IREPT -6400-153-T1	15 n2427 N68-26316
Postulation and analysis of tion problem associated with n	solution to phase extrac- sonopulse systems
Effect of linear phase dete	ctor on acquisition time
Effect of linear phase dete and FM threshold (NASA-CR-97141)	23 p4035 N68-36139
PHASE DEVIATION Micrometric measurements	of Venus
[P-3692]	02 p0266 N68-11424
improved detectability presented with 180 degrae late [DRET-TN-676]	or ploss N68-17092
Ionespheric phase floctuatio	AREA OF SHIP AND MARKET ALL
[R67EMII26]	12 p1865 N68-22009
Engineering design of transp measurement of very low frequency	conder system for phase ency signals
[NASA-CR-61922]	19 p3238 N68-31296

PHASE DIAGRAMS	
Melting point-pressure potassium, and rubidium	curves for lithium, sodium,
[NASA-CR-90030]	01 p0073 N68-10071
Structure, magnetic pro neodymium-manganese a yttrium-mercury and terbi	perties, and phase diagram of alloys, and phase diagram of
[SR-2]	01 p0122 N68-10101
lead zirconute system	
[UCRL-17545]	01 p0020 N68-10405
Conjugate liquid phase sodium compounds [USNRDL-TR-67-86]	on poors N68-10772
Phase diagrams and lat	tice parameters of cubic and
pseudo cubic phases of P Ce-O, Pr-O and Tb-O	tice parameters of cubic and a-O compared with those of
[EUR-3563.E] Phase relationships, fa	01 p0025 N68-10783
sub-stoichiometric oxide s [EURFNR-286]	01 p0096 N68-10949
Yttrium-carbon phase	
[IS-T-193]	05 p0673 N68-14134
dioxide system	ility in barium oxide silicon
[TR-12]	05 p0681 N68-14914
High temperature calori [AROD-5107-13-MC]	metry of solid ionic systems 06 p0792 N68-15750
Phase diagrams of syste um, zirconium, vanadium,	ems of hydrogen with titani- and niobium
(FTD-HT-23-925-67) Quasi-binary phase diag	07 p1007 N68-16282 grams of thulium oxide acti-
nide oxide system [KFK-521]	08 p1190 N68-17633
Computer programs for composition stability of ref [AFML-TR-67-397]	r predicting temperature and fractory metal phases 09 p1351 N68-18419
Specific heat and phase solutions of helium 3 dissolutions	
Melting points, lattice p of refractory metal carbide [IS-T-219]	arameters, and phase studies
	12 p1892 N68-22947 solution phase diagrams for
Calculation of regular stitanium base binary alloys [TR-14]	13 p2081 N68-23252
Phase diagram of rubidi vanadium pentoxide melts	
HORSANDO DODLO OL	13 p2018 N68-23835
High temperature X ray structures in TiNi intermet [AD-667398]	diffraction studies of phase allic compound
[AD-667398]	allic compound 13 p2085 N68-24149 g for accelerometer signals
Dynamic phase plotting from sine wave vibration to	14 p2368 N68-25571
X ray powder diffraction structure of intermetallic	
structure of intermetallic strontium-magnesium syste	ms or unitable Young second
HIT PROPERTY BY THE	16 p2682 N68-27789
Applicability of phase di tion kinetics of binary sol	agrams in predicting dissolu- utions and multicomponent
[NASA-CR-95399]	17 p2904 N68-28917
Phase diagrams and crysmediate phases of 63 binary	stallographic data for inter- ythorium systems
[IS-1752] Shock wave effects on it	17 b5201 M08-52125
meteorites analyzed by pha fects due to shock loading	ue diagrams and residual ef-
[NASA-CR-95873]	18 p3166 N68-30315
[FTD-MT-63-387]	y and ternary Ti alloys 18 p3094 N68-30563
Transition temperature, phase diagrams for superco	critical field behavior, and inducting cylinders
Mary Assessed from 11	19 p3347 Nos-30912
hafnium vanadium system	and hafnium chromium
System [AFML-TR-65-2, PT. 1, V.	14] 20 p3497 N68-32639
Phase diagram and inter-	
	metallic compounds in haf- 20 p3499 N68-32687
Thermal, microscopic, as	nd X ray analysis of yttrium- ine phase relationships 20 p3500 N66-32867
and system to determine	20 p3500 N64-32867
Phase diagrams of ytterbi	um-lead and europium-lead
or code mortiscolor (marginal Security of	20 p3500 N68-32868
nary systems	iron and cerium-nickel bi- 20 p3500 N68-32870

PHASE DIAGRAMS

(CEA-R-3478) Phase diagrams for heat resisting alloys of zirconium bound by molybdenum [FTD-HT-23-1034-67] 24 p4267 N68-37909 PHASE ERROR Mathematical analysis of phase detection error in multiple sensor correlation receivers with high signal to noise ratios [REPT.-6400-153-T] 15 p2427 N68-26316 Tracking errors caused by radio frequency inter-ference to Ministrack system, and analysis of phase locked loop with interference [NASA-CR-95227] 16 p2623 N68-27646 PHASE FADING U FADING PHASE LOCK DEMODULATORS Evaluation and performance analysis of unified S band system for Apollo ground network [NASA-CR-96289] 20 p3437 N68-32711 Structure of combination carrier and concernmodulation tracking loop receiver 21 p3657 N68-34007 Phase lock demodulator system for frequency modulated signals with noise 23 p4022 N68-36981 PHASE LOCKED SYSTEMS Receiver, phase demodulator, phase lock, output, and power supply circuits for microwave interferome-[CAL-137] Dynamic model for cycle slipping in first order locked loops 03 p0345 N68-12679 07 p0965 N68-16977 Cycle slipping performance of second order phase locked loop 07 p0965 N68-16978 Theoretical, and experimental studies on frequency locked loop outputs 07 p0966 N68-16981 Ground station phase locked servo system for decod-ing pulse position modulation signals from sounding rockets [NASA-TM-X-63097] 07 p0967 N68-17010 Effect of phase detector characteristics on phase lock loop design parameters [NASA-CR-69972] 09 p1320 N68-18961 Signal to noise ratios in airborne range and orbit determination system, and carrier and range loop per-formance analyses [NASA-CR-61667] 10 p1496 N68-19825 Digital voltage controlled oscillator for phase lock loops using coherent frequency synthesizer [NASA-TN-D-4521] 14 p2229 N68-24389 Threshold performance of phase locked loop demodulators, equivalence of frequency modulated threshold extension receivers, and frequency modula-tion multipast interference. tion multipath interference [NASA-CR-94775] - 14 p2226 N68-25366 Voltage controlled oscillator stability specifications for phase locked communication systems [ESD-TR-68-81] 15 p2429 N68-26668 Tracking errors caused by radio frequency inter-ference to Minitrack system, and analysis of phase locked loop with interference [NASA-CR-95227] 16 p2623 N68-27646 Fokker-Planck analysis of phase lock loop systems 16 p2635 No8-27841 Equivalent circuit analysis of phase locked beam control systems [CERN-68-27] 21 p3675 N68-34692 Optimalization and comparison of acquisition characteristics in phase locked loop systems [NASA-TT-F-11689] 24 p4227 N68-38155 PHASE MODULATION Amplitude-phase modulation data on periodic counic ray variations

06 p0903 N68-15077

Pior shift at [UCR

Abs

VHF meteor trail forward plied to time synchronization

ter phase deviation ap-

21 p3660 N68-34329

9

2

2

odulation of periodic countic ray rous use of two frequencies 06 p0904 N68-15080 Using phase shift between voltage across diode and current through it to measure short service lives in semiconductors [FTD-HT-46-608] 18 p3153 N68-30102 duction, and testing of Broadband receiver for di radar using quadrature phase put over large frequency rang [HDL-TR-1373] frequency to voltage converter [NASA-CR-65985] 09 p1315 N68-18617 Synchronization loss analysis for narrow band ran-om phase channel 10 p1494 N68-19617 Instantaneous frequency and dynamic handwidth oncepts for phase modulated signal analysis concepts for phase mod [TR-0158/3230-46/-4] Phase shift, single particle re Fock spectrs of oxygen 16 and o (IPNO/TH-118) 13 p2025 N68-23245 Radio receiver to track phase modulated very low 14 p2222 N68-24969 Wideband digital modulation and detection techniques for troposcatter [C&S-68-TR-2623] 15 p2427 N68-26369 Low energy sum rule cor form factors of nucleon and pi (REPT.-896/VII/PH) Convolutional encoding sequential decoding technique for coherent deep space telemetry link and near earth space missions (NASA-CR-96877) 22 p3832 N68-34948 Numerical solution for a ionospheric propagated no [DSD-R-206] 22 p3832 N68-34948 Phase shift analysis of scattering cross sections and proton-deuteron scattering and polarizations (CEA-R-3392) 23 p4131 N68-37137 Predicting error rate in digital data transmission estems using four-phase or two-phase modulation 22 p3833 N68-35160 Formulation of three body scattering problem and eutron scattering by deuterons Argon laser with internal phase modulation and use in producing single frequency light 23 p4073 N68-36728 Measurement of apontar tion in helium, neon lasers [NASA-CR-97356] PHASE SHIFT Biased velocity estimates due to phase center motive reference to radar signals in reference to radar [ESD-TR-67-507] Phase shift analysis of a 20 MeV [JINR-E1-3899] 02 p0173 N68-11041 Phase shift distribution in resonant cavities of linear PRASE SHIPT CIRCUITS

NT CIRCULATORS (PHASE SHIFT CIRCUITS) (BNL-118171 04 p0550 N68-13747 Attenuation and phase shift computations of electromagnetic waves in exhaust gas jet of ELDO launch vehicle third stage [ERNO-AB-RTT-1/65/65] Extremal self-adjusting system based on measuring base shift to system of higher than second order 01 p0043 N68-10322 Automatic phase holdin bility and faster servo re-range navigation system [NELC-1503] 05 p0629 N68-14165 Phase shifts in perception of sinsusoidally modulated light studied as function of average luminance, wavelength, and frequency [IZF-1967-20] 06 p0776 N68-15115 Circuitry, power supply, and operation of inverter for low temperature generator [TN-199] 10 p1461 N68-20492 Phase shift analysis of nucleon-m (JINR-P1-3525) 07 n-nucleon scattering 07 p1049 N68-16706 X band ferrite phase shift circ mode suppression technique [NRL-6677] X band propagation characteristics of reciprocal latching ferrite loaded waveguide phase shifter configu Pulse division circuit for analyzing two input signals from radiation counters
[ANL-TRANS-622] 21 p3695 N68-34731 INRL-MR-18361 Corlectors 08 p1154 N68-18170 Phase shift analysis for two body interaction with fac-torizing potentials [JINR-P2-3404] 10 p1566 N68-19756 Microwave frequency dependent time lag measure-ment for waveguides and phase shift circuits (TRANS-2492) 22 p3834 N68-35274 Optical measurements on phase shift of ultrasonic wave upon reflection from interface [TR-4] 11 p1745 N68-20987 Design of active 90 degree phase difference networks [HDL-TM-68-18] Expressions for describing pion-nucleon differential scattering cross sections in terms of Coulomb scattering amplitude, Coulomb phase shifts, and nuclear phase shifts. PHASE SHIFT KEYING Performance optimization for transmitted reference ad signal channel phase shift keying systems 07 p0966 N66-16984 ORNL-4197] 12 p1933 N68-22658 Design, fabrication, and testing of ring hybrid S band tode phase shifter Digital modulation and evaluating Saturn 5 data is [NASA-CR-61407] 13 p2038 N68-23052 Phase shift analysis and dispersion relations for pion-nucleon scattering [AFOSR-68-0519] 13 p2113 N68-23144 Development of phase telegraphy in U.S.S.R. 16 p2621 N68-27292 Orthogonal multiplexing theory and general design criteria related to unified 3 band communication Nuclear resonance filter for phase shift measurement of earths magnetic field vector [NASA-CR-97100] 13 p2064 N68-24080 Phase shift of nucleon-nucleon scattering at 400 PHASE-SPACE INTEGRAL MeV (JINR-E1-3707) 14 p2303 N68-24639 Motion division for synt near automatic systems Pion proton elastic scattering experiments and phase shift analyses [UCRL-18001] 14 p2306 N68-24794 Computer program for constructing and plotting eight-dimensional phase-space orbits for relativistic charged particle in electromagnetic plane wave [BWVE-452] 10 p1348 N68-19899 Subroutine procedures for relative phase shift analy-Phase-space model for meson and baryon resonance roduction in pion-proton interactions UH-511-18) 13 p2114 N68-23365 ronco implement in residue15 p2431 N68-25783 Absorption spectra of three body F-center model with phase difference 1/14.511.181 15 p2536 N68-26064 Monte Carlo numerical integration applied to phase Flexible incremental phase servo with digital outputs for indicating phase and Doppler frequency of iono-spherically propagated radio signals.

16 p2618 N68-27059

Partial waves at infinity in Regge theory and 5 matrix proof of generalized Levimon relation for real part of phase shift.

[C-67-34] 17 p2929 N68-28768

PHASE SWITCHING INTERPEROMETERS Optical system designs and applications of various in-referemeters - conference 07 p1001 N68-17202 Concept of phase measuring interferometer, and dif-fraction pattern analysis by electronic conjugates 07 p1001 N68-17206 rection-sensitive Dopple HASE TRANSPORMATIONS
AT AIR MELTING
MT BOILING
MT BOILING
MT BOILING
MT FILM BOILING
MT FLASHING (VAPORIZING)
MT FLASHING (VAPORIZING)
MT FLASHING (VAPORIZING)
MT FLEZING
MT LEIDENPROST PHENOMENON
MT LIQUEFACTION
MT MELTING
MT NUCLEATE BOILING
MT NUCLEATE BOILING
MT NUCLEATE BOILING
MT YACUUM MELTING
MT VAPORIZING
MT MT WAPORIZING
M 18 p3037 N68-30428 eson field theory used nucleon interactions 18 p3137 N68-30700 onances, and Hartree-alcium 16 nuclei 19 p3327 N68-31208 nts of charge parity violating 19 p3329 N68-31353 necting electromagnetic in nucleon phase shifts 20 p3549 N68-33249 ring angle of arrival of 23 p4019 N68-36349 Theoretical physics of weak elementary particle in-[NP-16978] 01 p0106 N68-10439 23 p4135 N68-37268 Mathematical model for breakdown of supersaturated inertigas solid solution in irradiated metals [FEI-44] 01 p0100 N68-10761 as emission phase flucta-EL-44]
X ray scattering by binary liquid metal system, and trace are consistent and trace are currently to the content of point o 24 p4264 N68-37809 ttoring at energies near R-3) ections of tungsten, tantalum effectory metals containing dis om and precupium Electronic work func-nicition, and rhenium ref actived amounts of baffalus [FTD-HT-66-766] 24 p4317 N68-38028 on tras 02 p0285 N68-11563 ng system for increased relia-sponse times in Omega long dic coating during elec-03 p0310 N68-11908 02 p0234 N68-11330 tallography, electronic roperties of rare earth [NYO-3560-7] 10 p1461 N68-20492 03 p0407 N68-12362 solution for two dimensional heat conduc-ions with change of phase: 03 p0426 N68-12367 20 p3448 N68-32365 Plane transitions in rare earth metal oxides, in rare earth metal fluorides, and in manganess fluoride, in-duced by shock waves from explosives m explosives 03 p0423 N68-12519 Shock wave effects on phase transformations in ger-anium dioxide, silicon dioxide, titanium dioxide, tin oxide, and lead dioxide 03 n0315 N69-12564 23 p4018 N68-36156 Shock-induced polymorphic phase transitions in iron 03 p0423 N68-12614 ck wave offects on metal and ionic crystal struc-03 p0385 N68-12765 fulation hundbook for Temperature effects on electrical resistivity, and phase transformation of lasthanem [IS-T-192] 04 p0542 N68-13754 15 m2428 N68-26464 Design and calibration of ultra-high pressure X ray all to determine effects of neutron irradiation on phase transform BNWL-436) Microconstituents, recrystallization behavior, inothermal transformations, upon response and tensile properties in heat treated Zr-No alloys (S p06.72 Niss.13977 Yttsium-carbon phase diagram based on thermal, metallicarpshic, and X ray data (IST-193) 05 p0666 N68-13970 is, and analysis of non-06 p0820 N68-15593 Effects of strain induced austenite to martenate transformation on mechanical properties of metastable austenitic ancels (UCRL-17849) 05 p0675 N68-14881 Origin, structure, and morraces in binary multiphase NYO-3814-1, PT. 13 rphology of nonplanar in-diffusing monatic systems 02 p0675 N66-14487 icient measurement for 45 Internal conversion coeffici keV transition in uranium 236 (18-1663) quation from Liouville Derivation of Bultzmann or equation to test kinetic-theoret [PIBAL-68-7] 05 p0714 N68-14519 Continuous separation and fiotops identification of transition elements, and comparison of elements of properties with hadrones, known transplatination, and other elements [JPNR-DC-3281]. 05 p0s2s Null-14600 21 p3795 N60-34455 Karlaruhe isochronous cyclotron beam property, phase measurements and instrumentation [KFE-754] 22 p3919 N68-35861

SUB

L

R6

Sc (TG

RA

SU-

Og syste direc [FTL

De

An Ku-b satell (NAS

apert (ESD

Ras gular REP

Der acqui in Ap [NAS

Eff

IAFC

Eva INAS

Ani

Rac

PHASE

PHENA

Pres

High

PHENOI

Effe

Com

Perf

NAS/

NAS.

sary uranium compounds, and in-compounds with bismoth, lead, (UJV-1783) 05 p0628 N68-14880 Temperature effects on iron alloy martensite austenite phase transformation process Of p0852 N68-15048 Shock induced transformation of titanium-nickel al-06 p0853 N68-15207 Equation for relating glass transition temperature of copolymers to molecular structure [RAE-TR-67187] 06 p0858 N68-15693 Plastic deformation and magnetic properties of setals, and equilibrium and kinetics of phase transfor-06 p0856 N68-15988 cts on electrical properties of Alloy constitu m binary alloys 07 p1008 N68-16421 (RLO-1375-5) Infrared absorption spectral measurement of phase ramition in antiferroelectric ammonium hiphosphate (IA-1136) 07 p1070 N68-17157 Landau theory of second-ord eneralized to including fluctuation nd-order phase transitions, ectuations, scaling laws, and Superfluidity 08 p1140 N68-17405 to thermodynamics and phase transitions in fer NASA-TT-F-11468] 08 p1225 N68-17902 Solidification analysis, perature limits for superc [NRL-6600] d solid-liquid interface tem-08 p1261 N68-18206 Solid solution and mechanisms, and reinfrefractory metals hase transformation alloying reing fibers for strengthening 08 pl 189 N68-18213 heating, and cooling current measurements flar kinetics of solid-liquid interface [7] 09 p1406 N68-18392 [NRL-6637] ia in ternary sy (AFML-TR-63-2, PT. 2, V. 17) 09 p1351 N68-18394 ns for boundary analysis at liquid-vapor interface of mercury [NASA-CR-61628] 09 p1448 N68-18630 Surface vibration effects on nucleate boiling at low heat fluxes 10 p1611 N68-19603 Liquid-vapor equilibrium K-values and phase behavior of methane in natural gas condensate 10 p1481 N68-19645 Diffuse first order phase trans 10 p1482 N68-19783 nance in single crystals 10 p1582 N68-20505 New method for preparing thin films of Alnico alloys for electron transmission studies - characterization of electron diffraction and microstructure during phase transformations. 11 p1710 N68-20603 Statistical thermodynamics capacities in critical phase tran ics of polyphenyls and heat ition regions 11 p1645 N68-20707 Polytypic phase relations among complex inorganic (REPT.-5) 11 p1653 N68-21344 Ceramic crystal growth, phase separation is silicate tass, sphere packing. X ray scattering by crystallite, morphous alloys and semiconductors, and metal yatal defects. crystal de [TR-16] 11 p1775 N68-21690 Heterogeneous nucleation in vapor-solid transforma-11 p1658 N68-21838 Crystallography of reverse martensitic transforma-tion in iron-nickel alloy 12 p1886 N68-22170 Dilatometric method for isothermal transformation of beta yield alpha in uranium 0.4 percent weight (REPT.-874/14/PS) 12 p1888 N68-22322 Metallugraphic and X ray analysis of isothermal phase transformation in uranium chromium alloy [IIU-873/XIV/PS] 12 p1888 N68-22347

Uranium and plutonium carbide reactions with ustenitic stainless steels studied between 650 and 1050 deg C (CEA-R-3353) Hydrostatic pressure effects on magnetic transitions in gadolinium-dysproxium alloys
13 p2132 N68-23417 Physical and chemical properties and reactions of antiferromagnetic metals - electric and crystalline pro-perties, metal working, alloys, mineral mining and refining ancourse. [FTD-MT-65-20] Phase transition temperature tions of solid inorganic compositions Isotopic effects in crystal symmetry and nature of hase transitions in ferroelectric selenium compounds Phase transition NUS-R-522] Calorimetric measurements in temperature region of phase transformations in tungsten and tantalum halides High temperature X ray diffraction studies of sta ty regions of intermediate phases of praseodyn oxide-oxygen, terbium oxide-oxygen, and certium-tum oxide-oxygen systems

13 n2023 N68-24 Kinetic interpretation of glass transition - glass tem-peratures of alkane liquids and polyethylene [REPT.-67-C-091] 14 p2276 N68-24504 Kinetics of phase tran wave compression Behavior of ion and electron currents emitted from hot iron filament during structural changes Heat treatment and mitrogen concentration effects on brittle-ductile transition temperature of chromium 15 p2487 N68-26949 Selected papers from symposium on phase forma-tions and transitions of titunium-nickel and other as-ciated compounds (NOLTR-68-16) 16 p2676 N68-27267 Shape memory effect and martensitic transformation of titanium nickel Transmission electron microscopy and X ray diffrac-tion studies of phase transformations in thin films of titanium-nickel Mechanism for high temperat tanium nickel and resultant pre Shock wave structure in phase transition near ther-nodynamic equilibrium of adiabatic curve Hypersonic flow over slender blunt body with hysicochemical gas transformation in high entropy Dilatometric analysis of phase transformation in uranium chromium alloy at high temperatures [INR-874/XIV/PS] 16 p2685 N68-28209 Metallographic and X ray analysis of isothermal phase transformation in uranium chromium alloy [INR-873/XIV/PS] 16 p2685 N66-28212 Experimental idetermination alloy equilibria and lattice parar [ARL/MET-68] Crystal defects and grain b Phase boundaries, lattice co imogeneity studies in uraniu [JUL-316-RW] scattering amplift (UCRL-17921) Allotropic phase tra cobalt-nickel alloy [AROD-4953-2-MC] Phase coordinate vectors, she equality, and time minimas in m (JPRS-45913) Mathematical models for phase transitions in quantum plasmas, white dwarfs, and electron gas densities [AFCRE-68-0209] 19 p3329 N68-31319

X ray diffractometric investigation of phase transformation of pure uruniu (ANL-TRANS-601) 19 p3293 N68-31668 12 p1893 N68-23019 igations of omega phase 20 p3494 N68-32241 Bibliography for distribution at conference on liquid [DDC-TAS-68-11, V. 1] 20 p3423 N68-32813 Metallographic analysis of allotropic phase transfor-ations in cerium 13 p2075 N68-23814 20 p3500 N68-32866 es for entropy calcula-13 p2170 N68-23823 Intermediate phases in iron-ho 20 p3427 N68-32869 Phase relations in samarium-gadolinium alloy system selenium compounds 13 p2137 N68-23910 20 p3500 N68-32871 Neutron irradiation, heat treatment, and deforma-on effect on martensitic transformations in metastable 13 p2020 N68-24069 [ORO-3395-5] 20 p3503 N68-33212 rature X ray diffraction studies of stabili-Carbide analysis of cast chron nium-nickel alloy 20 p3505 N68-33348 Crystallization, crosslinking, changes during crystal-liquid oriented polymeric systems [NASA-CR-96723] and dimensional phase transition of 13 p2023 N68-24271 21 p3709 N68-34667 Development of pi control of spacecraft [NASA-CR-66695] ge coatings for thermal tion in solids by shock 23 p4185 N68-36113 Effect of shear stress on solid state phase transforma-14 p2330 N68-24928 [AROD-4953-4-MC] 23 p4075 N68-36456 l changes 15 p2508 N68-26049 Very high pressure pi setics of chalcogenides transitions and reaction 23 p4010 N68-36747 use transformations in ionic crystals 24 p4211 N68-37528 Phase transformations and mean transformation of titanium and chromium titanium-rich alloys of titanium and chromium 24 p4267 N68-37566 16 p2676 N68-27267 Structures of perov atives and phase trans-16 p2676 N68-27269 formations of polytypic minerals [ECOM-01338-6] 24 p4333 N68-38032 Critical behavior of systems undergoing discontinu-ous phase transitions and polymer chain configuration 16 p2676 N68-27270 AD-674642] 24 p4333 N68-38106 ure transformation of Electron probe microanalysis on niobium content in martenritic phase boundary of zirconium niobium alloy martensitic structure 16 p2678 N68-27282 24 p4270 N68-38344 IAECL-27151 stic curve 16 p2645 N68-27597 PHASE VELOCITY Injector linear electron accelerator with constant [FTD-HT-67-1] 03 p0333 N68-12397 16 p2646 N68-27599 Measurements of wave number/phase velocity spec-trum of wall pressure beneath turbulent boundary layer 06 p0829 N68-15776 [NPL-AERO-1224] Phase velocities for ELF and VLF wave propagation tropic ionosphere [RR-548] 10 p1498 N68-20063 Phase rate influence on work function of water and arbon compound hydrodynamic systems determined a pulsed extractor n of chromium-nitrogen ameters of nitrides 16 p2616 N68-28306 in pulsed exti [UJV-1929] 17 p2932 N68-28939 boundaries in allotropi cobalt using electro aves in structural com-SC-DR-67-8161 23 p4181 N68-36594 17 p2898 N68-28399 PHASED ARRAYS mstants, solubility, and m carbide - zirconium Far field patterns, element d for electronically steerable ante [NASA-CR-91383] nt design, and feed systems nna systems 04 p0475 N68-13044 17 p2899 N68-28568 Illuminations for circular aperture phased arrays to improve sidelobe efficiency [P-351] 06 p0801 N68-15821 ethod and applications in studies of 17 p2942 N68-29485 Leaky wave reflection of incident power in phased antenna array resonances ion of single crystals of 18 p3087 N68-29658 07 p0964 N68-16928 naping control to insure Cost versus performance relationships for phased otion encounter 18 p3105 N68-30250 [RM-5380-PR] 08 p1148 N68-17916 Solving integral equation of infinite phased dipole array by approximate and Fourier methods [SR-21] 09 p1301 N68-18334 electron gas densities 19 p3329 N68-31319 effects on decomposition of ich copper alloys 19 p3292 N68-31338 Energy diverters, and vacuum tube isolators for con-trol of microwave amplifier arrays (ECOM-2897) 09 p1313 N68-18346

Classification and crystal structure of Lavas phases in intermetallic systems
[CEA-BiB-92] 12 p1892 N68-23000

DEX

31668

32241

liquid

12813 nafor-

2866

12869

ystem

2871

orma-stable

13212

3348

n of

4667

6113 ema-

6456

ction

6747

ns in

7528

on of

7566

rans-

8032

Matrix-fed circular antenna array for continuous (NRL-6696) radar arrays [TI-03-63-03] INASA-CR-860891 PHASED LOCKED SYSTEMS PHENANTHRENE

8106 et in alloy 8344 2397 pec-layer 5776 0063 and 8939

com-6594 tems 3044 ys to

5821 med 5928 7916 ipole

8334 con-1346

Large aperture seis	mic array studies dealing with
masking underground	i nuclear tests with large
	m epicenter location, and pP
phase of earthquakes [ESD-TR-67-630].	09 p1332 N68-18363

Influence of element thinning in large phased arrays in terms of gain, sidelobe distribution, average sidelobe level, and sidelobe confidence levels [R67EL-591] 11 p1660 N68-21114

Expansion of Montana large aperture scismic array [P-411-24] 13 p2065 N68-24202

Scanning by phaned, coupled antenna arrays [TG-956] 15 p2426 N68-26251 Bulk semiconductor techniques for application to phased array microwave equipment [RADC-TR-68-210] 16 p2741 N68-27082

Wave front observations on line of sight radio wave propagation path using phased antenna arrays [SU-SEL-68-015] 16 p2622 N68-27396 d antenna arrays 16 p2622 N68-27396

19 p3237 N68-31289

Operating characteristics and design of antenna system with electrical circuit elements to change direction or shape of antenna pattern [FTD-HT-23-5 [3-67] ... 19 p3241 N68-31613 Design and development of integrated microwave emponents for electronic steering module of phased

19 p3244 N68-31920 Analysis and evaluation of critical components of Ku-band phased array antenna for meteorological

19 p3244 N68-31995 Long period noise sources and propagation at large aperture seismic array /LASA/ [ESD-TR-68-176] 20 p3471 N68-32774 20 p3471 N68-32774

Mutched radiating element in phased linear array and phased two dimensional array [FR-68-14-372, PT. 3]

20 p3437 N68-32823 Radiation patterns of phased antenna array in triangular lattice configuration
[REPT.-7678-6-T] 20 p3438 N68-32984

20 p3438 N68-32984 Design parameters for developing phased array equisition and tracking radar for onboard experiment in Apollo spacecraft (NASA-CR-92249) 21 p3659 N68-34242

Effect of scanning on im dances of finite broadside, collinear, and rectangular arrays [AFCRL-68-0317] 23 p4022 N68-36896

Evaluation of adaptively phased large aperture array at very high frequencies [NASA-TM-X-63360] 23 p4023 N68-37210

Antennas with circular arc and sine arrays
23 p4023 N68-37287

Radial cavity feed system for phased arrays used in radio astronomy 24 p4223 N68-37686

Electrical and mechanical characteristics of 20-tannel telemetry system using vertically suspended 24 p4227 N68-38048

Effect of linear phase detector on acquisition time and FM threshold [NASA-CR-97141] 23 p4035 N68-36139

Pressure effects on fluorescence spectra of doped crystals of anthracene, naphthalene, and phenanthrene [TR-0158/9250-01/-1]

15 p2537 N68-26258 High pressure study of fluorescence spectra of ul-trapure crystals of naphthalene, anthracene, and

TR-0158/9250-01/-4] 15 p2417 N68-26565

Polarized absorption, fluorescence, and phosphorescence spectra of phenanthrene in mixed crystals 19 p3225 N68-31321

Effects of molecular structure on thermochemical properties of phenolic resins and related polymers [NASA-TR-R-276] 02 p0280 N68-11038 Conductive heat transfer mechanisms in low density phenolic-nylon chars [NASA-CR-966] 03 p0355 N68-11978 Performance evaluation of low density phenolic nylon, and elastomeric ablative composites [NASA-TM-X-60755] O4 p0324 N68-12889 Theoretical analysis of five composite ablatice materials with various percentages of phenolic resis, powdered nylon, and silica [NASA-TN-D-4374] 10 p1541 N68-19710 10 p1541 N68-19710

Hypervelocity heat protection, surface heat shield-ng, and internal temperature rise of Tefton, phenolic nylon, spoxy resin in glass honeycomb, and silicone [NASA-TM-X-61088] 13 p2167 N68-23395

Calculated ablative quantities for nylon phenolic heat shielding materials of hyperbolic reentry vehicles [NASA-CR-73225] 14 p2372 N68-24989

Molecular structure effects on thermochemical pro-perties of phenolic resins and related polymers [NASA-TM-X-59844] 15 p2487 N68-25684

PHENOLS NT PHLOROGLUCINOL

Decomposition of polyoxymethylene and polyoxymethylene discetate in phenol solutions
[TIL/T-5474] 04 p0467 N68-13421

[TIL/T-5474] On pode? Non-13-421 Friction and wear in cryogenic liquids for phenolic and polytetrafluoroethylene composites of various par-ticle sizes and concentrations (NASA-TN-0-4565) 13 p2077 N68-24142 Equilibrium constants for association of various phenols in low dielectric nonaqueous solvents [SC-CR-68-3521] 15 p2419 N68-26725

Concentration and temperature dependence of Kerr constant of substituted phenois and anisoles [RTS-4226] 20 p3416 N68-32367

Cross link density and polymer structure effects on thermal analysis of phenoi formaldehyde polymers [NASA-TM-X-61168] 20 p3511 N68-33085

Spectroscopic analyses of fluorides and exides of are earth metals and of phenol, guaincol, and hiphenyl (FTD-HT-23-882-67) 21 p3651 N68-34429

Infrared absorption spectra of gaseous, liquid, and crystalline phenol, guaiacol, and biphenyl 21 p3652 N68-34431

PHENOMENOLOGY

Phenomenological study of radiation damage and recoverability of metal oxide field effect transistors [NASA-TM-X-57521] 16 p2632 N68-27307 Structure of universe, physical phenomena, and role of man 18 p3166 N68-30359

PHENYLS NT POLYPHENYLS

Some new chlorinated derivatives derived from propiophenone 04 p0470 N68-13533

fnert carbon free radicals

04 p0472 N68-13545 Reaction products of phenythydrazones with trichlorinated phosphorus 04 p0473 N68-13768

Synthesis of three new alpha-methyl substituted bis/epoxyethyl/derivatives of phenyl ether [D1-82-0612] 09 p1292 N68-18423

Organic peroxides or high energy irradiation for cur-ing rubber and swelling method for characterization of phenyl containing silicone rubbers [RAE-TR-67182] 12 p1840 N68-22911

Photochemical reaction between benzene and 4-bromobiphenyl for application in dosimetry [COO-913-23] 14 p2212 N68-24672

Reaction kinetics of iodobensene and hydrogen dide - heat of formation of phenyl radical and impli-tions on reactivity of benzene

Biphenyl and eutectic mixtures as working fluids for organic Rankine cycle power conversion system for npace um [\$AN-651-49] 17 p2842 N68-29051

Polarized absorption, fluorescence, and thosphorescence spectra of phenanthrene in miser systals 19 p3225 N68-31321

Electron transitions in absorption, fluorescence and phosphorescence spectra of 2-phenylnaphthalene derivatives 20 p3415 N68-32332

Spectroscopic analyses of fluorides and oxides of rare earth metals and of phenol, guaiacol, and hiphenyl in different phases [FTD-HT-23-882-67] 21 p3651 N68-34429

Infrared absorption spectra of gassous, liquid, and crystalline phenoi, gualarol, and hiphenyl 21 p3652 N68-34431

Use of 1-phenyl-3-pyrazolidone as photographic RAE-LIB-TRANS-1313] 24 p4257 N68-37954

Climatology of significant weather at Mactin Air Base, Philippines [AD-661278] 03 n0364 Neg-12240 Annotated bibliographic listing of 244 reports on cli-mate of Philippines
[WR/BC-98]

PHILOSOPHY NT AXIOMS

Operations research and management planning methods in relation to philosophical problem of build-ing improved social system 03 p0429 N68-12086

PHILOROGLUCINOL.

Effectiveness of silver and lead iodides and phloroglacinol in cloud glacintion [JPRS-46050] 18 p3111 N68-30787

Influence of admixtures of surface active substances on ice forming activity in clouds of silver and lead iodides, and phloroglucinol 18 p3111 N68-30788

Proposed Photos landing for radio signal analysis of Mars topography during occultation [NASA-TN-X-60921] 09 p1424 N68-19139 Tidal friction effects on Phobos evolution [GA/MECH/68-4] 20 p3588 N68-32942

PHOEBUS NUCLEAR REACTOR

Predicting heat transfer coefficients in cooling passages of Nerva and Phoebus-2 rocket nozzles [NASA-TM-X-52437] 13 p2171 N68-23862 miques for Rover and Fission distribution tech Phoebus nuclear reactors [LA-DC-9412] 16 p2705 N68-28027

Phoebus 2A 5000 MW reactor test preparations and fuel element developments in Rover nuclear rocket [LA-DC-9589]

20 p3531 N68-33086 Collecting and sampling radioactive effluents from Phoebus IB reactor [LA-3796-MS] 21 p3727 3168-34621

PHONEMES

Speech analysis, phonemes, and phonetic operators, and computer recognition of speech [JPRS-43926] 05 p0629 N68-14101 es, and phonetic operators, Efficient and accurate machine recognition of human speech - theory of speech perception (NASA-CR-86027) 07 p0961 N68-16343 Computer speech recognition by direct analysis of speech wave 13 p2032 N68-23218

PHONETICS

Task-induced stress effects on speech
[BBN-1542] 04 p0460 N68-12810
Speech analysis, phonemes, and phonetic operators, and computer recognition of speech
[JPRS-43926] 05 p0629 N68-14101

HONOCARDIOGRAMS
U PHONOCARDIOGRAPHY

PHONOCARDIOGRAPHY

Simultaneous electrocardiographic and phonocardiographic measurements of electrical and mechanical phases of astronauts cardiac cycles during Gemini lights 01 p0008 N68-10184

Pneumocardiophose device for continuous pulse and respiration rate monitoring [FTD-HT-67-484] 07 p0950 N68-16676

PHONON BEAMS Magnetoelastic parallel-pump instabilities for mag-etoelastic waves near magnon phonon crossover re-

NONONS
NT PHONON BEAMS

Incinetic neutron scattering method for phonon dispersion of metals in quasi-ion approximation (EUR-3621.E, PT. 1) 07 p0101 7668-10058

Shock wave-induced electorystal surface of solid due to pi

Reflection spectra of optical phonons in hazagnesis mixed crystals of cadmins cullide and sales in 04 p0558 N68-13465

SUB

org

E

IFT

E

tion

Perc

NT NT

252525255555

Nit

mai hypo (COC

Str

Che

phosp olefin [NP-1

Rev

and or

Moi

Mas

and sil

Lun

Rea

Opti

Sum

Synt

itroge

[NUS-I

(NASA

Organ

AFOS

REPT

imagin (EGG-

Tin tunnel diose-crystal for quantum gen shonons in superconductor ides evaporated on sapphire single stum generation and detection of 05 p0728 N68-14457 Magnetoelastic wave amplifier using parametric ex-citation of spin waves by traveling phonons in ferromagnets (SRRC-CR-67-51) 07 p0975 N68-16804 phonon interactions in miconductors 07 p1069 N68-16964 Multiple wave am piezoelectric cadmiu Spin quadrupo deformed nuclei ((JINR-E4-3134) d collective states in tion probability 10 p1562 N68-19586 sency shifts measured Pressure-induced pl (SGAE-PH-57/1967) 10 p1575 N68-19678 of acountic and infrared electric field on vibronic interaction in KCI/OH 10 p1579 N68-20096 Anharmonic interaction on enteraction of photocolor of the control Electron and suclear ap metals and semiconductors [AFOSR-68-0262] non interactions in 10 p1579 N68-20179 Pseudopotential models for lead used in computing phonon dispersion relations in symmetry directions and m determining volume dependence [SGAE-PH-63/1967] 11 p1736 N68-21294 Theoretical explanati on of paramagnetic phenomena caused by spin-pho [FTD-HT-66-567] 11 p1776 N68-21714 Phonon lifetimes in crystals scattering of neutrons and phot [CEA-BIB-100] rmined by inclustic 12 p1957 N68-22878 Phonon lifetime ca [NYO-3699-21] in solid argon 13 p2132 N68-23238 Boltzmann transport equation for phonon distribu-tion function derived for medium undergoing large 14 p2332 N68-25089 Phonon spin-lattice relaxati neodymium ions in calcium flu [NASA-CR-77664] 16 p2744 N68-27442 Wave methods and perturb sonon frequency in solid soc tion theory used to find 18 p3149 N68-29667 on in normal and super-19 p3348 N68-30939 asurements for berylli-elastic scattering data 19 p3356 N68-32112 Phonon dispersion relum oxide extended by se (IN-1129) Spin phonon in [JINR-P4-3794] romagnetic crystals 20 p3572 N68-33028 phonons propagating in galli-ingle crystals Dispersion curves for pl um phosphide pseudo-singl [LA-DC-9228] 20 p3574 N68-33309 Optical modulation techniques used to study nequilibrium electron and phonon distributions in 20 p3575 N68-33460 Electron-phonon coupling in impurity absorption band and diffusion of phosphorus in oxide layer on sil-(FTD-HT-67-159) 20 p3576 N68-33580 Electron-phonon coupling in problem of impurity sorption band 20 p3576 N68-33581 Electron phonon inte trice vibration spectra calculations applied to 22 p3946 N68-34847 Phonon resonance scattering and thermal conduc-tivity of alkali halides doped with divalent ions 22 p3948 N68-34939 Excitation spectrum with phonon and roton regions for high density boson gas with strong repulsive core and helium strength attractive well

Cos [QR-4] (IS-T-215) 22 p3926 N68-35056 for determining thermal 23 p4154 N68-36923 Phonon dispersion relation for hcp He 4 with low 23 p4155 N68-36972 nophonon coherent scat-netic crystals 24 p4332 N68-37996

exchange chron (COO-1618-2) 01 p0022 N68-10524 d applications of mul-(NYO-2279-3) Q3 pQ316 N68-12624 Normal butyl ak mined by as character [PG-806/W/] in tributyl phosphate deter-04 p0465 N68-12958 neters for gamma Phosphate glass pers radiation and soft X rays 04 p0512 N68-13705 osphate glass after ioniz-valuate absorbed dose 64 p0512 N68-13707 X ray diff of bicyclic phosphate, and otures 04 p0473 N68-13753 (15-T-183) ion exchange properties chemical processes, thin ical analyses, reaction kinetics, and rediati [FTD-MT-64-359] 06 p0793 N68-15951 ect on composition and onyl phosphate 06 p0793 N68-15959 , aodium, lithium, calcium, ange columns with zirconyl ng pH and concentrations 06 p0794 N68-15960 alent and tetravalent ceri-er, and tributyl phosphate 06 p0794 N68-15961 eric autom ses on phosphates, and sulfates in aqueo (EUR-3738.F) 09 p1293 N68-18492 Temperature dependent properties of dinucleoside UCRL-17966] 11 p1648 N68-20945 Equation for calc distribution coefficients of uranium and plutonium b acid and tributyl phosphate [KFK-671] 12 p1837 N68-22623 Electron paramagnetic res germanate, phospisate, and a nce of X ray irradiated ate glasses 15 p2489 N68-26512 Decomposition kinetics of phosphorite in solution of potassium nitrate and nitric acid [RTS-4395] 20 p3418 N68-32509 Inhibition of stress corrosion cracking with BNWL-7531 21 p3704 N68-34366 ce study of 31 phosphate ift anisotropies and ab-ste coupling constant 23 p4006 N68-36203 Nuclear magnetic re-and 19 fluorine chemi-solute sign of fluorine-pl [TR-18] PHOSPHIDES

NT BORON PHOSPHIDES

NT GALLIUM PHOSPHIDES

NT INDIUM PHOSPHIDES de crystals for injection Growth of aluminum pi minescent light source 02 p0259 N68-11420 ical properties of rare Prepara earth phosphides [UCRL-TRANS-10222] PHOSPHINES

12 p1839 N68-22832 X ray analysis of iron tetracarbo hine crystal structure and develop outron diffraction system carbonyl triphenyl pho velopment of automate 19 p3221 N68-30984 Reactions of bors 22 p3819 N68-34822

of trifluorophosphine and platinum 23 p4005 N68-36173

nis of homogeneous ad phosphine-containing 23 p4006 N68-36238

PHOSPHORESCENCE ce in plastics after X ray or

04 p0559 N68-13691 e analysis for infrared (EGG-1183-2151) 09 p1409 N68-19089 es on multiplicities of compounds, and elec-

11 p1650 N68-21069

ching for calculating permeability of polymeric films [TR-0158/9250-01/-5]

20 p3510 N68-32660 eles of precipitating lu-suspensions onto screens 20 p3429 N68-33017 minophores from col (ERDL-T-1928-68) hydrocarbons in polymethyl methacrylate [TRW-07126-6004-R000]

22 p3824 N68-35302 scence kinetics for excited states of crystal phosphors FTD-HT-67-4921 24 p4332 N68-37910

PHOSPHORIC ACID Performance characteristics of phosphoric acid 03 p0303 N68-12040 [SAR-1]

Esters of phosphoric and thiophosphoric acids, azole erivatives, and phenylhydrazone reactions with ichlorinated phosphorus derivatives, trichlorinate trichlorinated phosp [JPRS-43714] 04 p0473 N68-13766 ric and thiophosphoric acids, and

Esters of phosp azole derivatives 04 p0473 N68-13767 of anhydrous sulfuric

Infrared absorption spectra and orthophosphoric acid 13 p2021 N68-24077

Corrosion and electrochemical behavior of titamum and titanium alloys in wet process phosphoric acid 16 p2674 N68-27117

PHOSPHORS

Enhanced thermoluminescence due to approprie electric fields to powder phosphors 04 p0561 N68-13702

Low energy alpha particles effectivenesa in produc-ing thermoluminescence for equal absorbed doses in phosphor 04 p0503 N68-13726

Infrared quenching of phosphor and melting of or-mic nolids for visualization of 10.6 micron laser beam OSL-TM-20] 08 p1183 N68-17336 [DSL-TM-20]

Temperature and spectrum dependencies of time of scintillation decay and quantum yield in intracenter luminescence of potassium chloride- lead phosphor 08 p1227 N68-18000

Time response, excitation, and luminescence specus of potassium chloride-thallium phosphor crystals 08 p1227 N68-18001

Thermochromic materials for display devices and their application as screen materials in cathode ray tube phosphors

[RASA-CR-86031] 08 p1154 N68-18022

Intrinsic efficiencies and radiation damage in polycrystalline phosphors irradiated with high energy

14 p2331 N68-25005 Preparation of KI/TI/ in operating scintillator for nP-17352] 18 p3075 N68-30328

Phosphor development for cathode ray tubes to ex-tend spectral emission without increasing decay rate [NASA-CR-96002] 22 p3849 N68-35788

Phosphor and equipment design for personnel moni-ring thermoluminescent dosimeters [TID-24522] neters 22 p3818 N68-35959

PHOSPHORUS

Neutron activation and gamma spectroscopy to determine impurities in red phosphorus [SGAE-CH-31/1966] 03 p0311 N68-12141

Thermal conductivity Seebeck coefficient, and electrical resistivity of heavily phosphorus doped silicon from 313 deg k to 673 deg k [TR-23] 03 p0406 N68-12240

Reaction products of phenylhydrazones with trichlorinated phosphorus 04 p0473 N68-13768

Free boron and phosphorus impurities determined in 06 p0795 N68-15971

Phosphorus 31 nuclear reaction as standard method for measuring neutron yield and flux from D/d,n/He 3 reaction 06 p0887 N68-16095

Solidification analysis, and solid-liquid interface tem-perature limits for supercooled phosphor [NRL-6600] 08 p1261 N68-18206 Measured transition probabilities for visible lines of carbon, silicon, phosphorus, and suffer [NASA-CR-93928] 11 p1658 N68-21839

A-908

onical field eq

Energy distribution of monoy tering of neutrons in ferromagne [FTD-MT-24-8-68]

HATES
ADENOSINE DIPHOSPHATE [ADP]
ADENOSINE TRIPHOSPHATE [ATP]
ADMONIUM PHOSPHATES
NUCLEOTIDES
POTASSILIM PHOSPHATES
PYRIDINE NUCLEOTIDES

INASA-TM-X-63366

[BNL-12596]

SPHATES

e of photochemically reactive in enamels and thinners by gas

08 p1142 N68-17874

themical and redox

ctrodes 09 p1300 Nat-19393

11 p1649 N68-21053

intermediates as of optically excit

11 p1658 N68-21744

chemical behavior of S to potassium chloride

12 p1841 N6B-22958

14 p2211 N68-24641

vapor at 2062A under

ns of photochromic glumes 12 p1849 N68-2230

Quantitative measure or romatic hydrocarbons in er matographic procedure

Photochemical studies of m

Conference preprints hotochemical reactions, re secies, and fluorescence an

CCL-241)

SUBJECT INDEX Spectrophotometric determinganoelemental compounds one of phosphorus in 14 p2219 N68-25615 Radial distribution function for amorphous elec-trodeposited nickel-phosphorus alloy [TR-[7] 18 p3092 N68-30426 Vibrational mode studies of lithium defect com-plexes in gallium arsenide and phosphorus-boron pairs in silicon (USCEE-282) 19 p3356 N68-32070 Electron-phonon coupling in impurity absorption band and diffusion of phosphorus in oxide layer on sil-(FTD-HT-67-159) 20 p3576 N68-33580 Diffusion of phosphorus in oxide layer on silicon sur-20 p3576 N68-33582 da for chemical analysis of phosphorus -66-160] 22 p3824 N68-35347 [FTD-MT-66-160] Friction characteristics iron-phosphorus powder metallurgy alloys [FTD-MT-24-238-67] 22 p3891 N68-35444 Electron paramagnetic resonance analysis of radia-tion effects in alkali metal halides, phosphorus, and su-COO-1054-321 24 p4333 N68-38080 PHOSPHORUS COMPOUNDS PHORUS COMPOUNDS
ADENOSINE DIPHOSPHATE [ADP]
ADENOSINE TRIPHOSPHATE [ATP]
AMMONIUM PHOSPHATES
BORON PHOSPHIDES
GALLIUM PHOSPHIDES
INDIUM PHOSPHIDES
NUCLEOTIDES
NUCLEOTIDES NT NT NT ORGANIC PHOSPHORUS COMPOUNDS PHOSPHATES NT PHOSPHIDES PHOSPHINES NT NT PHOSPHORIC ACID
NT POTASSIUM PHOSPHATES
NT PYRIDINE NUCLEOTIDES Nitrogen containing phosphorus oxy-anions in thermal neutron irradiated anmonium and calcium hypophosphites desolved in liquid ammonium [COO-1618-4] 01 p0022 Ns8-10533 Structural features and stabilities of new metal phoscomplexes 01 p0023 N68-10644 Chemical reactions in gamma radiation of various hosphorus trichlorides in mixtures with polymerizable phosphorus t olefins [NP-16645] 02 p0177 N68-11524 Analytical applications of esters of phosphorothioic and phosphorodithioic acids [IS-T-144] 03 p0311 N68-12166 Review of papers presented on organophosphorous and organomercury chemistry [AROD-2832-37-C] 03 p0314 N68-12512 Moisture effect on inhibitory action of phosphorus oxychloride on air oxidation of graphite [AERE-R-5552] 05 p0622 N68-14315 Mass spectrometry studies of volatile phosphorus and silicon inorganic compounds [NRL-6639] - 09 p1292 N68-18426 Spectral analysis of structure and reactions of phosphorus iodides 09 p1295 N68-18889 Luminescent phosphor response analysis for infrared imaging of cool effluent sources [EGG-1183-2151] 09 p1409 N68-19089 Reactions of perfluore nitrosoalkanes with ethers of phosphorus acid JPRS-447801 10 p1484 N68-19933 Optical scattering in laser pumped ammonium (REPT.-874) 11 p1764 N68-20726 on metals containing Summary data on nitrogen, phosphorus, or sulfur [AFOSR-68-0343] 11 p1646 N68-20775 Synthesis and donor properties of ligands containing nitrogen, phosphorous, or arsenic atoms 13 p2014 N68-23601 Base strength of various neutral organophosphorus

DEX

2660

ho-ns 3017

5302

rystal

7910

acid

2040

with

3766

, and

3767

lfuric

4077

7117

high

3702

3726

of or-

7336

ne of er lu-

8000

ectra

8001

and ray

8022

e in nergy

5005

e for

0328

o ex-

te 5788

noni-

5959

y to

2141

elec-

2240

with

3768

sed in

5971

He 3

6095

tem-

8206

ses of

1839

Nuclear magnetic resonance measurements in sodi-um chloride type rare earth group 5A intermetallic 20 p3567 N68-32832 Thermodynamic property data tables for CHNOPS compounds and heats of combustion and formation for organic compounds of biological interest [NASA-CR-96468] 20 p3432 N68-33427 asers with selenium ox-oride matrices 21 p3700 N68-34566 Properties of pulsed liquid lychloride or phosphorus oxych [TR-68-826.4] Photochemical dissociation of nitrogen molecules following irradiation of krypton sensitized mixture of two stable molecules of nitrogen 14 and nitrogen 15 [AD-664933] 11 p1655 N68-21494 Chemical reaction study of ethylene glycol monoal-kyl ethers with phosphorus pentasulfide for developing antioxidant additives for lubricating oils [FTD-HT-67-76] 25 p4010 N68-36704 PHOSPHORUS ISOTOPES species, and fi Nuclear structure, reactions, and energy levels of phosphorus 31, carbon 14, silicon 30, lithium 6, alu-minum 27, and sulfur 32 [COO-1120-68] 05 p0715 N68-14586 Optical absorption and phot centers found in polycrystall solidified from sulfur containin [NP-TR-1614] Proton irradiation effects on phosphorus absorption into rat tissue proteins 09 p1282 N68-18914 PHOSPHORUS OXIDES Gas chromatography and fragmentation-gas chromatography of diphosphine oxides and uranyl nitratiphosphine oxide complexes COO-913-21) diphosphin [IS-T-[84] 09 p1294 N68-18829 PHOSPHORUS POLYMERS Metallo semi-inorganic polymer synthesis to obta high thermal and hydrolytic stability [AD-660367] 02 p0177 N68-114. 02 p0177 N68-11426 Preparation of chromium 3 tris/phosphinates/ by metathes [TR-56] 06 p0790 N68-15696 PHOSPHORYLATION Model system for photophosp horylation 13 p2014 N68-23596 PHOTOABSORPTION Calculated cross sections, and polarization correla-tions for shell atomic photoeffect of screened potential 09 n1394 N68-19135 inhium chloride, lithi mear lithium K edge [DESY-67/42] nts in lithium fluoride, ide, and lithium iodide 13 p2011 N68-23289 PHOTOCATHODES Quantum efficiencies of photocathodes for ultraviolet [NASA-TM-X-63215] of spectrally selective 14 p2330 N68-24731 Nonlinear optical effects of intense monochromatic light beam interaction at silver and cesium antimonide photocathode surfaces 17 p2897 N68-28953 PHOTOCELLS

U PHOTOELECTRIC CELLS PHOTOCHEMICAL REACTIONS
NT PHOTOCHROMISM
NT PHOTODECOMPOSITION
NT PHOTOLYSIS
NT PHOTOSYNTHESIS
NT RADIOLYSIS Temporal solutions for photochemical equations escribing distribution of ozone and oxygen during auroral events [NASA-TN-D-3993] 01 p0057 N68-10369 Infrared and ultraviolet analysis of polycarbonate photodegradation
[TIL/T-5731] 02 p0178 N68-11590 Photochemical behavior of triphenyl methane derivatives 02 p0178 N68-11873 Reactions of dioxygenyl fluoroborate and oxygen fluorides (IFTRI-C227-20)

Progress in che [RRL-2310-214]

14 p2214 N68-24741

19 p3225 N68-31282

20 p3417 N68-32481

Organic nitrites deoxygenated in presence of ter-

Spectroscopic investigation of group 5 donor states aermanium

valent phosphorus reagents [NASA-CR-95937]

ween benzene and 4-n dosimetry 14 p2212 N68-24672 Photochemical reaction to bromobiphenyl for application [COO-913-23] Photochemical on absorption ban (COO-913-22) nzene pressure effects 14 p2212 N68-24679 nal Conference on Photochemistry 1 15 p2407 N68-26073 Internations (PB-176466) Direct measurement of gas rate constants for hotoexcited molecules using phase fluorimeter 15 p2408 N68-26081 Photochemistry of ketene-nitric oxide-hydrogen 15 p2409 N68-26085 on of ethylene 15 p2409 N68-26087 Photochemistry of allyl chloride in liquid and solid 15 p2411 N68-26099 Photodegradation of polyvinyl chloride exposed to ultraviolet radiation [NASA-TM-X-59805] 15 p2487 N68-26106 ocatalysis of reaction ules and fluorocarbons 15 p2417 N68-26516 Tuned ruby laser for ph-between excited bromine mole (NASA-CR-94928) Laser spectroscopic recording technique for photo-graphic absorption spectra of transient intermediates in singlet states of aromatic hydrocarbons [TRW-45824-6006-R000] 16 p2607 N68-27111 Spectroscopic and nuclear magnetic resonance study of photorearrangement of dibenzoylethylenes and benzobicyclooctatriene 16 p2611 N68-27842 Chemical reactions of solid potassium permaganates exposed to flash photolysis and flush heating 19 p3220 N68-30895 dehydrogenation of comp [RTS-4318] of hydrogenation and is of porphin series 20 p3405 N68-32429 Mathematical model presence of water vapor [RM-5643-PR] one photochemistry in 21 p3655 N68-34722 Perfectly mixed photoche for determining their light in cy of batch reactions, and chain reactions cal reactor, photogrobe nity, quantum efficien-del for chain and non 22 p3821 N68-35038 emical conversion of ide crystals 22 p3825 N68-35410 04 p0474 N68-13836 High temperature color centers in potassi [FTD-MT-24-2[7-67] Pulse radiolysis and flish photolysis, precursor of solecular hydrogen in radiolysis of water, germinate recombination in photochemistry, and radiation and of-atom chemistry of crystals Ultraviolet radi and related come cyclobutyl dimer photochemical re [NYO-2798-32] ts in denzyribonucleic acid dio induced formation of time products in DNA, and 05 p0619 N68-14144 os p0624 N68-14492 23 p3999 N68-36759 Proportion of caygor chemistry and photoco [NYO-3753-3] g radicals in radi Soviet research in plasma try, radiochemistry, photocl ionosphere and shock waves [JPRS-44048] intry, nuclear chemis-try, and chemistry of ry of aqueous solutions 23 p4013 N68-36959 a of slow phenomena in 05 p0627 N68-14751 Fluorocarbonyl trifluoromet by ultraviolet irradiation of m peroxide and fluorine [TR-63] thyl peroxide synthesized nixtures of fluorocarbon 23 p4157 N68-37296 PHOTOCHEMISTRY U PHOTOCHEMI 06 p0789 N68-15623 ICAL REACTIONS A-909

Effe double photo

Pho and r techni [AD-6

NT I

Tec

Gen ty sola

Drif

ciency

[AMR

Pho and r techni

AD-6

PHOTO

NT I Photogroduc solids (R67S

Astr

AD-6

Two odide lashla

REPT

NAS/

Pola and ph in utra (DES)

Inter thin fil [AFA]

Pho

TVA-

Elector cry

polariz

Elec

PHOTOI

Photelectro of film [NAS/

Mat

PHOTOCHROMISM

Properties and applications of photochromic glasses 12 p1849 N68-22309

PHOTOCONDUCTIVE CELLS

Intrinsic thermal radiation of moon by photoconduc-tive cell telescopes with optical acoustic receiver [FTD-MT-67-23] 16 p2754 N68-27058

Energy transfer proces duction in pyrene crystals [REPT.-3896.8-P] es and intrinsic photocon 01 p0124 N68-10492 Laser detector utilizing photodielectric effect in cooled semiconductors applied in communication

system [AFOSR-67-2138] 02 p0257 N68-11127

Dark conductivity, minescence of cadmium sulfur or cadmium vapor [NASA-CR-91140] 03 p0404 N68-12101

Quasi-dc photoconductance measurements in polyethylene and polystyrene during steady state cobalt 60 irradiation [NCL-67-35R]

03 p0408 N68-12576 Photoconductivity of metal oxides in high intensity gamma radiation field [NASA-CR-77829]

09 p1411 N68-19333 Band gap photoconductivity of high purity single rystals of cubic silicon carbide 11 p1774 N68-21573

X ray irradiation effects on germanium quantum yield and photo JPRS-452781 12 p1929 N68-22534

Q switched ruby laser induce hotoconductivity in silver halides ced luminescence and

15 p2478 N68-26324

Photoconductivity spectra of low temperature electron irradiated germanium [REPT.-1968-03]. 15 p2539 N68-26374

15 p2415 N68-26396

Photoconductivity method for measuring effects of radiation induced defects in n-type silicon [NASA-CR-88253] 15 p2541 N68-26632

Single and multielement elec-tor feasibility from polarizatic ducting and electroluminescen [CAL-RF-2455-0-1] ent electro-optic image subtrac-arization control of photocon-

scent materials 16 p2714 N68-27565 Photoconductivity and sensitivity, and acceptor levels in InSb-GaSb and InAs-GaAs alloys

18 p3148 N68-29574 Fast response time silicon photoconductive detectors

[NASA-CR-86069] 18 p3045 N68-29914 Effects of impurities o electrical properties of or-

ductors and photoco conductivity 18 p3153 N68-30148 MRB2031F1

Hopping conductivity effect on acoustic attenuation found waves in CdS 19 p3353 N68-31258

Gas chromatographic analysm or com UV irradiated ZnO samples 23 p4149 N68-36283

Thermoluminescence, ther optical flash, optical quenchin of cadmium sulfide single crys ninescence, thermally stimulated current, optical quenching, and photoconductivity ulfide single crystals (FTD-HT-67-199) 23 p4152 N68-36709

PHOTOCONDUCTORS

Laser radiation effects on lead sulfide photoconduc-03 p0405 N68-12155

Beam alignment techniques developed for infrared native single crystal germanium to study multiplication effect in photoc [NASA-CR-86035]

09 p1410 N68-19129 Transport properties of Se-PbTe combination for possible use in infrared photoconductive multipliers [AD-670009] 18 p3049 N68-30675

CdO films used as transpa CdS single crystal and film pho [RTS-4335] 20 p3561 N68-32291

Beam alignment techni enhancement effect in photo [NASA-CR-86093] based on current ductors 21 p3753 N68-34077

Crystallization method of producing ribbon crystals of silicon for use in photoresistors and electronic equip-

23 p4138 N68-37308

U ELECTRIC CURRENT
U PHOTOELECTRIC EMISSION

PROTOBECOMPOSITION

ositions and formation of uranyl ions in organic media [COO-1695-3] 01 p0023 N68-10637

Free radicals in photodegradation of polystyrene and its homologs [NRL-6653]

09 p1292 N68-18379 Photodecomposition of carbon monoxide molecules in far ultraviolet following irradiation with krypton and action resonance wavelengths

(AD-664934) 11 p1655 N68-21492

ies of ammonia decomposition using flast [AD-664932] 11 p1656 N68-21521

on of hydroperoxides 12 p1831 N68-21933 [NASA-CR-94252]

Photodegradation of polyvinyl chloride exposed to traviolet radiation [NASA-TM-X-59805] 15 p2487 N68-26106

Two-body photodisintegration energy region about first pion-na [LNF-68/14] tion of helium 3 in gamma icleon resonance 15 p2519 N68-26361

U PHOTOMETERS

PHOTODIODES

Photovoltaic efficiency of photodiodes in solar cells 08 p1124 N68-17828

Solid state image sensor array [NASA-CR-86039] 09 p1315 N68-19209

Optical recording on high speed infrared film with allium arsenide intensity modulated light emitting gallium are diodes [USL-856] 10 p1531 N68-20322

Photodiode and vidicon read-in devices for convert-ing graphic data on paper tape or in pulse form on mag-netic tapes into binary digital form for digital compu-

(FTD-MT-24-286-671 11 p1670 N68-21554 Quantum mechanical theory of stimulated resonance aman scattering and laser synchronization by

FTD-MT-66-87] 12 p1915 N68-22129 Photodiode system for synchronized switching of pulsed laser

12 p1884 N68-22131 Integrated circuit switch utilizing internal photon d detection techniques 4321] 12 p1852 N68-22234 NASA-CR-94321]

ence in group 2-6 compounds 13 p2136 N68-23794

Calibrating, radiators, and photodiode, Compton, hotomultiplier and logarithmic detectors in radiation etetor handbook [UCRL-50176] 15 p2471 N68-26824

Semiconductor work functions for infrared detector and cathodic emission, and analysis of photoelectric emission yield emission yield [AFCRL-68-0122]

18 p3046 N68-30089 Sensitivity of photoelectric diode detector for soft fluorescent X rays [UCID-15248] 23 p4062 N68-36602

Investigation of four-element germanium and silion sosition sensitive diodes to be used as sensors for shotoelectrical servosystems

23 p4033 N68-37305 Design and manufacturing methods for photodiode matrix in form of solid circuit of monolithic germanium

23 p4033 N68-37306

PHOTODISSOCIATION

ociation cross section data for hydrogen 19 m 27 vibrational levels 09 p1399 N68-19479 and deuteris

added gas collision in-15 p2408 N68-26077

odissociation of nitrosyl chloride and nitric n vacuum ultraviolet 15 p2409 N68-26086

Primary modes of decomps have melecules ition of superexcited n-15 p2410 N68-26090

15 p2412 N68-26101

Threshold theorems for ple tegration of deu-(N-TH-68/4) 18 p3134 N68-30464

n of carbon molecules in comet atmosphere [NASA-CR-96291] 20 p3587 N68-32903

PHOTOELASTIC ANALYSIS
NT PHOTOGRAMMETRY

Models of fuel bearing nuclear reactor con for analysis of individual principal and circu stresses based on isocline isochromatic s

NASA-TT-F-113711 04 p0587 N68-13080 n of stree es at opening in

thin walled cylindrical pres [RR-67-9D7-PHOTO-R1]

07 p1088 N68-16180 Photogrammetric analyses of film shrinkage transfor-

[RADC-TR-67-553] 07 p0998 N68-16730 Photoelastic stress measurement in holding sections of wheels for dovetail connections of compressor blades to disks

09 p1442 N68-18685 crack propagation in notched metal plates
[TR-4]

Three dimensional photoelastic determination of stresses in split cylinder case bonded propellants [REPT.-14]

ded propellants 10 p1607 N68-20148 Analysis of flow and fracture propensity of steel plates using photoelastic model

11 p1792 N68-20706 Photoelastic methods of stress analysis in infrared

14 p2278 N68-25237

Photoelastic analysis of stress distribution in plates loaded through pins [NEL-311] 16 p2777 N68-27426 16 p2777 N68-27426

Anisotropic photoelastic analysis of fiber reinforced omposite materials 18 p3099 N68-30345

hotoelastic analysis of shock wave propagation and ction of constraints in dynamic system 18/67] 18 p3124 N68-30393 [T-38/67] ic analysis of stress wave

Dynamic photoel propagation in cones 19 p3374 N68-30883

Three dimensional photoelastic tests for stress dis-tribution in uniaxially loaded thick plates containing INEL-2881 19 p3378 N68-31627

Photoelastic anal fasteners and plates [NASA-CR-96157] 19 p3381 N68-31846

dimensional photoelastic analysis of specific int grain geometry subjected to restrained 21 p3757 N68-33624

Cracking behavior of reinfo predicted by photoelastic photoelastic interferometer orced concrete members model analysis using

21 p3781 N68-33658 otoelastic models of stress transfer mechanism in ker reinforced composite aluminum matrix materi-

21 p3782 N68-33674

Photoelastic method for stress analysis of two and three dimensional bodies subjected to elastic deforma-21 p3785 N68-33805

Poincare sphere properties and representation of birefringent behavior of materials, and two and three dimensional photoelastic techniques

ques 21 p3786 N68-33807 Phase transformation model for photoelastic deformation analysis on stressed polymer materials 22 p3974 N68-35609

Photometric determination of quantitative stress field changes during optical polarization study on loaded disks 22 p3974 N68-35610

PHOTOELASTIC MATERIALS

Temperature dependence of cross-linked amorphous objethylene photoelastic properties COA-NOTE-MAT-11] 01 p0081 N68-10494 polyethylene photoetastic [COA-NOTE-MAT-11] Production and application of linear elastic isotropic materials with 3-D photoelastic freezing properties 21 p3786 N68-33808

Elastoplastic deformation of cylindrical shells with penings and photoelastic reinforcement coverings openings and photo (FTD-HT-67-421) 24 p4351 N68-38310

PHOTOELASTICITY

Transformations of two-dimensional vibration com-ponents applied to derive methods for expressing changes to polarized light in inhomogeneous stress field

[NSF-G-20259/2] 04 p0586 N68-13053 Sequentially modulated ruby mitted and scattered light dyna [T&AM-304] d ruby laser system for trans-dynamic photoelasticity 10 p1536 N68-19499 DEX

strices rential tra of

3080

ing in

6180

nsfor-

6730

tions

8685

and

9859

n of

0148 steel

0706

rared

5237

7426

3345 and

1393

wave

1883

dis-

627

246

cific

624 bers

658

n in

eri-

674

and ma-

805

of

107

for-

on

110

94

08

10

53

Photoelastic investigation of stress concentration in sphere cylinder transition region [NCEL-TR-572] 13 p2163 N68-24175 Theory of nonli 14 p2355 N68-24689

Effect of rotating secondary principal stress axes on double refraction phenomenon in scattered light photoelasticity 21 p3785 N68-33806

Scattered light photoelastic sional dynamic stress analysis ity used in three dimen-

22 p3968 N68-34857 Photoelastic transducer optical signal monitoring nd recording using photocells and photographic

[AD-673848] 23 p4061 N68-36434 HOTOELECTRIC CELLS NT PHOTOCONDUCTIVE CELLS

NT PHOTOVOLTAIC CELLS Photoelectric scanning devices of automatic search and tracking using methods of zonal element scanning [FTD-MT-67-68] 03 p0332 N68-12265

Technology for fabricating cadmium telluride solar photoelectric cells with improved energy conversion efficiency

17 p2814 N68-28744 Germanium solar photoelectric cells for high interac-ty solar energy conversion devices 17 p2815 N68-28746

Germanium solar photoelectric cells for spacecraft power supplies

17 p2815 N68-28747

Drift field and field gradient effects on quantum effi-ciency of radiant energy photoelectric cells 19 p3348 N68-30929

Cadmium sulfide layer ph toresistive cells developed for use in analog multip [AMRL-TR-67-168] 20 p3453 N68-33377

Photoelastic transducer of and recording using photocer optical signal monitoring photocells and photographic [AD-673848] 23 p4061 N68-36434

Investigation of four-element germanium and silion osition sensitive diodes to be used as sensors for hotoelectrical servosystems 23 p4033 N68-37305

PROTORLECTRIC EFFECT NT PHOTOIONIZATIO

Photoelectric effect, Compton effect, and pair roduction responsible for radiation absorption in

[R67SD55] 01 p0122 N68-10159 Astronomical photoelectric measurements and polarimetry of the star W Serpentis over 33 nights [AD-659202] 01 p0135 N68-10651

Two photon photoelectric effect spectrum of cesium iodide film using O-switched ruby laser and zenon flashhamp as light sources [REPT.-838] 07 p1004 N68-16459

Mathematical model of photoelectric effect without

NASA-CR-93557] 09 p1383 N68-19038 Polarization dependent transmittance, reflectance, and photoeffect of Al films using synchrotron radiation in utraviolet region [DESY-67/33] 12 p1889 N68-22636

ternal photoelectric effect in evaporated aluminum film sandwich structures [AFAL-TR-67-347] 18 p3046 N68-30230

Photoelectrochemical study of anodic dissolution of 19 p3228 N68-31676 (TVA-P-4254)

Electrical and photoelectrical properties of molecular crystals determined from ionization energies of molecules, and polarization energy of charges AFOSR-68-1344]

19 p3229 N68-31795

Anomalous surface photoelectric effect in nickel [TR-50] 23 p4157 N68-37281 Electrical resistivity and photoelectric behavior of acuum-deposited sickel films measured after anneal-

24 p4333 N68-38119

PHOTOELECTRIC EMISSION

Photoelectric emission measurements of excited ectrons attenuation length in metal films as function of film thickness [NASA-CR-90062] 01 p0126 N68-10956

Exact solution for ph walk model of photoemis [TR-0158/3230-13/-1] eld in isotropic rando

05 p0728 N68-14504

Time lag of photoelectric stellar time transit device and effects of temperature, atmospheric absorption, and optical properties

05 p0740 N68-14927 dies of noble metals, cuprous halides, and alkali halid [NASA-CR-92571]

06 p0892 N68-15118 Photoelectric emission from solid to solid in meta oxide semiconductors in silicon-silicon oxide-soli

[REPT.-67-57] 09 p1406 N68-18448 ic structure of cade Photoemission for electronic lenides, sulfides, and tellurides

09 n1411 N68-19203 ts of band structure of oemission measurer agnetic nickel alumis

alloys 11 p1769 N68-20780 Photoelectric observation of varia uriable sturs 11 p1782 N68-21248

Measured transition probabilities for visible lines of carbon, silicon, phosphorus, and sulfur [NASA-CR-93928] 11 p1658 N68-21839

Partially conserved vector and tensor current hypotheses applied to photopion amplitude [IC-67-17] 12 p1923 N68-22191

Photoemission and optical properties of cobalt, pal-ladium, platinum, and gadoliuium [SU-SEL-67-045] 13 p2137 N68-23854

Photoelectric yields of metals in vacuum ultraviolet [NASA-CR-94614] 13 p2139 N68-24186 Mathematical model for performance analysis of Brayton cycle in turbine engines

14 p2334 N68-25298 Biphotonic photoionization, photoconductivity, photoelectric emission and electrical conductivity in organic liquids

15 n2415 N68-26396 Volume photoelectric er films in vacuum ultraviolet on of evaporated gold

17 p2956 N68-28602 Quantum transport theory in photodection proble and correlation formalism to describe photon emission or absorption using perturbation theory [AFCRL-67-0588] 17 p2936 N68-292 theory 17 p2936 N68-29212

Semiconductor work functions for infrared detector and cuthodic emission, and analysis of photoelectric emission yield

emission yield [AFCRL-68-0122] 18 p3046 N68-30089 Beam alignment techniques based on current enhancement effect in photoconductors [NASA-CR-86093] 21 p3753 N68-34077

Optical detection and cathodic emission in semicon-ductor Schottky barriers [APCRL-68-0302] 21 p3755 N68-34561

Vacuum ultraviolet pho cryogenic thin film rare gases otoelectric emission of

22 p3946 N68-34816

Photoemission and optical reflectivity measurements on cobalt, palladium, platinum, and gadolinium 23 p4148 N68-36125

Verification of transition element oxide optical and sotoemission models through experimentation 23 p4154 N68-36827

Reflectance and photoemission measurements used to determine optical properties and electronic band [UCRL-50307] 23 p4154 N68-36852

Ultrahigh vacuum reflectometer for use in studying flectance, transmittance, and photoemission DESY-68/26) 23 p4065 N68-37173 reflectance, trai [DESY-68/26]

Optically excited plasma resonance in aluminum inder ultrahigh vacuum conditions in reflection and hotoemission DESY-68/27] 23 p4144 N68-37184

PHOTOELECTRIC GENERATORS

High frequency three-point generator for parameter measurements on thin semiconducting films [FTD-HT-66-414] 04 p0508 N68-13224 PHOTOELECTRIC MATERIALS

Improved ternary mercuric iodides and other ther-tochromic materials for display devices 12 p1849 N68-22308

Theoretical and experimental measures to obtain solid state and vacuum type infrared image converters [J-255-5] 15 p2438 N68-26863

Optical scanning for switch driving signal with otoconductive cells REPT.-2701 22 p3847 N68-35449

U ELECTROPHOTOMETRY

PHOTOELECTRICITY

Artificial star light source apparatus for determining me lag of astronomical photoelectric time transit

05 p0740 N68-14925

05 p0665 N68-14926

it device 05 p0740 N68-14929

Photoelectric and electron microscopic processes for yealing inhomogeneities in apodic tantalism naide

06 p0893 N68-15241 ce method of

Radio telescope ph studying star image vib IFTD-RT-66-5961 06 p0848 N68-16078

Calculating signal to noise ratio of photoelectric stems with scanning light beams 69 p1320 N68-18807

Optical and photoelectric properties, including plarization effects, of gold and aluminum in extreme ultraviolet region [NASA-CR-93971] 11 p1772 N68-21212

Results of photoelectric search for beta Cephei stars nearest galactic clusters 14 p2342 N68-24482

Photoelectric and optical properties of selected com-mercial metal foils and films in extreme ultraviolet spectra region 14 p2335 N68-25311

on, photoelectricity, signal to noise eters related to Poisson process 15 p2426 N68-26231

Visual, spectrophotome methods of colorimetry [NBS-MONOGRAPH-104] , and photoelectric 13 p2403 N68-26866

Electrical measurements and photosensity of risc lifide crystals with defects induced by assessing or disactive impurities 17 p2957 N68-28691

al properties of syntheti-er antimony sulfide 18 p3155 N68-30823

Photoelectric function of ectrical and optical signal rters for ope

23 p4039 N68-37300 Mathematical study of operating conditions of photopotentiometer of transverse conductivity. 23 p4032 N68-37302

PHOTOELECTROMAGNETIC BETECTORS
U RADIATION MEASURING INSTRUMENTS
U SENSORS

PHOTOELECTRONICS

U ELECTRONICS

U PHOTOELECTRICITY

PHOTOELECTRONS

Exact solution for photoyield in instropic random walk model of photoemission [TR-0158/3230-13/-1] 05 p0728 N68-14504

Relativistic quantum analysis positron pair production, and pi netic field [NASA-TT-F-11618] s on luminous electron hoton emission in mag 10 p1566 N68-19751

Auger, internal conversion, and gamma ray spectra from protactinium 233 decay, and photoelectron scat-tering effect on IEC method

12 p1955 N68-22205 Photoelectron counting st quantum mechanical laser [NASA-CR-94346] tics produced by fully

13 p2079 N68-23392 Lunar photoelectre re models 16 p2752 N68-27181

Presunrise heating of ambi-aphere due to conjugate point p [NASA-CR-83671] ent electrons in iono-hotoelectrons 16 p2656 N68-27869 nd photoelectron man Feasibibility study of A troscopy as analytical too [NASA-TM-X-63255]

17 a2945 N68-29514 ents in togoide iono sphere using returding p 22 p3957 N68-35999

ing and photoelectron ection of supernovan 23 p4174 N68-37387

HOTOEMISSION
U PHOTOELECTRIC EMISSION Selection (tenioritisment-of-or

U EMISSIVITY
U PHOTOELECTRIC EMISSION

Basic combine [ARL-6

tion of I

Cont

Evalu

(AD-67

HOTOG

NT PI

Effec

INASA

Wind

Phote in high [NASA

Meth

Егго

ACIC

(NASA

tion of

Non-

INASA

ray diff

Two
cial me
[NAS/

data (NAS/

Phot

Con

from pl

film in v

PHOTOEMITTERS
U PHOTOELECTRIC MATERIALS PHOTOENGRAVING tact prints in emulsions Production metho or chromium control (NASA-CR-92103) 13 p2074 N68-23731 PHOTOGEOLOGY stric and photographic techniques ic-atmospheric interface environ-[AFCRL-67-0603] 15 p2461 N68-26340 PROTOGRAMMETRY Visible and infrared inta sveform analysis of geographic al patterns 02 p0203 N68-11140 [TR-4] Project SLOPE /Study of Lunar Orbiter Photographic Evaluation/ techniques, implementation and [NASA-CR-66493] 02 p0212 N68-11407 Secondary analysis tasks for phase three of Project SLOPE /Study of Lunar Orbiter Photographic Evalua-[NASA-CR-66495] 02 p0212 N68-11408 etric recording Optical distortions in pho-through bubble chamber winds 05 p0699 N68-14295 Effects of turbulent fluctuat on quality of bubble image phoons in bubble chamber ographs 05 p0754 N68-14296 Dark field photography for large bubble chamber ith transparent bend sheeting 05 p0660 N68-14298 Oceanographic and hydrographic applications of aerial survey techniques [FTD-MT-64-347] 05 p0651 N68-14347 adjustments manual of elec-ctor for bubble chamber film 05 p0662 N68-14419 UCRL-176111 ilation maps of fissure [ACIC-TC-1292] 06 p0841 N68-15845 07 p1093 N68-17136 al factors affe (AD-663821) 09 p1339 N68-18328 Error analysis on elevation photogrammetric network [ACIC-TC-1289] on distortions of points in 09 p1340 N68-18489 red for monocular Precision of p AD-664184 09 p1333 N68-18694 trical survey of noctilucent [NASA-TT-F-11520] 09 p1333 N68-18821 oto and three-photo relative Comparison of two-ph 10 p1527 N68-19501 Strip, and b synthetic serial [PB-176461] s by polynomials for 10 p1527 N68-19519 10 p1528 N68-19626 dern goological surveying niques and appli-

13 p2064 N68-24168 or studying factors affect-15 p2467 N68-26241 16 p2659 N68-27136 rammetric plate reduction error reduction in photo-17 p2883 N68-28630 of pictorial data fro time behavior of qua 17 p2884 N68-28835

al investigation to determine effect of bserved data on accuracy of aerotrianguing of oi weighting of ol lation results [AD-672101] 21 p3688 N68-34720 Star stereophotogram in cloud measurements try for camera orientation 21 p3720 N68-34787 PHOTOGRAPH INTERPRETATION U PHOTOINTERPRETATION PHOTOGRAPHIC DEVELOPERS Extended dynamic range film processing, and developers that produce low granularity, reduce apparent flare, and increase detectivity [TO-B-68-6] 08 p1180 N68-17919 08 pl 180 N68-17919 Chemistry of photographic deve [AFOSR-67-1854] 11 p1701 N68-21656 Developing methods fo tion of Kodak no acreen m [NRL-6732] nsification and reduc-X ray film 22 p3876 N68-35261 Use of 1-phenyl-3-pyrazolidone as photographic [RAE-LIB-TRANS-1313] 24 p4257 N68-37954 Evaluation of coated paper and liquid developer for continuous tone electrophotography [AD-674241] 24 p4259 N68-38343 24 p4259 N68-38343 PHOTOGRAPHIC EMULSIONS NT NUCLEAR EMULSIONS on nuclei interactions for oner 01 p0132 PI68-10852 Super high energy interactions in large blocks of INR-P-826/VI/PH1 09 p1391 N68-18937 Physics of photographic pro [ORO-2036-3] 11 p1696 N68-21032 System for auto tic analysis of photographs of scin-(RT/EL/67/13) 11 p1698 N68-21348 ic development 11 p1701 N68-21656 Chemistry of phot [AFOSR-67-1854] Recovery and rejuve nide blench by bromin [SC-DC-68-2132] of photographic iron cya-17 p2841 N68-28931 Computer program for q mass spectrographic photop [NRL-6655] itave interpretation of 19 p3279 N68-31620 Multiple production of particles in collisions of 200 GeV pions with photographic emulsion nuclei [REPT.-902/VI/PH] 19 p3335 N68-31817 Basic parameters for films and image intensifier film combinations and performance comparison [ARL-68-0073] 20 p3479 N68-33259 Retarding properties of nuclear photographic emul-[FTD-MT-66-74] 22 p3930 N68-35528 Chemical sensitization due t photographic silver bromide em e to sulfur maturation in 23 p4011 N68-36829 Modulation transfer function of photographic films udied for dependence on optical properties and struc-ure of emulsion layer 23 p4063 N68-36977 Evaluation of coated paper and liquid developer for continuous tone electrophotography [AD-674241] 24 p4259 N68-38343 PHOTOGRAPHIC EQUIPMENT NT BALLISTIC CAMERAS NT CAMERA SHUTTERS NT CORONAGRAPHS NT FRAMING CAMERAS NT HIGH SPEED CAMERAS solution criteria for optical and photographic [NAVTRADEVCEN-IH-137] 03 p0343 N68-12289 lastopic iron X ray source for portable stress diffrac-

tion analysis and photographic equipment [COO-578P28-10] 03 p0344 N68-12421 Photographic capabilities and design of Lunar [NASA FACTS, V. 4, NO. 4] 06 p0917 N68-16009 Analysis and evaluation of Lunik 9 spacecraft imagery, and specification of spacecraft and photographic instruments [NASA-CR-980] 07 p0999 N68-16838 apping system for Lunar Analysis of pho [NASA-CR-93433] 09 p1419 N68-18768 Outline of operations a rocket launch photography [NASA-TM-X-52401] purposes of cameras for 10 p1529 N68-19835

SUBJECT INDEX Two channel photographic plate guiding control stem for long exposure to astronomical objects 11 p1698 N68-21168 Design requirements an equipment to provide in raphy of Moon and Mars [NASA-TM-X-52341] aints of photographic in on surface topog 15 p2467 N68-26244 ction system for testing SCL-DR-68-111 15 p2479 N68-26791 Equipment design for microphotography - camera, rtwork, lighting systems, photographic techniques and (SRDE-67001) 18 p3071 N68-29655 Mathematical model for calculating diagoint configurations for photographic lens correction
[PROM.-4061] 18 p3123 N68-30270 Using modulation trans trol of photographic lenses nction for quality con-20 p3481 N68-33395 Atmospheric tritis ric tritium effects on photographic, ther-int, and radiophotoluminescent dosime-[BNWL-SA-1569] 20 p3413 N68-33498 Design of advance [NASA-CR-96625] oration spacecraft 21 p3775 N68-34018 Performance and o rating characteristics of trans [USAETL-TR-40] 21 p3694 N68-34618 Design and operating characteristics of electro-opti-cal instrument for tracking of retinal blood vessels in

back of eye (NASA-CR-1121) 22 p3816 N68-35109 PHOTOGRAPHIC FILM Prediction of radiation damage to Apollo telescopic mount photographic film [NASA-TM-X-53666] 02 p0212 N68-11469 Design criteria for person [UCRL-70171] 03 p0309 N68-12688 Design and development of projected runs and technique for moving map display 05 p0688 N68-14833

Development, and perforecording, and projection a [S-67-1139] nce of photoplastic film 06 p0847 N68-15873 Tabulated cross reference data for photographs of lunar surface taken from Lunar Orbiter 5 [NASA-CR-66530] 07 p1085 N68-16225 Photogrammetric analyses of film shrinkage transfor-

[RADC-TR-67-553] 07 p0998 N68-16730 frared spectrometric tests of te film-filter combinations for healthy and diseased Douglas isible and near infra-cted black and white criminating between he [NASA-CR-93186] 08 p1126 N68-17378 Ultralinear flying spot scanner development [ECOM-2889] 08 p1179 N68-17861 Extended dynamic range fit developers that produce low graparent flare, and increase detectiv [TO-B-68-6] ic range film processing, and duce low granularity, reduce ap-08 p1180 N68-17919 Computer con data reduction of spark 08 p1181 N68-17964 Design, and processi lunar surface hand opera [NASA-CR-92015] of photographic film for 10 p1528 N68-19742

Capabilities and limitations of wave front reconstruc-

10 p1558 N68-19853

Comparing behind lens meter readings and incident light meter readings in producing 35 millimeter color sides for technical training classes [AMRL-TR-66-112] 11 p1697 N68-21160 Deformations and thickness variation of serial films [FTD-HT-67-140] 11 p1700 N68-21522 Chemistry of photogra [AFOSR-67-1834] 11 p1701 N68-21656 Polaroid film used in direct in netic fields at microwave freque [NASA-CR-94305] ect mapping of electromag-12 p1871 N68-22035 Cluster shield radiati-prolonged space mission NASA-CR-61822) n protection for films during 14 p2258 N68-25220 Classification of X ray film (NOLTR-68-39) 16 p2658 N68-27002 ng spark chamber and

Computer system bubble chamber file (SLAC-81) 16 p2629 N68-27983 Darkroom pro-diographic non film handling related to testing - programmed in-17 p2892 N68-28788

FTD-MT-63-220

NASA-CR-95379]

read-tooling tech

super wide angle photo-

technique for model making to im-in of shaded relief portrayal on USAF

Charts [ACIC-TR-104, REV.] 18 p3070 N88-30684

ing 18 p3074 N68-30050

tified radiatio (SAS-425-6)

21168

DEX

raphic topog-26244 testing

26791 mera, 29655 con-

10270 con 3395 ther-

3498 4018 rams 4618 opti-

5109 1469

2688 strip 1833 film 873 s of

225

ofor-730 of 378 861

919 ark 964 fire 742

153 ent 60 .

83

Video signal processing and analysis for negative color film television transmission 18 p3077 N68-30553

Basic parameters for films and image intensifier film combinations and performance comparison [ARL-68-0073] 20 p3479 N68-33259

Developing methods for intensification and reduc-tion of Kodak no-screen medical X ray film [NRL-6732] 22 p3876 N68-35261

theory developed accounting for diffrac-n characteristics, and illumination with 23 p4108 N68-36742

Control of static electricity in transporting 35mm [NASA-CR-97186] 23 p4109 N68-36774

Modulation transfer functional for dependence on opine of emulsion layer on of photographic films tical properties and struc-23 p4063 N68-36977

Controlled-nip unwinding technique to prevent state: aparking and damage to photographic paper 23 p4085 N68-37257 Evaluation of coated paper and liquid developer for continuous tone electrophotography [AD-674241] 24 p4259 N68-38343

ography 24 p4259 N68-38343

PHOTOGRAPHIC MEASUREMENT NT PHOTOGRAMMETRY

Effect of selected fluid page distribution - fluoresce microscopic properties of fl [NASA-TM-X-52381] 02 p0200 N68-11610

High speed photography for calculating flow veloci-ties of explosives with very low charge densities harge densities 02 p0286 N68-11685 Wind profiles and shear derived from rocket smoke

04 p0501 N68-13591 Photographic pyrometry techniques and applications in high temperature physics [NASA-TT-F-11407] 05 p0658 N68-14019

Method for computing ile attitude using data matic data reduction 07 p0972 N68-17195 WRE-TN-TRD-23

Photographic studies of bubble growth, recompres-sion, and densities in liquid hydrogen OR p1181 N68-18151

Error analysis on eleva photogrammetric network [ACIC-TC-1289] on distortions of points in 09 p1340 N68-18489

Photographic search for smi all bright comets during INASA-CR-93774] 10 p1592 N68-20010 Construction and microcator for rapid me tion of bodies [UUIP-560] on of photoelectric

14 p2259 N68-25355 Non-eclipse obser [NASA-CR-85621] 15 p2555 N68-25708 of light rays from ground

Lunar surface reflects and spacecraft photograp [NASA-CR-94918] 15 p2556 N68-25742 Photoelectric versus photo light intensity in far ultraviolet

graphic measurement of tregions 16 p2713 N68-27221 Error analysis of phray diffraction methods [158-67/41] ic measurements in X 16 p2663 N68-27698

octilucent clouds from Spatial conscionary reference star position (NASA-TT-F-)15211 16 p2701 N68-28066 ic photometry of artifi-

Two methods of ph cial meteoroids (NASA-TN-D-4667) 17 p2890 N68-29418 names, and energies of ned from photometric

Distribution of magnitudes, large meteoric bodies determined data [NASA-CR-958] 18 p3165 N68-30155 iring polarization of

Photographic method for starlight using polaroid filter 18 p3167 N68-30454 ents by photographic

20 p3410 N68-32573 plometric measure-rations of level and ents of atr

20 p3481 N68-33393 on drop size distribu-miscible liquids 21 p3679 N68-33870

it used to confirm Mercury rotation period (NASA-CR-96725)

21 p3767 N68-34150 Rhos-optics of high speed di polyethylene and polyhutene graphic light scattering method [ONR-TR-109] formation - analysis of -1 films using photo-22 p3895 N68-35381

(AD-673881) 22 p3880 N68-35940 Photoeinstic transducer optical signal monitoring ad recording using photocells and photographic

[AD-673848] 23 p4061 N68-36434

setic evaluation of pas-amera photographs 23 p4168 N68-36510 sive satellite trail from b

23 p4110 N68-37236 Photo-optical measurer nts on high altitude barium

(TO-B-68-41) 24 p4255 N68-38428

stysis of initiation of ex-stals of explosive solids 24 p4356 N68-38462 High speed photographic an phosios in liquids and single cry [APOSR-68-1789] HOTOGRAPHIC RECORDING

Photographic observation determinations [NASA-CR-90249] 02 p0264 N68-11015 dic coating during elec-

03 p0310 N68-11908 ex detectors, and sirglow mini flights 04 p0598 N68-12918 parison of n normon photographs from G [PB-174485]

Night airglow layer pho graphs from Gemini flights 04 p0506 N68-12920

otographic compass inclinometer design for ding orientation of deep sea sampling devices -TM-149] 04 p0509 N68-13423 [MPL-TM-149]

Photographic recording of simulated high energy in-ractions in full scale optical bubble chamber model 05 p0661 N68-14301

ce of photoplastic film recording, and project (\$-67-1139) 06 p0847 N68-15873 mass transparency recording ues for radar display simula-

[AMRL-TR-67-58] 09 p1339 N68-18297 nographic eve 0 on of Apollo mission photographic recordings NASA-CR-934291 09 p1341 N68-18773

Capabilities and lie a of wave front reconstruc-10 p1558 N68-19853

Vibrational effects of structural components in holo-raphic system on picture quality of slow moving object (ISL-T-13/66) 10 p1560 N68-20318

zer for measuring bubble chamber Flying spot digi CERN-68-41 13 p2035 N68-23617 ion for Mars orbital

photographic experi NASA-CR-61834] 16 p2768 N68-27873 ary and evaluation for Photographic pro Lunar Orbitet minic [NASA-CR-1094] 16 p2774 N68-28202

Photographic study ally flowing airstream (NASA-TN-D-4660) e jet issuing into couxi-17 p2870 N68-28370 techniques with ther-

Photographic moplastic media (FTD-MT-66-75) 18 p3075 N68-30176 r photographic record-Electron optical of ing of high speed pro [PB-176448T]

19 p3280 N68-31741 od for signals of side Photographic reci oking radar system 20 p3481 N68-33403

Photographic re blackout on human [SAM-TR-68-27] 22 p3811 N68-35315 n in Germany for artifi-Photographic re cial carch scholling [DLR-FB-48-45]

22 p3877 N68-35538 tektite ablation (NASA-CR-61243) 24 p4355 N68-38015

ECORDING INSTRUMENTS ASURING INSTRUMENTS INSTRUMENTS U OPTICAL MEASUR U RECORDING INSTI

PHOTOGRAPHIC TRACKING

Light curves and exposure data for Baker-Nunn amores obtained during astronomical photography and satellite tracking [NASA-CR-89952] 01 p0133 N68-10142

distic camera da on methods for deter-velocity, and decelers

[NASA-TN-D-4260] 02 p0264 N68-11145 Factors affecting detant for space navigat [NASA-TN-D-4285] se of photographic sex-02 p0236 N68-11902

Scanning and rect celestial bodies [ACIC-TC-1291] 04 p0509 N68-13272

Method for m photographs from b [ANL-7346] 05 p0656 N68-13940

ter design, and instru te tracking - structura ics, and optical equip Conference on bubble char sentation for high energy part esign, elementary particle pi [CERN-67-26, V. 1] 05 p0709 N68-14281

cavy liquid bubble 05 p0642 NAB-14ZRS

Design, and construction of liquid hydrogen bubble amber with large visible volume

05 p0642 N68-14290 Optical particle tracking system for heavy fiquid bub-

05 p0699 N68-14300

Design, and development of wide angle lenses for abble chamber photographic particle tracking 05 g0699 N68-14302 Optical properties of beauted panel, and windows for

ography 05 10699 N68-14303 Logic, diagrams, and adjustments menual of elec-onic measuring projector for bubble chamber film

[UCRL-17611] 05 p0662 N68-14419

Cinetheodolite tracking of Cosmos 54 [ROE-STS-65] 06 p0798 NSS-15418 ed Doppler tracking of geodetic satel-tesseral harmonics of earth gravita-Photographic and i lites to determine to tional fields [NASA-CR-93688]

09 p1337 N68-19349 Astrometric and photogrammetric plate reduction choiques evaluated for error reduction in aboto-

prophic setellite trac NASA-CR-953791 17 p2883 N68-28630 means of star observa-Cinetheodolite ca

(ROE-STS-56) 17 p2883 N68-28670 Synchronous photographi tellite for calculating geoc inervations of Echo 1 ric radius vectors of ar-

19 p3369 N68-32008

22 p3879 N68-35881 [ROE-STS-57] PERMITTAN

HOTOGRAPHS

NT CLOUD PHOTOGRAPHS

NT LUNAR PHOTOGRAPHS

NT MICROPHOTOGRAPHS

NT MOTION PICTURES

NT PHOTOMICROGRAPHS

BOWN HAVE HER THEFT

Photographs of Commodifications for studying sphere, earth magnetic field [RAE-LIB-TRANS-1221] ying upper atmosphere, ice held, and low energy particle 03 p0418 N68-12695

systems for anal Scanning and measureme particle tracks from bubble of [UCRL-17635] 05 p0660 N68-14228 Descriptive and projective get ed to resolve facial characteristic

tics in photographs 05 p0761 N6E-14397 porition word in grad 05 p0761 N68-14396

Dinocular photog criteria for VTOL an (AFFDL-TR-67-27) 97 p0935 NGS-16516

INASA-CR-934721 09 p1305 N68-19150 and uninsies spectra

Photograpia, their used to study mixing nitrogen tetroxide [NASA-TN-D-4467] 14 p2372 N68-24965 thic position of object necessary 14 p2347 NGB-23183

SUBJE fisctor nitric or

Photo

Unser

Proble

Intern 3 benzyl yeis or pl NASA-

Methy ized on p

[NASA-

Application of the control of the co

JUL-52

FORT for harn tanone

Plasm as light a

U PHO

NT EL NT UL

Electro ter with

logarithm

Propor photome andiacal (RAE-Ti

Portab polarime

(RM-410

[NASA-

High a graphs BNL-12

NT AS NT EL NT SPI NT ST

PHOTOGRAPHY		
PAX 2 digital picture p FORTRAN 3 subroutine a [NASA-CR-95375]	rocessing program written in innotations 16 p2666 N68-28308	
The second secon	THE RESERVE OF THE PARTY OF THE	
[TR-68-64]	17 p2860 N68-29373	í
Mariner 4 photographs ([NASA-CR-95712]	17 p2973 N68-29468	1.
Definition of word clust	ters for language analysis and 19 p3248 N68-31453	
digitized picture processing	8 10 -1248 N69-21451	
	phic and fractographic data	
from aluminum alloy test s	pecimens 23 p4073 N68-36020	
PHOTOGRAPHY	THE RESERVE	1
NT AERIAL PHOTOGE	LAPHY	
NT ALL SKY PHOTOG	PHOTOGRAPHY	P
NT AUTORADIOGRAP	HY	10
NT CINEMATOGRAPH NT CLOUD PHOTOGR	APHV	1
NT COLOR PHOTOGR	APHY	16.0
NT ELECTRO-OPTICA		0
NT INFRARED PHOTO	GRAPHY	1.
NT LUNAR PHOTOGRA	APHY	81
NT PHOTORECONNAL	SSANCE	
NT RADAR PHOTOGR NT ROCKET-BORNE P	APHY	te
NT SATELLITE-BORNE	PHOTOGRAPHY	E
NT SCHLIEREN PHOTO	OGRAPHY	(I
NT SHADOWGRAPH P	TOGRAPHY	pi
NT SPECTROHELIOGR	APHS	L
NT SPECTROPHOTOGIA	APHY	(2
NT ULTRAVIOLET PH	DTOMETRY	
	hotographic process - infor-	(?
[FTD-HT-66-632]	02 p0213 N68-11501	61
Simultaneous correction	of velocity and mass bias in	13
photography of meteors [NASA-TR-R-280]	06 p0910 N68-15484	
Physics of photographic p [ORO-2036-3]	processes	be
	11 p1696 N68-21032	
Chemistry of photographi [AFOSR-67-1854]	11 p1701 N68-21656	fo
	raphy of artillery projectiles	[/
in flight [LA-3874-MS]	16 p2658 N68-27025	20
	icroehotoeraphy - camera.	an [R
artwork, lighting systems, pi	icrophotography - camera, hotographic techniques and	- sic
[SRDE-67001]	18 p3071 N68-29655	rei
Image formation with Fr	resnel diffraction in visible	- 33
[BMWF-FB-W-68-27]	21 p3731 N68-34135	im
	the state of the s	
[TR-68-71]	22 p3841 N68-35317	IA
Dispersity of latent image ticles versus that produced b [FTD-HT-23-483-67]	s produced by ionizing par-	100
[FTD-HT-23-483-67]	23 p4062 N68-36646	gra
HOTOINTERPRETATION	THE CLOSED WHEN	[N
	cal imagery as function of	
[BESRL-TRN-189]	01 p0014 N68-10006	of (U
Design criteria for lunar	soules subjetes board on	. 1
photointerpretation of lune Ranger, Surveyor, Orbiter, a [NASA-TM-X-53661]	ir topography as seen by and Lunik probes	tio
[NASA-TM-X-53661]	01 p0133 N68-10150	PRO
Feedback effect on accurr	acy of confidence levels as-	
signed by interpreters [BESRL-TRN-187]	01 p0015 N68-10228	arg
Tabulated data for inter Lunar Orbiter III	preting photographs from	(T)
Lunar Orbiter III		-

[NASA-CR-95712]	17 p2973 N68-29468	localization of Glossina mor (B40)
digitized picture processin (TR-68-68)	ters for language analysis and	Physiological and psycho
[TR-68-68]	19 p3248 N68-31453	professional photointerpreta
from aluminum alloy test i [NASA-CR-66667]	aphic and fractographic data specimens 23 p4073 N68-36020	Elastic surface transforms playing passive sonar and ph [TM-773-1]
PHOTOGRAPHY		[IM-773-1]
NT AERIAL PHOTOGI NT ALL SKY PHOTOG NT ASTRONOMICAL	RAPHY GRAPHY PHOTOGRAPHY	Analytic method for preparation of aerial photog [FTD-MT-65-517]
NT AUTORADIOGRAI	PHY	Photographic mission pla terpretation for Lunar Orbit [NASA-CR-984]
NT CLOUD PHOTOGR NT COLOR PHOTOGR NT ELECTRO-OPTICA	APHY L PHOTOGRAPHY	Computation of space coo of particle trajectory points i [JINR-PI-3487]
NT ELECTRON PHOTO	OGRAPHY OGRAPHY	[JINR-P1-3487] Photointerpretation techn
NT LUNAR PHOTOGRA	PHY	Photointerpretation techn survey in west central Luxen
NT PHOTORECONNAL NT RADAR PHOTOGR	SSANCE	Photointerpretation and
NT ROCKET-BORNE P	HOTOGRAPHY	Photointerpretation and techniques for multispectr
NT SCHLIFTEN PHOT	E PHOTOGRAPHY OGRAPHY	[NASA-CR-93187]
NT SHADOWGRAPH P NT SPACEBORNE PHO NT SPECTROHELIOGE NT SPECTROPHOTOG	MOTOGRAPHY	Error analysis on elevation photogrammetric network
NT SPECTROHELIOGE	LAPHS	[MCIC-IC-IPBS]
NT SPECTROPHOTOGR NT STEREOPHOTOGR NT ULTRAVIOLET PH	APHY	Crater analysis of Mariner [NASA-CR-94358]
	hotographic process - infor-	Lunar mapping from ster ments from Ranger photogra [NASA-CR-92080]
[FTD-HT-66-632]	02 p0213 N68-11501	Selenodetic coordinates fro
Simultaneous correction photography of meteors	of velocity and mass bias in	[NASA-CR-92078]
photography of meteors [NASA-TR-R-280] Physics of photographics	06 p0910 N68-15484	Photographic observations breakup on Meade River, Ali [CRREL-SR-118]
Physics of photographic ([ORO-2036-3] Chemistry of photograph	ic development	Spectral photometric and for studying geologic-atmos
Chemistry of photograph [AFOSR-67-1834]		(AFCRL-67-0603)
	raphy of artillery projectiles	Comparative study of aer
[LA-3874-MS] Equipment design for m	16 p2658 N68-27025 sicrophotography - camera.	Comparative study of aer and terrain data analyses - Ph [REPT38-TR]
artwork, lighting systems, p materials [SRDE-67001]	hotographic techniques and	Human interpretation of si side-looking radar pictures records
[SRDE-67001]	18 p3071 N68-29655	Selfering the server because
light and soft X rays [BMWF-FB-W-68-27]	resnel diffraction in visible 21 p3731 N68-34135	Interpretation of line-scar image degradation
Picture processing by con	nputer 22 p3841 N68-35317	Optical scanner color separ [AD-672078]
Dispersity of latest image ticles versus that produced it	s produced by ionizing par- by light 23 p4062 N68-36646	[AD-672078] Photointerpretation of Ap-
[FTD-HT-23-483-67] PHOTOINTERPRETATION	23 p4062 N68-36646	Photointerpretation of Ap- graphs, and comparison with tropical Atlantic [NASA-TM-X-58015]
	cal imagery as function of	Photointerpretation of lum
(BESRL-TRN-189)	01 p0014 N68-10006	Photointerpretation of lum of Perseid meteoroid [UDC-523.503]
Design criteria for lunar photointerpretation of lun Ranger, Surveyor, Orbiter, a [NASA-TM-X-53661]	ar topography as seen by	Extraatmospheric observat tion in Milky Way galaxy base
[NASA-TM-X-53661]	01 p0133 N68-10150	PHOTOIONIZATION
signed by interpreters	acy of confidence levels as-	Photoionization spectrum of
[BESRL-TRN-187]	01 p0015 N68-10228	Photoionization spectrum of argon light source and vacuumator in discharge flow expert [TR-1001/2260-10/-2]
Lunar Orbiter III [NASA-CR-66484]	preting photographs from 01 p0139 N68-10537	[18-1001/2280-10/-2]
Lunar Orbiter I morffish	t whotographic supporting	Absorption and photoion nitrous oxide measured
INASA-CE-004811	U1 0611.33 PARE-1U304	monochrumatur [TR-0158/9260-01/-3]
Lunar-Orbiter 4 - Method	d for identifying lunar nur-	Atomic boson motors for m
Lunar-Orbiter 4 - Method face photographs, tables of s ing of tracking data, and m computer program	ission sequence of events	Atomic beam system for p trons by photoionization of po [YALE-2726-501]
[NASA-CR-66499]	01 p0140 N68-10706	Extension of Wetzel theo
Lunar Orbitor 1 and 2 is based on reconstructed phot [NASA-CR-66494]	ograph quality	[PIBAL-1000]
[NASA-CR-66494]	02 p0211 N68-11366	Calculation of photoionin
Photographic study of va	racie stars of Riso Cygni	Calculation of photoionin nitrogen and oxygen atoms a using quantum defect method
family and output days for	02 p0268 N68-11786	CONTRACTOR AC
input and output data for evaluation computer program [NASA-CR-66478]	linar orbiter photographic 03 p0414 N68-12216	Ultraviolet filter and monoc trometer employing photoionii [NASA-CR-1018]

04 p0595 N68-13238 Evaluation of potent spollo missions based of NASA-TM-X-58014] ar landing areas for early or orbiter photographs 04 p0379 N68-13750 otographs for control and tans teetse fly 05 p0657 N68-14006 interpretation of aerial pho ological factors related to ation 06 p0776 N68-15033 m for processing and dis-ographic information 06 p0845 N68-15567 hy materials 06 p0846 N68-15568 ng and photograph in-06 p0912 N68-15725 ordinates from photographs in hubble chambers 07 p1046 N68-16588 es applied to aerial soil 08 p1166 N68-17333 d high altitude imaging tral evaluation of wildlife 08 p1176 N68-17406 on distortions of points in 09 p1340 N68-18489 hotography of Mars 12 p1966 N68-22319 photographic measure-12 p1873 N68-22331 rom crater photographs 12 p1966 N68-22332 and interpretations of ice 15 p2461 N68-26339 photographic techniques theric interface environ-15 p2461 N68-26340 rial photography for soils toenix, Arisona test area 18 p3079 N68-30679 satellite color photographs, 20 p3482 N68-33413 in pictures as function of 20 p3483 N68-33414 on system 21 p3665 N68-34421 23 p4167 N68-36467 ence, fragmentation 23 p4169 N68-36642

ntion of ultraviolet radia-ed on photointerpretation 23 p4172 N68-36988

of discharged oxygen with um ultraviolet monochro-

03 p0387 N68-12181 mization coefficients of by vacuum ultraviolet 03 p0389 N68-12282

producing polarized elec-plarized lithium 6 beam 05 p0644 N68-14602 ory to explain electron sure driven shock tubes 07 p0983 N68-16236 cross sections of 07 p1051 N68-16844 bromator for mass spec-[NASA-CR-1018] 08 p1176 N68-17329 Quantitative measurement of atomic photoionization cross sections of atomic hydrogen, oxygen, and [NASA-CR-998] 08 p1216 N68-18118

Precursor ionization due to photoionization of heli-um impurities in argon shock waves [PIBAL-1033] 11 p1763 N68-21382

Numerical values for ionization and appearance potentials in photoionization and dissociation of molecules 12 p1833 N68-22051

Rates of production and loss of F region electrons etermined from VHF telemetry transmissions from contationary satellite peostationary satellite [NASA-CR-94604] 13 p2060 N68-23597

Photoionization, electron scattering, stellar evolu-on, conservation laws, and related topics in nuclear physics - lecture summ [188-67/30] 14 p2301 N68-25633 Electron transfer and ion recombination from hotoionization of thallium halide vapor 15 p2412 N68-26161

Biphotonic photoionization, photoconductivity, shotoelectric emission and electrical conductivity in rganic liquids 15 =2415 N68-26396

15 p2415 N68-26396 Photoionization detector design and performance for use in gas chromatography systems

15 p2416 N68-26425 ransmittance of thin films and photoionization of es in selective detectors set for photons in ultraviolet spectrum [NASA-CR-1096] 16 p2732 N68-28250

[EE-3428-101-68U] 18 p3138 N68-30797 Photochemistry of planetary atmospheric matter, solar EUV and VUV spectral region studies, ion-molecule reactions and photocionization products, and planetary aeronomy investigations

planetary aeronomy [NASA-CR-97185] 23 p4171 N68-36952 Optical energy transfer processes in barium and [AD-673937] 24 p4219 N68-38228

PHOTOLUMINESCENCE NT X RAY FLUORESCENCE

High energy radiation effects on optical properties of solids, and radiation-induced photoluminescence and thermolyminescence.

04 p0558 N68-13682 Low-Z silver-activated phosphate glass, glass clean-ing methods, and personnel glass dosimeters for im-proved radiophotoluminescent dosimetry

04 p0511 N68-13704

Pulsed-light excitation of phosphate glass after ioniz-ing radiation exposure to evaluate absorbed dose radiophotoluminescent dosimetry 04 p0512 N68-13707

Thermal and fast neutron sensitivity of radiophotolu-inescent silver-activated dosimeter glasses 04 p0513 N68-13723

State of art in solid state luminescence dosimetry [BNWL-SA-1543] 09 p1409 N68-19086 Atmospheric tritium effects on photographic, ther-toluminescent, and radiophotoluminescent dosime-

ters [BNWL-SA-1569] 20 p3413 N68-33498 PHOTOLUMINESCENT BANDS

Intracenter photoluminescence of potassium iodide-thallium crystals 08 p1227 N68-18003

PHOTOLYSIS NT RADIOLYSIS

Photolysis of perchlorotoluene perchloroethylbenzene and related su ed substances 04 p0471 N68-13543

Chemical effects of nuclear transformations, flash heating, and flash photolysis [COO-1684-2] 09 p1297 N68-19174 Microsecond flash photolysis apparatus for absorption spectra analysis on free radicals [BARC-296]

11 p1651 N68-21085 Ultraviolet spectroscopy and photolysis of 2,3-dicar-[TR-17] 11 p1654 N68-21376 monia decomposi-

Vacuum ultraviolet stu-tion using flash plustolysis [AD-664932] 11 p1656 N68-21521 Kinetic studies on hemoprot [AFOSR-68-0524] rins by flash photolysis 13 p1999 N68-23292

Calculating primary pro photolysis reactions of irradi [NASA-TM-X-61089] ct quantum yields for ed glassy polymers 13 p2012 N68-23398

A-914

DEX

atio.

8118

heli-

1382

ance n of

2051

3597

5633

from

161

vity.

396

for

425

250

ray

797

952

228

182

104

107

23

QR

63

43

25

21

12

Isotopic enrichment of nitrogen in photolysis of nitric oxide 15 p2407 N68-26074 Photolysis of ozone at low pres 15 p2407 N68-26075 Pressure effects in photolysis of bi-isotopic ethane ad non-isotopic ethane 15 p2407 N68-26076 Photolysis of mixtures of oxygen with nitrous oxide, nitrogen, and carbon dioxide, and relative reaction nates of I D oxygen atoms with admixed gases omixed gases 15 p2409 N68-26084 uitized photolysis of but-1-ene at 1849 Ang-15 p2410 N68-26089 Problems in gas phase photolysis of acetone 15 p2410 N68-26091 Gas phase photolysis of hexi 15 p2410 N68-26092 Photolysis of cyclopropane co 15 p2410 N68-26093 Vapor phase photolysis of methyl formate and methyl carbonate 15 p2410 N68-26094 Reactions of hydrogen atoms with vinyl chloride 15 p2411 N68-26095 Electron spin resonance of nitrogen radicals in notolytic and radiolytic systems 15 p2411 N68-26100 Chemical reactions of solid potassium permaginates exposed to flash photolysis and flash heating 19 p3220 N68-30895 Intermediacy of aromethine nitrene generated from 3 benzyl 4 phenyl 1,2,4 oxadiazolone 5 by either pyrol-INASA-CR-959251 19 p3223 N68-31268 Methyl free radicals f d by photolysis and stabil-[AFOSR-68-1313] 20 p3420 N68-32618 trogen in photolysis of NO 21 p3647 N68-33667 (NASA-CR-85116) Application of flash mass spectrometry to gs [SC-RR-68-162] lysis and time resolved eactions 21 p3654 N68-34670 Studies of radiationless transitions in coronene using nanosecond laser photolysis and spectroscopy [TRW-05824-6009-R000] 22 p3826 N68-35489 a at 2062 A in presence of

propane as hydrogen atom scave [JUL-523-PC] 22 p3830 N68-35756 FORTRAN calculations fo AN calculations for statistical complexions onic oscillators and photolysis of cyclobs-

24 p4210 N68-37427 Plasma pinch apparatus as light source during impu nentation for use

24 p4217 N68-37959

PHOTOMECHANICS

NT ELECTROPHOTOMETERS
NT ULTRAVIOLET SPECTROMETERS
NT ULTRAVIOLET SPECTROPHOTOMETERS

Electronic circuits for rotating stage microphotome-ter with photomultiplier sensor, and with linear and logarithmic mode of operation

05 p0656 N68-13916 Proposed design of Skylark sounding rocket photometer for measuring sky luminance generated by sodincal light and integrated strlight (RAE-TR-67168) 10 p1532 N68-20495

Portable, electronic, large scale nonimaging polarimeter/photometer for terrestrial, airborne, and tatellire remote sensing [RM-4103] 11 p1696 N68-20925 11 p1696 N68-20925

Optical radiation, photoelectricity, signal to noise ratios and photometers related to Poisson process
15 p2426 N68-26231

Direct current biased photoconductive detectors for reception of wideband carbon dioxide laser signals [NASA-TM-X-63336] 23 p4146 N66-36032

Quantum theory of photodetector correlations 23 p4152 N68-36699 High speed image digitizer for track chamber photo-BNL-12679) 24 p4258 N68-38111

PHOTOMETRY
NT ASTRONOMICAL PHOTOMETRY
NT ELECTROPHOTOMETRY
NT SPECTROPHOTOMETRY
NT STELLAR SPECTROPHOTOMETRY

TELEPHOTOMETRY
ULTRAVIOLET PHOTOMETRY
VISUAL PHOTOMETRY

(JAERI-1148) 01 p0027 N68-10965

ing cloud cover, water onitoring atmospheric teorological semors inlescope uite evalus (NASA-CR-90229) 02 p0209 N68-11072

Polarimetric, photometric, and spectrophotometric measurements of Mars, and visible and near infrared studies of Martian surface composition [NASA-CR-90495] 02 p0266 N68-11594

Numerical calculation ric functions, and ma radiation from lunar su [NASA-CR-61481] 06 p0910 N68-15550

night glow on 63 nights 07 p0993 N68-17182 Ship-based observati INASA-CR-931571 photometric concepts ndness research 11 p1634 N68-21024

can free path time of diaxide metry of absorption line. reption lines 13 p2063 N68-24066

ation of stellar radii by photometry, and temperature distribution for constructing 14 p2342 N68-24483

Iris photometry of stars on small scale direct sky photographs [NASA-CR-94707] 14 p2344 N68-24644

Photometric and meteor observations, scatteris properties, particle collection and impact, solar win and origin and evolution of zodiacal light in interplan lary seedium - conference tary medium - cor [NASA-SP-150] 16 p2758 N68-27475

metry of zodiacal light 16 p2758 N68-27479 **Multicolor phot**

Reduction of photometric measurements of zodiacal ht for influence of twilight radiation 16 p2759 N68-27480

Zodiacal light photometry as n and distribution of particles alyzed for phase func-16 p2763 N68-27509

Computer program and plu eriving lunar surface rought otometric technique for tess from lunar orbites NASA-TM-X-59870]

16 p2662 N68-27568 plementation of pictorial data from rith study of time behavior of quan-im target element ential complement te sensors with stu-radiation from targ tified radiatio [SAS-425-6] 17 p2884 N68-28835

hic photometry of artifi-(NASA-TN-D-4667) 17 p2890 N68-29418

Photometric tracking data on Soviet Cosmos series (REPT.-105) 17 p2973 N68-29501

Spectral classification, photometry, and surface dis-tribution of stars in region of Cepheus 4 association 18 p3161 N68-29698

Procedure for applying co-colored lights and luminesce [ELECLAB-125/68] ctions in photometry of risual display devices 18 p3072 N68-29721 Technological problem filters, and photometric n

ments error analysis 19 p3278 N68-31530 and photometric measure-d observations of level and

20 p3481 N68-33393

Lunar luminescence factor in photometry of lunar urface calculated from angles of incidence, phase, and [NASA-TM-X-61275] 22 p3960 N68-35546

[TO-B-68-41] 24 p4255 N68-38428

HOTOMICROGRAPHS

Computer models to aid in interpretating field ion micrographs of crystal structures [NASA-CR-91813] 05 p0729 N68-14700 HOTOMICEOGRAPHY

Liquid propellant combustion processes in test chambers studied by streak photography. [NASA-CR-72371] 12 p1980 N68-21915 tion provenes in test Construction and operation of photoelectric dicrocator for rapid measurements of changes in posi-14 p2259 N68-25355

16 p2661 N68-27371 formation and ion cur-omicrographic pattern m-cobalt alloy 17 p2899 N68-28457

oups of tung (COO-1198-318) 21 p3746 N68-34740

ion and microstructure ORNL-35[5] 23 p4079 N68-3709

PHOTOMULTIPLIER TURES

Photoelectric con as control servodrive to (FTD-MT-66-122) 01 p0066 N68-10826 ht source for evalu

Short rise time thyr photomultiplier tubes [AEDC-TR-67-216] 03 p0329 N68-12261

oise measurement seifiers, and cont lectron multipliers, image s channel electron mul-REPT.41 04 p0486 N68-13071

(WRE-TN-PAD-120) 07 p0996 N68-16466 g of plastic scintilla

08 p1178 N68-17648 Operational gain fatigu dynode electron multiplie [NASA-CR-93246] u in continuous

08 p1153 N68-17831 System for autolysis of photographs of scin-

RT/EL/67/13) 11 p1698 N68-21348 Construction and operation of blanking generator for Bendix multiplier in time of flight mass spectrome-

[JUL-507-PC] (0) 11 p1630 N68-21371

(FTD-MT-24-137-67) 11 p1663 N68-21545

reposse for use in ac [NASA-CR-94244] 12 p1848 N68-22064 Electro-optical ph er detection system for

artificial meteors [NASA-TM-X-60408] 14 p2261 N68-25465 Parameters in analog /dc/a ulse count/ modes of proces nd digital /single electron sing data from photomul-

[NASA-CR-94737] 14 p2231 N68-25648 differences between com-ts in air and oxygen-argor

[NASA-CR-94807] 15 p2577 N68-26638

ions 16 p2713 N68-27221 tiplier attachment to elec-ing luminescence of en-

[NASA-CR-85151] 16 p2663 N68-27913 Proposed low signs internal avalanche mi [AERE-M-2025] detector incorporating

gn of scalers 18 µ3076 N68-30421 Scintillatio [NP-17360] Se-PbTe comb

18 p3049 N60-30675 ion chambers for far ui-

19 p3253 N68-31541 ment using star mapping technique INASA-TN-D-4742)

High voltage supply for outers of balloose, rockets, and BMWF-FB-W-68-24] 21 p3668 N68-34093

ents of photomultipliers mation analysis of as tradeury burniar con-

at of respe

21 p3668 N68-34169 Triggered light sources, after polsing, and materials 22 p3848 N68-33720

CEA-

Vect

DESY

Total

DESY

short w

PHOTOP

tors for

Expe

liquid s

Phot

Supe pions o IC-67-

LAFCE

Posit target

The

ingle [

Angi from h

yais O

LNF-

Posi (SLAC

Theo and pr multip (DES)

Photosoma (DES)

Photoand 3 ([NP-16

Photography (DES)

IDES

Posi

DES

Commercial photomultiplier tube characteristics, and improving resolution of tubes used in gamma spec-[RT/EL/68/1] 22 p3849 N68-35722 Simple electric and magnetic shielding system and base for photomultiplier tube
[UCRL-18031] 22 p3880 N68-35952 Effectiveness of sodium salicylate-coated photomul-tiplier as radiation detector in extreme ultraviolet re-gion 23 p4031 N68-36330 Effect of ionizing particles on photomultiplier (ESRO-SM-72) 23 p3995 N68-37035 PHOTON ABSORPTION
U ELECTROMAGNETIC ABSORPTION Internal conversion coefficie eV transition in uranium 236 05 p0714 N68-14519 Two photon photoelectric effect spectrum of cesium iodide film using Q-switched ruby laser and zenon flashlamp as light sources [REPT.-338] 07 p1004 N68-16459 me of Fabry-Perut spectrometer 07 p0999 N68-16879 (UCID-15224) FORTRAN 4 code for IBM 7094 computer to analyze multi-channel pulse height analyzer gamma photon spectral distributions [NASA-CR-93210] 08 p1214 N68-17731 Atmospheric effects on beam energy distribution of Inser range finder (BRL-MR-1871) **GB pl183 N68-17773** Photoactivation analysis of cerium, neodymium, amarium and gadolinium to determine radioactive decay schemes [AFCRL-67-0595] 09 p1405 N68-18261 Laser beam irradiation of solid particles for plasma 09 p1403 N68-19050 Normalized probability distribution of photon opti-cal paths for radiative transfer equatons to determine diffuse reflection and transmission by cloud and dust Inyers [NASA-CR-70496] 09 p1384 N68-19219 ng laser display systems and holo-Survey on scanning graphic laser displays 12 p1884 N68-22313 High energy photon beams from hard bremss ablung radiation trablung radia [NP-17237] 12 p1939 N68-22868 Multiphoton excitation of organic molecules by laser and ultraviolet radiation [JPRS-45377] 13 p2022 N68-24197 Information capacity of photon field and optimiza-tion of optical systems for information transmission [NASA-TT-F-1744] 16 p2626 N68-28063 Plasma generated by beam of high energy photons in rarefled argon 19 p3339 N68-31140 Two-photon absorption spectrum of cadmium sul-fide using pulsed laser 20 p3566 N68-32790 Photoneutron crossections of 165 as neutron activation target [UCRL-50421] ections of polarized holmium-20 p3545 N68-32927 Calibration and perform ace of Cambridge electron (CEAL-1040) 20 p3483 N68-33432 Slit scanning technique for photon beam analysis of lithium and fluorine distribution in graphite [ORNL-TM-2238] 22 p3932 N68-35673 Evaluation method for laser beam hazard to eyes and [SC-DC-68-2108] 24 p4204 N68-38178 PHOTON DENSITY Survey of photon counting techniques for light mea-

Space-time correlations in in ing and photon counting after at inelastic particle scatter-Fokker-Planck collision operator and photon scat-tering in ionized gases Equations and formulas governing mean number of scatterings of photon in plane layer of finite optical thickness Diffusion of radiation with frequency redistribution in plane layer of optical thickness at center of spectrum line Cross section measurements on elastic scattering in ms of photo ns and fast electrons with unbounded systems 19 p3344 N68-32050 plasmons in bounder [ORNL-TM-2101] Positron annihilation in single crystals of yttrium, gadolinium, terbium, dysprosium, holmium, and erbi-Interaction of ruby laser radiation with gases 21 p3700 N68-33639 PHOTONELTRONS Thermal photo shielded reactor [NSJ-TR-93] utron flux distribution in water Horon trifluoride neutron counters for irradiated Photoneutron method for determining deuterium content in liquid samples [ORNL-TR-1925] 19 p3231 N68-31884 Photoneutron crossections of polarized holmium-165 as neutron activation target [UCRL-50421] 20 p3545 N68-32927 Absolute measurements of high energy X ray beam nergy and photoneutron cross sections for natural opper and lead Neutrino energy production rate of various process n hot plasmas and derivation of analytical expression **PHOTONS** NT LIGHT BEAMS NT PHOTON BEAMS Calculation of T-odd angular correlation in resonance scattering of photons by polarized nuclei [BNL-TR-137] 01 p0108 N68-10485 Probability of simultaneous emission of two light quanta using Dirac dispersion theory [TG-230-T523] 01 p0109 N68-10544 Particular final state decay modes following photo-article reactions in oxygen UCRL-50287] Correlations of electron density in plasma from laser light scattering by photon counti [LGI-67/8] Photon escape probabilities from homogeneous plane parallel media n decay of neutral kao [COO-1195-100] Electron photon cascade calculations and energy eposition as function of depth for high energy elec-(ORNL-TM-2026) Calculation method for estimating photon leakage pectrum arising from cosmic ray bombardment of Absolute photon flux m-superconducting bolometer [NASA-CR-93152] roment using thin film Quantum efficiency of radiant energy photons in miconductors for converting radiant energy solar, uclear, or fosail fuels to electric energy Asymptotic behavior of vertex function in theory of nonrenormalizable CP noninvariant interaction of photons with spinor particles
[JINR-E2-3557] 09 p1388 N68-18602

Mathematical model of pi

NASA-CR-93557

Polarization of coherent brems relativistically polarized electro

strahlung by extreme-

07 p1052 N68-16997

omic excitation 15 p2515 N68-26008

16 p2734 N68-27074

18 p3132 N68-30225

18 p3132 N68-30226

19 p3322 N68-30977

20 p3569 N68-32874

07 p1026 N68-16226

19 p3275 N68-31108

21 p3743 N68-34490

22 p3920 N68-34866

03 p0387 N68-12196

05 p0721 N68-13917

05 ±0734 N68-14724

05 p0719 N68-14803

07 p1042 N68-16436

08 p1233 N68-17291

08 p1176 N68-17396

os pl225 N68-17827

toelectric effect without

09 p1383 N68-19038

Angular correlation of two phot-tion radiation in liquid and solid an Discrete ordinates m port calculations by computer SC-RR-67-4191 NASA-TM-X-63145] Photoproduction cross hydrogen, carbon, and alun [DESY-67/30] Absorption of [DESY-67/37] Principles and appusing gamma photons [CEA-R-3307] (DESY-67/41) photons and electrons [NP-17325] Photon emissi [JPRS-45594] [LAL-1186] [DESY-68/4] (AFCRL-67-0688) Gamma ray spectroscop tered photons from a point's [USNRDL-TR-67-124] [M-7354]

SUBJECT INDEX on positron annihilaammonia 09 p1396 N68-19231 applied to photon trans-09 p1396 N68-19263 10 p1571 N68-20484 sections of mesons on ninium with photons 12 p1937 N68-22788 ergy photons 12 p1940 N68-22896 of activation analysis **РНОТОО** 12 p1940 N68-22903 12 p1942 N68-22961 Spin dependence of neutral rho meson photoproduc-tion at high energies [DESY-67/32] 13 p2115 N68-23369 ar model of Compton effect photon 14 p2308 N68-24891 Photofission reaction of nuclei with high energy U PH U PH 15 p2524 N68-26757 un-positron collisions 15 p2526 N68-26862 High voltage design specifications for detector as-sembly /ultraviolet photon counters/ used in Goddard 15 p2442 N68-26879 sitive pion photoproduction from hydrogen for in-nt photon energies 300 to 750 MeV 16 p2727 N68-27977 olitudes related to vector meson ution of spin 16 p2732 N68-28177 Transmittance of thin films and photoionization of ases in selective detectors set for photons in ul-16 p2732 N68-28250 Storage and retrieval of photon production and in-teraction data in ENDF/B system [LA-DC-9215] 17 p2989 N68-28955 Quantum transport theory in photodection problem, and correlation formalism to describe photon emission 17 p2936 N68-29212 pic measurements of scat-tource near earth surface 17 p2939 N68-29282 Mathematical models governing mean number of hoton scatterings in three dimensional semi-infinite 18 p3129 N68-29781 Bibliography on photo and electronuclear disintegra-tion of nuclei [NRL-BIBL.-31] 18 p3139 N68-30798 18 p3139 N68-30798 Photon loss in gallium arsenide semiconductor elec-tron beam pumped laser by electromagnetic absorption 20 p3492 N68-32263 Brief summary on Soviet investigation of transforma-on of photons and vector mesons 20 p3545 N68-32964 Relativistic and one photon corrections to interac-tions between two atomic systems [TR-N69-1] 20 p3549 N68-33366 Final state decay modes following photo-particle reactions in oxygen 16 21 p3734 N68-33746 Momentum distribution of photons in charged parti-cle system of thermal equilibrium 21 p3735 N68-33758 X ray photon fluctuation me easurements for super-[NASA-TM-X-63331] 21 p3773 N68-34690 **Multiple photon Compton proc** cesses investigated 22 p3920 N68-34945 Tabulated photon cross section MeV for elements 1 through 100 [LA-3753] ctions from 0.001 to 100 22 p3929 N68-35414 Eta meson lifetime determinal fect on spinless nuclei with polar [JINR-P2-3845] tion using Primakoff ef-rized photons 22 p3933 N68-35743

PHOTON-ELECTRON INTERACTION

NASA-TM-X-35604)

AERE-M-1956]

(SLAC-PUB-355)

Calculated spectrum of inverse Compton scattered

Subroutine for computing Compton, photoelectric, pair production, and microscopic cross sections for photon-atom interaction cross sections

Overview on electron and photon interactions for elemining elementary particle properties emphasiz-te meson production

02 p0249 N68-11853

05 p0705 N68-14075

05 p0708 N68-14223

DEX

19231

trans-19263

n with

20484

ns on

22788

22896

salysis

22903

spark 22961

oduc-

23369

hoton

4891

nergy

6757

6862

or an-

6879

or in-

7977

8177

on of

8250

d in-

955

lem,

212

scat-

282

r of

781

gra-

798

lec-

263

964

366

icle

746

rti-

158

90

145 00

14

ef-

Open-air ionization chamber noe equivalent material for meas [CEA-R-3540] ers with walls of soft-tisuring photon doses 23 p4041 N68-37039 Vector meson dominance model and positive-pion roduction by unpolarized and linearly polarized 23 p4132 N68-37168 DESY-68/33] Total cross section for photoproduction event of hadrons on photons in hydrogen bubble chambers [DESY-68/31] 23 p4133 N68-37197 Charge conjugation noninvariant three photon an-nihilation of electron positron states 24 p4313 N68-37717 Spectral function of photon propagator mass spec-trum and time like form factors of particles 24 p4316 N68-37967 PHOTOOXIDATION Photooxidation of butene-1 by nitrogen dioxide at abort wavelengths [NRC-0000] 15 p2409 N68-26088 PHOTOPEAK Photopeak efficiencies of sodium iodide /T1/ detectors for cylindrical gaseous sources [PG-792/W/] 02_p0209_N68-11058 Experimental results on quenching of light flashes in liquid acintillators by decaying electric field [JINR-P13-3894] 24 p4303 N68-38029 PHOTOPIEZOELECTRICITY U PHOTOELECTRICITY
U PIEZOELECTRICITY PHOTOPRODUCTION Photoproduction of leptonic quarks [DESY-67/20] 01 p0101 N68-10039 Neutral meson photoproduction from nyurgan Neutral meson photon energy range forward angles in photon energy range 09 p1397 N68-19312 nt sum rule for photoproduction of IC-67-191 10 p1570 N68-20438 Photoproduced muon pairs for testing quantum elec-[AFCRL-67-0674] 11 p1750 N68-20713 oproduction in liquid hydrogen Positive pion ph 11 p1751 N68-20778 Theoretical interpretation for photoproduction of ngle pseudoscalar mesons on nucleons NP-17221] 11 p1754 N68-21131 [NP-17221] Angular distribution for eta-meson photoproduction from hydrogen [LNF-67/77] 11 p1736 N68-21248 IBM 7040 FORTRAN 4 program for statistical anal-is of photoproduction asymmetry of polarized LNF-67/611 11 pi758 N68-21516 Upper limits on neutral associated photoproduction 12 p1919 N68-21958 Near threshold photoproduction of positive kaons 12 p1926 N68-22362 [SLAC-TRANS-68] 12 p1926 N68-22374 Theoretical aspect of electromagnetic interactions and properties of leptonic decay of vector mesons and multipion and vector meson photoproduction [DESY-67/43] 12 p1930 N68-22581 onic and baryonic 12 p1932 N68-22639 Photoproduction of positive pi-mesons between 1.2 and 3 GeV at decreasing production angle [NP-16737] 12 p1933 N68-22666 tions of mesons on m with photons 12 p1937 N68-22788 hydrogen, carbon, and aluminism [DESY-67/30] oproduction on protons 12 p1941 N68-22928 DESY-67/35 Positive pion photoprod 13 p2112 N68-230/2 oproduction of neutral pions in backward reac-bremsstrablung beam. (DESY-67/36) 13 p2115 N68-23366 ace of neutral rho meson photoproduc-13 p2115 N68-23369 otoproduction of electrons, muons, pions, and 13 p2116 N68-23503 Photoproduction of charged pion pairs from drogen at energies up to 1500 Mev

on of neutral rho measure in hydrogen Photogroduction of hubble chamber (SLAC-TRANS-79) 14 p2310 N68-25006 clear photoproduction rror nuclei 14 p2317 N68-25350 Particle-hole approach to n of nitrogen 15 and oxygen 15 m [JINR-P4-3674] m of high energy Cross sections for photog lectron positron pairs from 15 p2516 N68-26048 in hydrogen bubble Two pion p chamber below [LNF-68/21] 15 p2517 N68-26154 hydrogen as test of quants [HEPL-534] on of muon pairs of trodynamics 15 p2520 N68-26477 Photoproduction of pion pairs and nitrogen in liquid ydrogen 15 p2521 N68-26517 Positive pion photoproduction from hydrogen for in-cident photon energies 300 to 750 MeV [LAL-1186] 16 p2727 N68-27977 on of nuclear magnetic resonance 16 p2730 N68-28098 Wave functions and equations for non-forward photoproduction of p/o/ mesons from nuclei [DESY-68/15] 18 p3137 N68-30696 inuous momentum sum rules for determining fferential cross sections in photogroduction 58/33] 19 p3330 N68-31401 pion differenti LNF-68/33] Theory of double pion photo roduction at low ener-20 p3543 N68-32706 Measurements of single pion photoproduction from deuterium at small momentum transfers [DESY-68/22] 20 p3544 N68-32731 Differential cross section measurements of vector meson photoproduction from hydrogen at energies from 6.5 GeV to 17.8 GeV [SLAC-PUB-439] 20 p3549 N68-33320 Finite energy sum rules for pion photoproduction and omega-Regge pole residue functions [NP-17489] 20 p3551 N68-33491 Neutral pion photoproduction from deuteron at forward angles in energy range from 900 MeV to 1400 MeV 21 p3737 N68-33941 ections from nuclear oxygen nuclei 21 p3740 N68-34320 de scattering cross se eduction of helium and o NP-174971 cross section action of negative pi 21 p3742 N68-34438 (NP-17458) SU/3/ predictions for e hotoproduction reactions actor meson production ctromagnetic decays and scluding pseudoscalar and 22 p3920 N68-34829 alar and rho mesons at 22 p3924 N68-34994 Photomeson production and effects on high energy [NASA-TM-X-63353] real rediation field 22 p3956 N68-35633 duction of pions in 22 p3932 N68-35645 energies up to 5.8 GeV [DESY-64/8] 22 p3936 N68-35841 Tabulated and graph data on photoproduction and leptonic dec [DESY-68/29] 23 p4114 N68-36208 eduction, K-meson decay, , and proton Compton ef-physics experiments 23 p4117 N68-36577 Optical theorem for quantum photoproduction of vector [DESY-68/28] ctron scattering and 23 p4133 N68-37185 Analysis of be tion of omega me [DESY-68/23] er data on photoproduc 23 p4133 N68-37194 Total cross sect hadrons on photons (DESY-68/31) oproduction event of bubble chambers 23 p4133 N68-37197 ear reactions on N 15 ct and in and O 15 nuclei [BNL-TR-218] 24 p4315 N68-37886 **PHOTORECONNAISSANCE**

Vegetation maps prepare tained over several climatic of (NASA-CR-75170)

13 p2116 N68-23532

09 p1284 N68-19214

PHOTOREDUCTION
U PHOTOCHEMICAL REACTIONS
U REDUCTION (CHEMISTRY) PHOTORESISTIVITY
U PHOTOCONDUCTIVITY PHOTORESISTORS
U PHOTOCONDUCTORS NT LIGHT ADAPTATION NT PHOTOTROPISM Molecular complexes of flavins with indoles and shenols, phototaxis in euglena, and reversible light in-luced single electron transfer between chlorophyll and [AFCRL-67-0590] Heat, and light induced darkening of copper brom containing films, and solutions [NRA-86] | 09 p1292 N68-183 09 p1292 N68-18389 RA-561 | Photosessitized reactions of ethylene 09 pt 295 N68-18856 Electrical measurements and photosensity of zinc lifde crystals with defects induced by assealing or floactive impurities 17 p2957 N68-28691 toconductivity and sensitivity, and acceptor in InSb-GaSb and InAs-GaAs alloys 18 p3 [48 N68-29574 Sensitivity of ph fluorescent X rays (UCID-15248) ric diode detector for soft 23 p4062 N68-36602 e to sulfur maturation in emulsions 23 p4011 N68-36829 ation of coated paper and liquid developer for out tone electropholography 4241] 24 p4259 N68-38343 (AD-674241) PHOTOELECTRICITY
RADIATION MEASURING INSTRUMENTS
SENSORS High resolution solar spectra [SR-4] 03 p0414 N68-12174 Calculu gas equation of state [NRL-6580] 07 p1080 N68-16619 intensity photospheric ing solar prominence 07 p1076 N68-16636 ation of photospheric ic fields 12 p1964 N68-21896 Sonar magnetographs of brightness, velocity, and ma INASA-CR-942251 Reynolds equation theory of solar differential notation and meridional circulation [TR-0158/9260-02/-3] 13 p2147 N68-23904 eities on measure-15 p2151 N68-23928 m of vertical oscillar as of lower solu 15 p2554 N68-26514 Model of interplanetary and solar magnetic field structure above photosphere using Green function solutions to Maxwell equations [NASA-CR-95709] 17 p2971 H68-29175 17 p2971 H68-29175 Visibility and disappe ce of photosphere flares on 18 p3159 N68-29606 Comparative study of hydrogen lines in spectra of solar flures and unperturbed photogeneous 18 p3159 N68-29700 and magnesium of Fra [REPT.-25] fer lines in sodium-d hotosphere 18 p3160 N68-30462 ic data for model on tables of spectrosc Sunspot appearance effects on radial velocity and magnetic fields of photosphere and chromowhere [RTS-4242] 20 p3586 N68-32794 21 p3760 N68-33848 PHOTOSTRESSES e stress problem of to 11 p1792 NAB-30703 redium chloride, potansi-de lonic crystals 20 p3562 NAB-32311 m radar imagery ob-

ties of t

Digi

ductin

PHYSIC

Elec

IAD-6

CONTRO

Xn NAS.

Mes

UCII

Stat ties of

Che

Exp

Ex

dices,

(ARL

Phy ide di accid

Eff

Prope NAS

Po cal p

AFC

His physithers [NA:

Perti

Phiconi meni [RE]

C

(CE.

C

bery talus (IS-1

meas:

water [K-L-

PHOTOSYNTHESIS

Appearance of electron paramagnetic response signal in algae and photosynthesis processes [SU-326P[2-8] 02 p0166 N68-11508

Space station green a plant productivity ign concept for increasing plant produ [JPRS-43943] 05 p0608 N68-13920

Carbon dioxide fixation rates in spinach leaves and chloroplasts prepared from spinach leaves 05 p0611 N68-14614

Distribution of carbon 14 products of photosynthesis in isolated chloroplasts between chloroplasts and suspending media

05 p0611 N68-14615 Ultraviolet radiation effects on photoreactions of green algae, chloroplasts, and quinones isolated from Scenedennus [RLO-1783-13] 67 p6944 N68-16502

of cytochromes in Chro-o bacterial photosynthesis 08 p1125 N68-17219 Light-induced reactions of matium studied in relation to bu (BNL-11684)

Enhancement of photosynth kinetic model for photosynthesis thesis in Chlorella and

09 p1279 N68-18514 Migration and trapping of excitation quanta in totosynthetic units

10 p1463 N68-19949 Deuterium and nuclear magnetic resonance techniques for determining liability of delta and 10 position of chlorophyll A

10 p1463 N68-19957

Use of solar energy by plants - measurement of solar distion and yield of photosynthesis, conference 1967 10 p1469 N68-20408

processes of photosynthesis if paramagnetic resonance of as having biological interest 11 p1633 N68-20582

photosynthesis, and water by ferms 13 p1999 N68-23407 Manganese as catalyst in dehydration and reabsorption of [AFOSR-68-0493] Model system for photophi

horylation 13 p2014 N68-23596

Bioregenerative life support systems for long dura-tion space flights - Hydrogenomonas biosynthesis and algae photosynthesis processes [NASA-SP-165] 15 p2392 N68-26207

electron transfer in biologi-Rate limiting enzy cal photosynthesis 15 p2394 N68-26220

Properties of multiple species bioregenerative systems for manned space flight 15 p2394 N68-26222

PHOTOTHERMOTROPIS

U ANISOTROPY U PHOTOTROPISM U TEMPERATURE EFFECTS

PHOTOTRANSISTORS

Development of gallium arsenide laser diode with silon phototransister for optical isolation switch NASA-CR-93668] 09 p1316 N68-19395 (NASA-CR-93668)

PHOTOTROPISM

Plant perception of gravitational and centrifugal forces and light stimuli [ANL-TRANS-545] 11 p1636 N68-21387

PHOTOTURES

PHOTOMULTIPLIER TUBES

Efficiency of various phototubes for detecting Cerenkov radiation [CERN-68-14] 15 p2438 N68-26831

Ground based studies of nodiscal light including use of multiplier phototube and interference filters, separation of zodiscal light from sirglow, and lunar libration clouds

16 p2758 N68-27476

PHOTOVOLTAGES

Mechanism of anomalous photovoltages in metallic films, and automatic control of space vehicles 03 p0428 N68-12001 Mechanism of anomalous photo voltages in metallic

03 p0403 N68-12002

Solar cell properties change from lithium doping [NASA-CR-97344] 24 p4199 N68-37689 PHOTOVOLTAIC CELLS

Design, development and fabrication of photovoltaic olar arrays capable of operating on Martian surface. NASA-CR-90102] 01 p0006 N68-10625 solar arrays capable (NASA-CR-90102)

Corpuacular radiation damage of photovoltaic solar energy converters and silicon transistors [REFT-67] 03 p0389 N68-12279

Development of silicon photovoltaic solar energy onversion cells for unmanned satellites 03 p0303 N68-12303

Thin film gallium arses [NASA-CR-72308] otovoltaic solar cells 04 p0449 N68-13216

Spectral response of cuprous sulfide-cadmium sulfide film photovoltaic cell to green light [NASA-TN-D-4333] 05 p0607 N68-14082

Increased power output from cells made of organic

07 p1065 N68-16386 Photovoltaic efficiency of photodiodes in solar cells 08 p1124 N68-17828

nic cells for con-

energy 08 pl 124 N68-17829 P-i-n structure for controlled onversion of radiant to electric

energy 08 pl 124 N68-17830 Solar proton flare effects on silicon photovoltaic power system for deep space missions [NASA-CR-93922] 11 p1627 N68-20944

Cadmium sulfide and dendritic silicon cells for photovoltaic power systems of spacecraft [NASA-CR-94556] 13 p1995 N68-23468

Multiple operating points, voltage regulator, and volt-ampere characteristics for photovoltaic power system for Nimbus B satellites [NASA-TM-X-63251] 17 p2810 N68-28709

Design techniques for solar generators based on sil-icon photovoltaic cells 17 p2814 N68-28740

Historical account of photovoltaic effect studies with suggested areas for future research government research contracts chronology and reports bibliog-NASA-CR-96161) 19 p3206 N68-32056

Power system design for Jupiter solar electric propul-sion spacecraft [NASA-CR-97196] 23 p3993 N68-36500

PHOTOVOLTAIC CONVERSION

Historical review of scientific work on photovoltaic fects and on energy conversion devices using this ef-[NASA-CR-92679] 07 p0939 N68-16882

Thermionic and photovolta energy conversion 11 p1629 N68-21052 of photovoltaic power

Design and performance system on Nimbus 2 spacecraf [NASA-CR-62045] 14 p2190 N68-24455

PHOTOVOLTAIC EFFECT

Dynamic model for photovo film solar cadmium sulfide cell [ARL-67-0190] Itaic mechanism in thin 04 p0555 N68-13015 Historical review of scientific work on photovoltaic flects and on energy conversion devices using this ef-

[NASA-CR-92679] 07 p0939 N68-16882

Mechanisms of photovolt tions in group 2 to 6 con quasimetallic barrier layers otovoltaic effects in heterojunc-6 compounds with metallic or quasimetallic barrier (NASA-CR-94131) er layen 11 p1633 N68-21821

Mechanism for photovolt tions in group 2 to 6 con quasimetallic barrier layers [NASA-CR-94136] ic effects in heterojunc-pounds with metallic or

11 p1633 N68-21831 Photovoltaic effect in cas m sulfide crystals 13 p2135 N68-23624

ncy, and photovoltaic solar cells 17 p2816 N68-29436 Volt-ampere curves, efficience properties of electron irradiated a [NASA-TM-X-63272]

Historical account of photovoltaic effect studies with suggested areas for future research - government research contracts chronology and reports bibliog-[NASA-CR-96161] 19 p3206 N68-32056 PHTHALOCYANIN

Hall effect mean cyanine crystal [TR-9] prement in metal free phthalo-01 p0124 N68-10536

PHUGOID OSCILLATIONS
U OSCILLATIONS
U PITCH [INCLINATION]

PHYSICAL CHEMISTRY

Physics and chemistry of high dynamic pressure 03 p0428 N66-12567

Chemistry of squeous and so trochemical kinetics and corre-studies, and radiation and nuc-Oak Ridge Inboratory (ORNL-4164) 05 p0619 N68-14141 Chemistry of aqueous systems - thermodynamics, oumotic coefficients, physical chemistry of polyelec-trolyte systems, and water research program 05 p0620 N68-14146

Solid state cher [COO-1109-25] 05 p0627 N68-14727 Physical properties of uranium dioxide single crystals

05 p0681 N68-14771 Effects of physical, and chemical variables on hyper-golicity of cryogenic fluorine-hydrogen propellants [NASA-CR-72253] 06 p0896 N68-15698

Soviet textbook on physical chemistry methods of as analysis, and instrument manufacturing techniques FTD-MT-66-12] 11 p1700 N68-21472 gas analysis, and instrument mai [FTD-MT-66-12]

Physicochemical properties of radioactive sero from nuclear explosions, and fallout from atmosph by clouds and precipitation 11 p1735 N68-21528

Preparation and physicochemical properties of rare earth phosphides [UCRL-TRANS-10222] 12 p1839 N68-22832

Chemical physics dealing with molecular properties and condensed phases, Rayleigh scattering, nuclear quadrupole resonance, dibute magnetic alloys, and dielectric properties of dipoles

14 p2213 N68-24699 Physical chemistry, solid state devices, optical, mag-netic, chemical, and mechanical properties and appli-cations to devices, and chemical and structural en-

AR-71 16 p2743 N68-27326 Electrochemistry, radiochemistry, physical chemistry, preparation, decontamination, and corrosion of nuclear fuels and materials [CEA-N-616] 17 p2846 N68-29437

Biological and physical ch physical chemical aspects of closed as for air and water regeneration and ecological systems fi utilization of excreta

[JPRS-45837] 18 p3014 N68-30144 Physicochemical properties of modified rutile titani-m dioxide after waterproofing with methyl-hydrogen-

[RTS-4636] 20 p3508 N68-32346 Rare earth chemistry of lasers

20 p3568 N68-32847 Aerothermochemistry theories and physical chemis-try processes of combustible flow in relation to jet air-craft technology

(SMRE-TRANS-5599) 22 p3863 N68-35810 Analytical metallurgical studies using physicochemi-[KFK-692]

22 p3831 N68-35967 Bibliography on physical chemical, transport, and thermodynamic properties of xenon [JUL-BiBL-13] 23 p4013 N68-36963

Trends in development of inoganic, organic, and physical chemistry in Poland 24 p4220 N68-38327

PHYSICAL CONSTANTS TESTING REACTOR U NUCLEAR RESEARCH AND TEST REAC-U WATER COOLED REACTORS

PHYSICAL EXAMINATIONS

Personal data and medical characteristics of eromedical certification denial actions AM-68-9] 21 p3645 N68-34575 [AM-68-9] PHYSICAL EXERCISE

Comparison of results of cardiovascular tests and hypoxic tolerance test in young nonathletic males [DLR-FB-67-67] 02 p0167 N68-11781

Human reactions and adaptation to limited muscular activity, and effects of physical exercises under condi-tions of weightlessness 17 p2819 N68-28511

PHYSICAL FACTORS

Physical factors in biological response to high energy charged particle radiation 12 p1822 N68-21955

Physiological and enviro design of full pressure suits ntal problems affecting 14 p2205 N68-24882

PHYSICAL FITNESS

Inflight exercise to assess work capacity and physical tress of Germini 7 astronauts 01 p0006 N68-10183

sic day-night variations in human fitness, and stress resistance 14 p2197 N68-24863 iction of rhythmic da nance, physical fitne

PHYSICAL OPTICS

DEX

yelec-

14146

14727

rystals

14771

yper-

5698

ds of

ques

1528

rare

2832

erties clear

and

1699

326

437

sed and

144

en-

146

147

iis-

10

ni-

67

nd

63

nd

27

C.

15

Trajectory optics, magnet requirements for precision optics, composite spectrometers, envelope optics, and beam shaping systems

06 p0885 N68-15802

Computer program for calculating scattering properties of targets, and physical optics formulation [OSURF-2430-2] 11 p1660 N68-20897

Nuclear optical model for angular distributions for elastic scattering of alpha particles by magnesium 17 p2924 N68-28436

Digital computer program for physical optics calcu-tion of scattering properties of convex perfectly conducting targets (ESD-TR-68-216) 18 p3036 N68-30334

PHYSICAL PROPERTIES

Electrical, physical and mechanical properties of apper and aluminum wire and cable COPPER and alum 01 p0037 N68-10464

Fundamental properties of high density plasmas ap-plication for gaseous electronic switching and power control devices [ECOM-00094-F] 01 p0117 N68-10550

X ray spectra, electron structure, and physical pro-perties of titanium compounds [NASA-TT-F-11368] 02 p0259 N68-11417 02 p0259 N68-11417

Mechanical and physical properties of metastable gamma-phase uranium alloy [UCID-15170] 02 p022! N68-11477

Statistical analysis of physical and chemical proper-ties of JP-4 jet feel procured during 1966 [UDRI-TR-67-139] 03 p0410 N68-11940

Chemical, biological, and physical properties of aspended, colloidal, and dissolved particles in natural 03 p0318 N68-12719 [K-L-6119]

Experimental devices for remote controlled physical leasurements on irradiated plutonium fuels EUR-3619.F] 03 p0334 N68-12768 (EUR-3619.F)

Experimental data on boiling points, refractive indices, densities, ionization constants, and spectra of

04 p0465 N68-13014 [ARL-67-0189] Physical properties of Zircaloy 4 and uranium dioxide determined for analysis of loss of coolant reactor

05 p0752 N68-13967

Effects of various energy environments on zirconium-oxygen-carbon system, solid state ceramics, surface properties, and ceramic materials processing.

NASA-CR-91660]

03 p0682 N68-15001

Point defects studied for effects on physical and opti-cal properties of NiAl, CoAl, NiGa, and CoGa com-

AFOSR-67-27901 07 p1071 N68-17209 High temperature, and radiation field effects on physical properties of ceramic insulators for nuclear thermionic systems [NASA-CR-71913] 09 p1378 N68-19131

Nuclear radiation effects on polymer material properties in accelerator environment.

[AEC-TR-6920] Physical, mechanical, and electrical properties of silicone products evaluated for use in aerospace environments.

11 p1719 N68-21203 [REPT.-238] Chemical and physical properties of sulfur tetrafluoride [CEA-BIB-98] 12 p1839 N68-22771

[CEA-BIB-98] 12 p1839 N68-22771 Chemical, metallurgical, and physical properties of bryllium, cesium, germanium, hafnium, nichium, tan-tahum, titanium, zirconium, and rate earth metals. [IS-1757] 12 p189 N68-22658

[IB-1737]
Physical and mechanical properties of rhenium, technetium, hafnium, noble metals, and related alloys reviewed in terms of availability and costs.
[MASA-TM-X-61073]
13 g2081 N68-23247

Physical properties and structural studies on propylene carbonste, dimethyl formamide, and accionitritie solvent electrolytes [NASA-CR-72407] 13 p2012 N68-23473

Physical and chemical properties and reactions of ntiferromagnetic metals - electric and crystalline pro-erties, metal working, alloys, mineral mining and finise processes.

(FTD-MT-63-20) 13 p2075 N68-23814

Physical properties of plasma produced in discharge of plasma accelerator [AFO5R-68-0320] 13 p2129 N68-24201

Physical and mechanical properties of new high tem-DMIC-MEMO-2301 13 p2086 N68-24268 Chemical boods in aluminides of iron, nicket, man-ganese, chromium, titanium, zirconium, vanadium, and tantalum [JPRS-45385]

13 p2024 N68-24294 Bibliographical survey on preparation, properties, polications, and theory of semiconducting thin films NOLC-745] 14 p2328 N68-24349 NOLC-745

Chemical, physical, and mechanical data for Ce 14 and cerium compounds [ORNL-4185] 14 p2209 N68-24383 14 p2209 N68-24383

Preparation, properties, and application possibilities transplotonic elements of transpistonic (EUR-3893.D) 14 p2209 N68-24415

Propagation of radioelectric waves in earth crust and its physical and electrical properties related to humidi-ty, pressure, and temperature

14 p2224 N68-25195 Physical properties of ruths ray spectrometer n isotopes by gamma

14 p2319 N68-25469 mical and physical properties of human urine

[NASA-CR-66612] 15 p2397 N68-26600

Physical and electrical characteristics of nickel cad-mium, cadmium-allver oxide, and zinc-allver oxide bat-teries and electrochemical cells [ECOM-2949] 16 p2591 N68-27109

Physical properties of labyrinthine fluids, and caloric imulation of semicircular casals 17 p2825 N68-29157

Chemical and physical properties of iron/III/ exists 17 p2847 N68-29560

Nuclear, chemical, and physical properties of aine radioactive isotopes - annotated hibliography [NASA-SP-7031] 18 p3021 N68-29959

Physical properties measurement of model polyethers [ERDE-26/R/67] 18 p3100 N68-30534

Oxidation characteristics of synthetic graphite [NASA-TT-F-11874] 19 p3234 N68-32017

Physical properties of three term mplifying device 20 p3448 N68-32328

Band structure, Fermi surface, and physical proper-ties of rare earth elements 20 p3569 N68-32873

Fluoride and chloride chemical industrial processes for preparation of rare earth metals 20 p3427 N68-32890

Physical properties and applications of dust struc-tures in space technology [NASA-CR-1136] 20 p3602 N68-32976 Research program on physical, thermodynamic, and transport properties of alkali metals [AGN-8284] 21 p3796 N68-34795

Structural adsorption mech nism effects on loss of metal strength [NASA-TT-F-11968] 23 p4075 N68-36320

PHYSICAL SCIENCES Analysis of errors in experimental data in physical [BARC-282] 03 p0383 N68-12236 Research projects on physical sciences, plasse dynamics and physics, and communication science and engineering [QPR-44] O6 p0801 N68-1388

06 p0801 N68-13884 Launch vehicle development, lunar and planetary explorations, physics and astronomy, and bioscience research and technology [NASA-CR-93736] 10 p1592 N68-20008 10 p1592 N68-20008

Israeli research in biological, chemical, mathemati-cal, and physical sciences 14 p2297 N68-24697

PHYSICAL WORK

Lunar gravitational effects on matabolism of man 08 p1126 N68-17370

Acclimatization to altitude by vigorous excercise uring periodic exposures to simulated altitude of 2300 [AMRL-TR-67-1141 11 p1637 N68-21434

Blood loctate levels, respiration, and oxygen con-sumption at several exertion levels [NASA-TT-F-11809] 18 p2010 N68-30400

PHYSIOCHEMISTRY

Classification scheme for eraptive processes based on physico-chemical pr (NASA-TT-F-11589) 14 p2248 N68-24944 Physical and chemical properties of human awast and factors affecting water balance in confined spaces [NASA-CR-95492] 17 p2827 N60-29518 Growth physiology of new phyla of oxyhydrogen gas acterio fur use in closed ecological systems 19 p3212 N68-32140

es of precipitating le-sepensions onto screens 20 p3429 N68-33017 minophores from coll (ERDL-T-1928-68)

Dynamic aspects of temperature regulating system, cardiovascular system, hormonal system, central nervous system, and behavior in mammals [NASA-CR-97316] 24 p4202 N68-37722

PHYSIOGRAPHY U GEOMORPHOLOGY

PHYSIOLOGICAL ACCELERATION

Tables for acceleration terminology equivalents ased on human and vehicle angular and linear motion interrelationships [NASA-TM-X-60710] 02 p0172 N68-11828

Clinical and morphological characteristics of hemodynamic responses in eye vascular system of rab-bits exposed to transverse accelerations rations 17 p2818 N68-28506

Accelerometer for airborne measurements of vestibular forces acting on helicopter pilota [NASA-CR-96296] 20 p3410 N68-32733

Triaxial multiple channel accelerometer module for vestibular stimulation measurements in aircraft [NASA-CR-96298] 20 p3410 N68-32734

PHYSIOLOGICAL EFFECTS NT HEMODYNAMIC RESPONSES

Laser radiation investigated for detrimental effects on eye, skin, and internal organs [NELC-1502] 02 p0166 N66-11246

Social significance, and psychological and physiolog-ical effects of technological advances 03 p0429 N68-12085

Literature survey on physiological effects of work at control board panels [JPRS-43700] 03 p0305 N48-[2300

Physiological and psychological effects relating to dryness in high-altitude jet flying [NASA-TT-F-11295] 04 p0462 N68-13479

Biochemical, physiological and metabolic evaluation of human subjects wearing pressure suits and on diet of precooked frozen dehydrated foods [NASA-CR-91680] 05 p0608 N68-13947

Aerospace medicine and biology bibliography on physiological, psychological, and environmental effects on man during aerospace flights (NASA-SP-7011/45))

OS p0611 N6S-14671

Aerospace medicine and biology bibliography on physiological, psychological, and environmental effects on mon during aerospace flights
[NASA-SP-7011/42/]

05 p0611 N66-14725

Preflight medical predictions of space environment flects on spacecrews, and postflight smalysis of Mercu-yand Gemini space flights 05 p0612 N68-14956

Physiological and psychological effects of 62 days of bed confinement of six young men [NASA-TT-F-11399] 07 p0945 N68-16643

Gas chromatography for blood ethanol analysis, atomic absorption spectrometry for copper and thalfi-um, and alveolar reaction of aickel carbonyl. [ORO-3461-9] 68 pl 125 N68-17228

ctional changes of human nervous system and ular and acoustic analyzers after exposure to ned effects of hypokinesia and radial accelera-08 p1132 N68-17753

Slow rotation chamber studies of physiological ef-ects of centripetal and coriolis accelerations on human estibular analyzers 08 p1132 N68-17755

Physiological effects of weight 18 p1132 N68-17756

refueled prolonged to [AMRL-TR-67-47]

06 p1136 N68-17792 Biological, medical, and engineering studies for manned space flight - acceleration stresses, lumas tolerances, space flight feeding, protein membridies, and life support systems [JPRS-44732] 09 p1280 N68-19906

se perception and its NADC-MR-6718)

10 p1469 N68-29457 ms of manned orbital and Imman reactions to immobilization, cabin at-Aerospace medicine probles sterplanetary space flight (AD-665107)

ingical changes during and unics flight 10 p 470 Nas-20147

SUB

MITS

PHYS

· U

per

of the last

Pol U

III (R

10

d

Behavioral and physiological changes in chimpan-necs after high skiltude decompression 10 p1470 N68-20549 Hypercapnia effects on hun n physiology and per-10 p1471 N68-20551 ffects on human otolith 10 p1471 N68-20554 Metabolic response of his system to space flight conditions man musculoskeletal 10 p1471 N68-20556 Effects of prolongs and plasma volume ution on human blood 10 p1472 N68-20558 techniques to measure cardiac on stress at various body sites 10 p1472 N68-20562 ut and heart rate res onses in man and 10 p1472 N68-20563 Experimental means for biodynamic respon and theoretical models (AMRL-TR-66-251) 10 p1472 N68-20564 man physiological eration and rotatio e to prolonged angular [SAM-TR-67-69] 11 p1634 N68-20957 for preparing and flight for digital comp [NASA-TN-D-4488] 11 p1640 N68-21537 and equipment used for fical data 11 p1641 N68-21538 al conditi inflight recording of Chemical and biok on toxicity of tellurium [NRC-TT-1283] 12 p1823 N68-22476 Inflatable tournic get effects on cardiovascular ig bed rest and water immersion studies on humans [NASA-CR-92085] 12 p1824 N68-22529 Biological and physiol atmospheres on monkeys [SAM-TR-67-86] effects of oxygen-rich 13 p1999 N68-23296 Afferentation effects of without visual control [RAE-LIB-TRANS-1280] ments with and 14 p2203 N68-24406 ormal sleep and effects 14 p2198 N68-24865 of routine duty days in elicopter flying on car-14 p2198 N68-24868 is exposed to helium-ox-14 p2202 N68-25249 Human reactions [JPRS-45562] s to stress under specific situations 15 p2400 N68-26255 Extended flight effects on performance of flight crew 15 p2401 N68-26257 Human tolerances and physionged periods of acceleration logical effects of pro-15 p2397 N68-26500 Introduction to physics and physiological effects of 15 p2397 N68-26502 rance to prolonged Graphic summary of heriods of acceleration 15 p2397 N68-26504 ic blood flow of squirrel monkeys in magneti [NASA-CR-94966] 15 µ2398 N68-26850 Physiological effects domestic fowl [NASA-CR-83014] animal constraint on 16 p2598 N68-27791 Physiological effects of weightlessness on man and 16 p2599 N68-27877 measurement in make in cold water to isolate disease in females than [NASA-TT-F-11790] 16 p2600 N68-28058

perceptual motor p (SAM-TR-68-34) Methods and tec lovascular reaction skin hazard (SC-RR-68-174) [AD-673970] Time displacement cycle during global flig [NASA-TT-F-11723] Physiological resp [ORO-3578-2] Human physi

(REPT.-2) Physiological and pre exposure to low intensit [NASA-CR-90223] Annotated bibliography containing literature on al-tude acclimatization as related to acute hypoxia. decompression, hyperca [SAM-TR-67-95, V. 2] circulatory response INASA-CR-917031 [AM-67-15] Tosting and respo system during space fli [NASA-TT-F-(1395)]

g band for early treat-

17 p2820 N68-28686

by rats in slow rotating 17 p2821 N68-29133

Physiological and psychological measure lot workload ılar end-organ damage in squirrel monkeys sture to intensive linear acceleration 17 p2821 N68-29134 08 pl126 N68-17466 acement in guinea gical impairments in hu-ed by hypoxia, accelera-17 p2821 N68-29135 08 p1131 N68-17745 Drug effects on otolith activity determined by mea-ing ocular counterrolling ch - tolerance levels and cosmonauts to solar time 17 p2824 N68-29149 Toxic diseases and physiologic at reduced pressure and long exp [AGC-3266] ical effects of hyperoxia 08 p1132 N68-17758 18 p3009 N68-30137 red physiological data of human Telemetry moni circudian cycles during po [NASA-CR-74032] Biological effects of su agnetic, gravitational o ten and protonged change of onic environment on biolog-09 p1284 N68-19137 Pathophysiological monkeys to tailward act [NASA-CR-92039] s of guinea pigs and act accelerations 10 p1470 N68-20480 ical systems [NASA-TT-F-11828] 18 p3010 N68-30448 ed in evaluation of loud-Physiological factors inviness of short duration source gy in liv livestock and evalua-e to simulated lightn-18 p3011 N68-30585 e culture cells 11 p1635 N68-21059 ivity effects on human ASA-CR-1100, Electric stimuli of dogs to s 19 p3216 N68-31480 pilots in rarefied at-Physiological mosphere simu [JPIKS-45211] to study functional structure 12 p1825 N68-22556 of temporary connection (NS-59) Ince reactions 19 p3217 N68-31791 lots at rest and during Ruby laser energy effects on functional activity of 4 p2197 N68-24864 19 p3211 N68-32088 rinth to rotation indicated by ons of laby r determining psychocar-conditions of weightless-(RAE-LIB-TRANS-1275) diovascular reactions d ness in orbiting satellite [NASA-CR-96450] 15 p2390 N68-25696 20 p3408 N68-33333 spectra for color coding with intracellular elec-Programmed physiolo formance during Voskho [SAM-TT-R-946-0468] d effects of astronaut per-[J-228-6] 15 p2396 N68-26332 22 p3812 N68-35465 Physiological resp carbon tetrafluoride, [NASA-CR-95106] Threshold effects and safety levels of laser eye and als exposed to ozone. 22 p3813 N68-35669 15 p2398 N68-26728 Calculated impact mechanical properties (BMWF-FB-W-68-32) s influenced by degree liscrete tracking task 16 p2603 N68-27160 and jolt effects on body 22 p3814 N68-35907 Information processi of response difficulty st [NASA-TM-X-59802] human physiological nce, and associated o and visual stimuli Acceleration stress effections and stress an ior and physiology 24 p4205 N68-38486 [NASA-TM-X-59083] 16 p2605 N68-27534 PHYSIOLOGICAL FACTORS NT PHYSICAL FACTORS Physiological responses nomic reactivity, and diovascular system, au-tranial blood flow to Physiological and psychologofessional photointerpretation ical factors related to 17 p2825 N68-29151 06 p0776 N68-15033 examination of controlling lar reflex arc due to rotary and rts on psychological and ersonic and space flights 17 p2819 N68-28516 17 p2825 N68-29153 on biological day-night ogical experiment studying ef-andom electric shock signals 21 p3635 N68-34004 PHYSIOLOGICAL RESPONSES NT HEMODYNAMIC RESPONSES 18 p3007 N68-29665 Circadian rhythms and effects of long distance flights on psychophysiological responses of passengers and [FAA-AM-68-8] 01 p0010 N68-10435 18 p3010 N68-30277 al adaptation studied for 18 p3012 N68-30634 01 m0011 N68-10558 [TR-5] cal effects of prolonged ric fields 02 p0166 N68-11758 daptation of cells and

04 p0452 N68-13004

04 p0455 N68-13199

on in dog, and effects of

05 p0611 N68-14737

ilots during simulated

06 p0773 N68-15339

06 p0780 N68-15906

ing of heart rate, eye ge of student pilots 07 p0942 No8-16189

07 p0946 N68-16644

e turning responses to leration 07 p0946 N68-16753

functions with visual and

[AR-2] 19 p3207 N68-30963 of men in high altitude er [AR-2] d hormone metabolis 19 p3208 N68-31059 tion of effect of mus of various origin (RAE-LIB-TRANS-1298) 19 p3211 N68-31916 yeis of flight stress in tders 19 p3214 N68-32154 al effects 20 p3605 N68-33266 of physiological und (NASA-CR-1155) nfiguration of orbital on-physiological experiments

Feasibility and des board centrifuge for I during Apollo Applica [NASA-CR-66649] 20 p3411 N68-33296 [NASA-CR-66651] 20 p3413 N66-33298

23 p3996 N68-36017

Refrigeration and coment of pit viper snaket (NASA-TM-X-58019)

NDEX

-17466

in hu-

-17745

els and ar time

17758

19137

s and

20480

valua-lightn-

21059

d at-

22556

furing

24864

ed by

25696

6332

6728

7160

7534

, au-

9151

153

g of-

277

for

634

963

039

116

154

44

lar tal

PHYSIOLOGICAL TELEMETRY
U BIOTELEMETRY PHYSIOLOGICAL TESTS

Use of tilt table studies to evaluate cardiovascular deconditioning of space flight [NASA-CR-90251] 02 p0164 N68-11065 Physiological and psychological measurements of pilot workload

08 p1126 N68-17466

Physiological effects of oxygen flow rates and ambient temperatures on pressure-united subjects performing work in altitude chamber [NASA-CR-93256] 08 p1129 N68-17590 08 pl 129 N68-17590

Least squares spectrum time series analysis method for evaluating human physiological and psychomotor nerformance

14 p2197 N68-24862 Prediction of rhythmic day-night variations in human performance, physical fitness, and stress resistance 14 p2197 N68-24863

Electrographic data and physiological processes involved in time estimation by human brain [TG-230-T542] 15 p2397 N68-26531

Biochemical, physiological, and metabolic analysis of subjects in life support system on liquid food diets

during space environs [NASA-CR-94860] 15 p2398 N68-26777 Finger tip skin tempera nd female during immera igher incidence of Rayna sales ture measurement in male on in cold water to isolate ads disease in females than

16 p2600 N68-28058 [NASA-TT-F-11790]

Microscopic anatomy and function of otolith organs and various ways to investigate otolith functions in in-dividual subjects 17 p2824 N68-29147

Oculogravic illusion as indicator of otolith function based on specific testing conditions

17 p2824 N68-29148 Fast tilt test of semicircular canals in cats, and slow tilt and dropping platform tests of etoliths in cats 17 p2824 N68-29150

Sensitive sterop

optometer measurement of Pulfrich tar-nt and retinal latency differences 18 p3012 N68-30741 (USAMRL-773) Effects of diet variation on secretory function of

20 p3406 N68-32764

Methods and techniques for determining psychocar-diovascular reactions during conditions of weightless-ness in orbiting satellite [NASA-CR-9s450] 20 p3408 N68-33333 20 p3408 N68-33333

Rheoncephalography methods for determining aviators potentially subject to cerebrovascular disease [NASA-CR-97261] 23 p4001 N68-37204

PHYSIOLOGY
NT AUDIOLOGY
NT ELECTROPHYSIOLOGY
NT HEMATOPOIETIC SYSTEM
NT NEUROPHYSIOLOGY
NT PSYCHOPHYSIOLOGY
NT RESPIRATORY PHYSIOLOGY

Oscillatory contractile mechanism of insect flight muscle from giant water bug studies [AFOSR-67-2253] 01 p0011 N68-10545

Cardiovascular system parameter and property ef-icts on transmission characteristics of sounds and NASA-CR-929991 07 p0943 N68-16389

Physiology of pocket mi obiology research in biosatel [NASA-CR-93832] ice and suitability for ex-10 p1463 N68-20016

for self-regulation of its and man 19 p3211 N68-32030 higher nervous activity in a [FTD-HT-23-808-67]

Physiological factors of space [SAM-TT-R-733-0268] flight 22 p3811 N68-35463 colling protein synthesis complexity 22 p3813 N68-35763 Analysis of mechanisms of in biological systems of grow (EUR-3607)

Biocybernetics and space physiology applications to clinical medicine 24 p4204 N68-38011

PI-ELECTRONS

Conformational dependence of change effect between miltur-containing groups and adjacent pi elec-tron system determined by spectroanalysis 02 p0179 N68-11899

Molecular orbital method based on atomic self consistent field functions and applicable where pi electron restrictions not fulfilled [NASA-CR-83496] 14 p2320 N68-25580 14 p2320 N68-25580 Partial separation of variables method applied to two equivalent pi electrons [T-R-640] 18 p3133 N68-30360

PIASECKI MILITARY AIRCRAFT U MILITARY AIRCRAFT

ICKLING U CHEMICAL CLEANING

PICKOFFS U SENSORS

PICKUPS U SENSORS

PICTURES U PHOTOGRAPHS

PIERCING

Rotary piercing of uranium billets in high alpha tem-eratures under protective argon atmosphere NLCO-991] 07 p1002 N68-16200 NLCO-991)

PIEZOELECTRIC CRYSTALS

Equations of motions obtained for thickness twist overtones of thickness shear and flexural vibrations of rectangular, AT-cut quartz plates

(3 p0407 N68-12359

Ceramic piezoele [FTD-MT-65-455] oceiver research 06 p0881 N68-15830

Pleasuresistance tentor company
Pleasuresistance tentor 50 to 300 deg K
Oli p1222 N68-17281
Oli p1222 N68-17281

Damping of piezoelectric quartz crystal driven in tor-onal mode of vibration in liquid belium 3 and helium

[NASA-TN-D-4381] 08 p1223 N68-17594 piezoelectric slabs due to gmetic wave 09 p1408 N68-18760 Elastic wave excita [AFCRL-67-0526]

Propagation and amplification or aves on hexagonal piezoelectric crystals aves on hexagonal piezoelectric rystals 11 p1767 N68-20702

Second harmonic light generation in piezoelectric crystals with natural optical activity by circularly polarized laser beam [TR-554] 13 p2140 N68-24249 13 p2140 N68-24249

Microinch actuato [NASA-CR-66626] 15 p2389 N68-25731

Traveling electric field an piezoelectric semiconductor (charge carrier interactions and current instabilities in r CdS from sound wave and 18 p3149 N68-29691

Design, construction, and test of prototype piezoelectric actuated fatigue machine [NASA-CR-66670] 19 p3286 N68-31984

PIEZOELECTRIC GAGES

id gage evaluated for Piezoelectric micr ic impacts 02 p0211 N68-11277 response to elastic ar (NASA-CR-90129) Pressure-time profile n hypervelocity impact by m urements on projectile unin wire pressure trans-

09 p1440 N68-18495 [NASA-CR-93434] New method for ter pleaoreaistive transducers [PA-TR-3637] ure compensation of

11 p1701 N68-21620 Accuracy tests with piez sed in vibration measureme lectric accelerometers s on thin walled struc-(TDCK-50121) 15 p2467 N68-26171

Fitzgeralds piezo and theory on audio beams in crystals 16 p2717 N68-28259 frequency resonances and so [NASA-TN-D-4625] PIEZOELECTRIC TRANSDUCERS

Development of ultrasonic Duppler blood flow velocity measurement catheters and multipurpose catheters which include ultrasonic transactions (AD-45915) 01 p0064 M6-10458

02 p0210 N68-11163 Growth and analysis of thin film pleaselectric trans-ucers in study of electron phonon interactions in

semiconductors [NASA-CR-90540] 02 p0259 N68-11809 for determining quartz, transducer sensitivity from

Quasi-static calibrati giezoelectric type, press 20 to 477 deg K [NASA-TM-X-1479] 02 p0214 N68-11867 ure acoustic pres

(ONERA-TP-491) 03 p0348 N68-12696 calibration of piemelec-

06 p0844 N68-15272

Pietoelectric pressure pickups for measuring pres-ures of guess and liquids belief incident and reflected book waves, and detenation studies

07 p0975 N68-16966 ical translaters using

piezoelectric eff [ECOM-2905] lucer with electric and ures for measuring car-

diac and gross motor a [NASA-TN-D-4590] 14 p2206 N68-25060 14 p2242 N66-25566

[NASA-CR-1089] 15 p2541 N68-26627 Calibration curves for high pressure plezoelectric

18 p3047 N68-30390 (T-17/67) Frequency response of piezo electric pressure trans-

(NASA-TT-F-11913), 19 p3278 N68-31548 erated lead zircounte High field lomes of a tanate piezoelectric ceran

PIEZOELECTRICITY

Piezoelectric effect in shocked sucross [UCRL-70485] 02 p0259 N68-11492

Piezoresistance affect in p-type lead telluride [NOLTR-66-55] 03 p0403 N68-11992 Piezoelectric pressur end losses from theta pi [CLM-R-70] s for measuring plan 04 p0552 N68-12863

Polarization gradient in [TR-7] 06 p0895 N68-16058

II p1766 N66-20586 Insulated gate field effect transistors using cadmins scienide or telluride as piszoeléctric semiconducto material (NASA-CR-94541) 13 p.2067 N6S-2344

13 p2067 N68-23447 n for two dis

ry value pr

Coupling between traveling acoustic waves and drift-ing electrons in piezoelectric semiconductors amplified acoustic waves

22 p3846 N68-34972

PIEZORESISTIVE TRANSDUCE U PIEZOELECTRIC GAGES

PIGGYBACK SYSTEMS

Flight mechanics, and thermodynamic sepects of numble issuech systems for piggyback two stage 06 p0909 N68-15266

IGMENTS

NT CHLOROPHYLLS

NT CYTOCHROMES

Degradation model of solar radiation damage to opti-cal properties of size oxide pigments used for space-crit thermal control conting (NASA-CR-61429) (5 p0753 N68-14171 Role of adhesive in stru

10 p1542 N68-20174 ution of polymers on

RTS-44581 20 p3417 N68-32473 PILOT ERBOR

Jet transport control problems induced by turbu-lence and pilot mininterpretation of flight instrument data 08 p1109 Nos-1744s meral svinden alcord

20 p3328 N46-33187 Pflot warning indicators and lowering risk of mid-air [NASA-TM-X-61248] 22 p3805 N66-33308

PILOT PERFORMANCE

Flush billnesses died in F 1068 nin [SAM-TR-47-41] a pilot sicerait control stu-01 p0017 Nee-10010

ol p0017 N68-10734

08 p1127 N68-17578

08 pl128 N68-17579

08 p1128 N68-17580

08 pl128 N68-17583

10 p1476 N68-20125

y perception as qualifi-flight 10 p1471 N68-20553

14 p2205 N68-24885

estibular disorientation test stered by variety of person-

mentary testing

alography for flight crew and pilot

Probabilistic model for planning factor and evalua-on procedure in allocating aircrews to squadrons

Testing and in-flight monitoring of heart rate, eye movements, and vocal interchange of student pilots [AM-67-15] 07 p0942 N68-16189

Psychological, psychophysiological, and psychiatric factors indicated by routine electroencephalograms used in flight crew selection

Electroencephalograms for use in selecting flying

Attention tests used to select Belgian pilots related to performance during training

Rheoencephalography methods for determining aviators potentially subject to cerebrovascular disease [NASA-CR-9726]] 23 p4001 N68-37204

(RM-5385-PR)

Electroencephi

Cross validation of brief vestil during pilot training administer

Flight experience and sensory ation criteria in manned space fl

[NASA-CR-93836]

SUB

LAC

leve

0

P

(N/

S [NA

NT NT

(10)

ary

(11

PINE

CHI.

SCS [C

ing

ciá L

U

PION

FION

Psychophysiological measures to assess pilot per-formance during operational flight environment [AGARD-CP-14] 03 p0309 N68-12798 Pilot visual acuity at low level flight
[AGARDOGRAPH-107] 04 p0462 N68-13496 Contact analog navigation of improving pilot performa splay systems, and ways 05 p0688 N68-14832 s electroencephalogram luring orbital flight 05 p0612 N68-15003 Period analyses of continuous recordings on Gemini 7 piluts du [NASA-CR-91661] Comparative analysis of aircraft accidents based on roficiency and experience levels of pilots AM-67-23] 06 p0777 N68-15314 Physiological reactions of p egress from Voskhod spacecraft [JPRS-44209] ilots during simulated 06 p0773 N68-15339 Pilot simulator display system evaluation - effective solution and pilot performance in landing approach 06 p0779 N68-15904 Inflight and ground simulation measurements of pilot ansier characteristics in compensatory roll tracking 06 p0780 N68-15908 romover models and optimal control theory for ob-ng pilot performance data 06 p0784 N68-15930 Mathematical model for interpreting pilot opinion and selection of optimum control sensitivity for VTOL aircraft hovering task 06 p0785 N68-15933 Pilot transition response model application to flight control failure analysis 06 p0785 N68-15935 B-52 simulator tests to determine pilot response to flush blindness [SAM-TR-67-67] 07 p0944 N68-16538 Pilot perform a depth perception between ects familiar obje [AM-67-20] 07 p0931 N68-17066 Effects of task variables on pilot models for manually ontrolled vehicles 08 pl 135 N68-17467 Pilot induced instability 08 pl135 N68-17468 Simulator tests of factors affecting pilot technique in approach and landing of supersonic transports 08 p1135 N68-17472 Mixed pilot and auto ing landing approach natic longitudinal control dur-08 p1113 N68-17475 lation and electro troencephalograms as flicker in helicopter 08 pl 128 N68-17581 Changes in levels of consciousness in pilots and other men determined by electroencephalograms taken in decompression chambers 08 p1129 N68-17585 Electroencephalograms of student pilots related to aircraft accidents and attrition from flight training 08 pl 129 N68-17586 Simulator test of team method for reporting target locations in low altitude air recor [TR-751-12] 08 pl135 N68-17587 Head-up display device for improved pilot per-ternance in all-weather operations. [RAE-TM-BLEU-123] 08 pl137 N68-18132 Airborne collision avoidance systems with pilot warning instruments 08 p1116 N68-18229 Bibliography of studies dealing with pilot warning devices, visual collision avoidance, infrared techniques for detection, and pilot judgments in accident preven-

08 pl117 N68-18240

pues for testing auditory tion of pilots 10 pl475 N68-19953

and equipment used for edical data 11 p1641 N68-21538

ecording of internal and for pilot visual require-

11 p1641 N68-21541

12 p1825 N68-22556

13 p2003 N68-23255

Pilot plant for h nuclear rocket fue

Pilot accuracy in detecting zero point of field view expansion and aim point by visual cues [NASA-TM-X.61077] 13 p2003 N68-23317 Probabilistic model (NASA-TM-X.61077) 13 p2003 N68-23317 lots at rest and during 4 p2197 N68-24864 Visual display in fixed cockpit piloted simulator ways of measuring pilot vehicle performance in landing and approach control [NASA-TM-X-59806] 14 p2207 N68-25339 Pilot dynamic response to sudden flight control system failures [NASA-CR-1087] 15 p2402 N68-26690 analysis in use of pilots to hicles of Saturn 5 class 16 p2604 N68-27434 Fessibility and reliability a guide and control launch vehi [NASA-TM-X-59113] V/STOL research on co llability, display devices, al guidance 16 p2588 N68-27445 pilot performance, and NASA-TM-X-604561 Commercial pilot reacti-ulure in instrument landing m to warning system for [SRDS-RD-68-9] 16 p2588 N68-27567 Pilot performance us tracking displays with dynamics and disturbanng compensatory and pursuit ate and acceleration control [NASA-CR-1082] 16 p2627 N68-28272 Flight simulation study to investigate pilot and stem responses to control and system failures during 17 p2829 N68-28559 (SRDS-RD-68-11) Applicability of nonli problem of modeling has [NASA-TM-X-60996] ar time domain analysis to rator /pilot/ 17 p2830 N68-28920 nic model for study of pilot performance in takeoff and landing and other types of aircraft TT-F-11844] 18 p3014 N68-30189 [NASA-TT-F-11844] Vision research - flying and space travel /conference/ [AD-669266] Analytical and simulation study of guidance techniques /visual displays/ for pilot control of tasks planned for Apollo mission Operational significance of flash blindness - Navy rogram for minimizing hazards of flash blindness benomens on performance canabilities Laboratory studies of flash blindness parameters and quantitative methods for predicting effects on visual scuity of pilots of high performance aircraft ical orientation /pilot awareness of naviga-on/ during low altitude flight under visual Dynamic visual target detection and recognition from low altitude aircraft Navigation problems a earth flying Operational aspects of visual problems associated with use of low flying, high speed aircraft in close-support and interdiction type missions into enemy territory Mathematical models of human pilot performance in roll tracking task derived from flight simulator and T 33 aircraft situations [NASA-CR-97017] 22 p3817 N68-35548 Pilot response during TSR-2 aircraft flights through [ARC-CP-997] Pilot performance under cond ygen breathing at high pressures [JPRS-46656] PILOT PLANTS

Training methods and programmed instructions for army helicopter pilots [HUMRRO-PP-18-68] 24 p4209 N68-38474 PILOT TRAINING Flight evaluation procedures and quality control in aviation school training [TR-68-3] 13 p2007 N68-24211 21 p3640 N68-34525 se criteria for V/STOL aircraft flight Dynamic respo 21 p3642 N68-34530 [NAVTRADEVCEN-1753-2] 21 p3643 N68-34535 nce aircraft 21 p3643 N68-34537 21 p3644 N68-34541 21 p3644 N68-34542 iated with nap-of-the-21 p3644 N68-34543 PILOTED CENTRIFUGE **HUMAN CENTRIFUGES** PILOTLESS AIRCRAFT
U JINDIVIK TARGET AIRCRAFT 21 p3644 N68-34544 PILOTS Human operator per visual sine wave tracking [ARC-29887] 22 p3817 N68-35548 PILOTS [PERSONNEL] NT AIRCRAFT PILOTS NT TEST PILOTS 23 p4004 N68-37139 Pilot test evaluati itions of hypoxia or exresponse to operational cor [NASA-CR-96018] 23 p4001 N68-37345 Criterion for placeme Pilot plant for solvent extraction of strontium 90 from fission products
[EUR-3613.F] 03 n0026 N68,10864 distance for [TN-2-68] Pilot/vehicle m Pilot plant for chemical sepa [EUR-3611.F] ation of cesium 137 03 p0314 N68-12495 (STI-TR-164-2) Pilot plant for ion exch 137 from scid waste [EUR-3625.F] ge separation of cesium-05 p0624 N68-14476 Materials handling techniqu medium level radioactive wast and gas fired pilot plant operatio (BARC-304) ques, fixation of low and sate in stable solid media. Manually controlled transfer functions for pi [NASA-TM-X-59607] 11 p1648 N68-20967 cessing of unirradiated 20 p3431 N68-33254

perception and speech recog [NAMI-1027]

Photometric and electrical re-external lighting environment ments in F4B aircraft [NADC-AC-6903]

Physiological reactions of pilots in rarefled at-cuphere simulating space walk conditions

iot describing functions measurement and error ction in flight test data with example from Gemini

Signal conditioning inflight recording of p [NASA-TN-D-4487]

[JPRS-45211]

[NASA-TM-X-61071]

valua-10734 c, eye ts 6189 pilot

DEX

intric grams 7579 esting 7580 lying

7578

7583 a test mon-0125 alifi-0553

416 thts for 985 for

211

i in 130 for 174

155

ed 89 nk

ic 12 in ri8 ih

15

Aircraft instrument and cockpit illumination by red or white light for optimum utilization of pilot visual 17 p2831 N68-29237 [AGARD-CP-26] Aircraft cockpit lighting requirements for safe low level night flying 17 p2831 N68-29238 Optimum color and light inte-ment and cockpit illumination and accommodation intensity for aircraft instru-tion for pilot visual acuity 17 p2832 N68-29239 Pilot preference for aircraft carrier flight deck and angar lighting systems 17 p2832 N68-29241 Visual acuity and dark adapilots tested for verification traviolet, red and white light of adaptation to ul-17 p2832 N68-29243 Differences in dark adaptation by pilots viewing air-raft instruments illuminated by red light, or low tem-erature white light 17 p2833 N68-29246 Cockpit lighting systems for opti pilot visual capabilities un utilization of 17 p2833 N68-29251 Pilot preference for flight instrument lighting systems 17 p2834 N68-29254 Accelerometer for airbon vestibular forces acting on helio (NASA-CR-96296) opter pilots 20 p3410 N68-32733 Studies review of pilot problems for one man flying units in simulated hunar gravity [NASA-TM-X-61164] 20 p3413 N68-33437 PINCH EFFECT NT PLASMA PINCH NT THETA PINCH Very high pressure fast valve for feeding nozzles used forming hollow cylindrical gas shells for Z-pinch stu-[LGI-66/4] 07 p1003 N68-16485 Linear pinched argon pla g relativistic electron bea a for guiding self focus-09 p1400 N68-18390 Large conventional shock tube as pre-ionizer for in-verse in the state of the state of the state of the state of the heat transfer gages and electrostatic probes to partially ionized flows 10 p1513 N68-20223 Structure of current sheet in pinch discharge in 10 p1575 N68-20297 Neutron and X ray pro (TR-0158/3220-50/-1) ection in focused Z-pinch 11 p1760 N68-20813 Microwave probe for m field during pinch formation [LRP-35/67] ring rotating magnetic 12 p1950 N68-22739 k production in gases by Magnetohydrodynamic sh current sheets in pinch tubes 23 p4138 N68-36251 Noncylindrical Z pinch in currents above one mil-[NASA-TT-F-11964] 24 p4327 N68-38355 MINHOLES tion for expansion of pinhole in rigid disk of nonuniform thickness [TR-17] Analytical solu 13 p2159 N68-23411 PION BEAMS Techniques and apparatus for observing pion-pion iCERN-67-301 04 n0548 N68-13378 Leptonic decay of pion under spectral function sun-rules, including axial vector meson 05 p0704 N68-13979 Secondary maximum in pion-proton elastic scatter-ing measured in spark chamber 14 p2314 N68-25152 Positive pion photoproduction from hydrogen for incident photon energies 300 to 750 MeV [LAL-1186] 16 p2727 N68-27977 Four prong positive pi meson p interactions between and 4 GeV/c determined in bubble chamber experi-

[UCRL-18254] 21 p3746 N68-34759

aion objectives and specifications [NASA NEWS RELEASE-47-293] 02 p0270 N68-11048

PIONEER SPACE PROBES

Mariner 5 space prob Pioneer 8 space probe-reduction from Lunar Or [NASA-CR-92563] dio occultation analysis, and bistatic radar data and Mariner 5 06 p0914 N68-16085 Engineering feasibilit aboard Pioneer space pr [NASA-CR-73178] ogical experie 10 p1469 N68-20346 ioneer spacecraft solar flyby missions [NASA-TM-X-59774] 14 p2195 N68-25622 PIONEER 6 SPACE PROBE Microstructures in intern netary medium from Pioneer 6 space probe me [NASA-TM-X-55995] of p0133 N68-10005 Pioneer 6 space pri control system design at [NASA-CR-86071] n stabilized orienta 17 p2977 N68-29274 Nonleptonic weak interactions and infinite com-posent wave equations [COO-1428-28] 01 g0102 N68-10134 01 p0102 N68-10138 Approximation of spectral functions by one and two on contributions TR-672) 01 p0083 N68-10155 Charged pion production in neutron-nuclei collisions 01 p0107 N68-10463 JINR-P1-33991 Kaon and pion fluxes expected in intermediate ener-meson beam experiments in proton area at zero COO-1195-961 01 p0110 N68-10600 for sigma hyperon-two 660/ decay 01 p0114 N68-10837 UCRL-17682] Numerical bo solutions to pion-nucleon [UCRL-17671] 02 p0244 N68-11391 model of electromagnetic on decay to pion, positron, Vector meson do interaction of hadro and electron [NUP-A-67-15] 02 p0244 N68-11410 Polarization characteristics in pion-proton elastic 02 p0244 N68-11438 Energy estimation in collisions of very high energy pions with nuclei of photographic emulsion [INR-828/VI/PH] 02 p0245 N68-11443 ns of very high energy 02 p0250 N68-11888 Analysis of six-prong jets at 8 GeV/c positive pion-proton interactions [INR-807/VI/PH] 03 p0390 N68-12414 Measurement of the charge neutral kaon to pion, electron, [NEVIS-162] asymmetry in decay of and neutrino 04 p0551 N68-13905 Magnitude and sign of K meson mass difference and study of pion decay mode
[UCSD-10P10-103] 05 p0704 N68-14027 Phenomenology of neutral kaon yields 2 pion decay, and neutral K-meson regeneration [JINR-P2-3513] 05 p0711 N68-14402 Pion resonance in kaon i deuterium bubble chamber (SLAC-PUB-347) ractions with neutrons in 05 p0714 N68-14550 Absorption and diffraction cross sections for positive and negative pions and kaons on complex nuclei [COO-1195-99] 05 p0716 N68-14682 ntegration of des-Covariant theory for pionic dis [TH/225] 06 p0883 N68-15114 Kaon systems, viola decays, strangeness or conservation/parity, pion , lifetimes, and mass dif-06 p0885 N68-15803 Cross section experiments, pion and kaon produc-ion, and nucleon and hyperon excitation related to arron resonances 06 p0885 N68-15853 ed to calculate decay rates of tensor r 07 p1040 N68-16224 High energy physics research including current al-petra, pion-pion interaction in kaon decay, quantum dectrodynamics, symmetry, quark models, and INYO-3829-181 07 p1042 N68-16422 Absorption of S-orbit neg [TID-24]41] pions by helium 4 07 p1045 N68-16373

s, and electro

07 p1049 N68-16708

ed silicon and garmani-e widths of 2n-is transi-08 p1213 N68-17618 Fermion trajectory mechanisms in backwar [TH/236] 9 p1389 N68-18621 isotopic spin, and charged po [ITEF-516] invariance 09 p1389 N68-18624 Annotated bibliograp 09 pl391 N68-18867 Phase space of decay into four pi [IS-T-210] glet res 09 p1395 N68-19178 s of 16.2 BeV negative 09 p1395 N68-19315 Neutral pion prod negative pions with as [INR-844/VI/PH] erations of 9 GeV 09 p1398 N68-19375 Strange particle product nucleon interactions in bul [COO-1195-94] n pion-proton and pion 10 p1561 N68-19529 Pion S wave model for calculating nucleon-nucle [IPNO/TH-88] 10 p1562 N68-19557 ions of antipr Dependence of angular corrector annihilations on pion one 10 p1564 N68-19716 Mathematical model to di high energy interactions, an protons 10 p1564 N68-19719 Three-body final states in kaon-pion interactions 10 p1565 N68-19721 onvergent sum rule for photoproduction of DC-67-191 10 p1570 N68-20438 High energy counic raicrowave thermal ra ic ray spectrum interaction with radiation for production of NASA-TM-X-631451 10 p1571 N68-20484 ion probes for X ray m ructure in solids 10 p1583 N68-20511 Strange particle resonant states from pion proton in-11 p1749 N68-20661 Production of kaon-antikaon pairs in pion-proton in-11 p1750 N68-20776 Positive pion photoproduct 11 p1751 N68-20778 clei and Coulomb scat-Form factors of three being and pion form factor 11 p1752 N68-20849 d reactions emphase and charge each isobaric analog resur coupling in deuteron of of B and N isotopes - pi [ORO-2972-47] 11 p1754 N68-21145 to express angular distri 11 p1756 N68-21314 ction of pions (DESY-67/31) 11 p1757 N68-21406 IBM 7040 FORTRAN 4 program for statistical anal-LNF-67/611 11 p1758 N68-21516 Eta-meson decay to three pions and PCAC violation 11 p1758 N68-21765 on method applied to Unitary impulse apprion-nucleon collisions Electroproduction of pi-m from hydrogen ns and pi-meson pai Radiative pion absorption and structure of light 12 p1921 N68-22102 12 p1921 N68-22123 vector and tensor current 12 p1923 N68-22191 (IC-67-17) A-923

SUB

LA

with

B

C

S

-

and [JII

thr

Big Co

P

SCI SE

de (U

yie tio

Po

THE CO

tera

P

Nucleon Born computation for gradient coupling and exchange in low energy pion-nucleon scattering [EFINS-67-98] 12 p1926 N68-22365 [SLAC-TRANS-68] 12 p1926 N68-22374 mesons on complex nuclei [PPAD-633F] scattering of positive pi-12 p1928 N68-22438 Feynman graph analysis for pion angular distribu-(LYCEN-6757) lations into mesons 12 p1932 N68-22617 Mathematical model for pion angular distribution in LYCEN-6751] ross sections in terms of Coulomb scatter-ide, Coulomb phase shifts. 12 p1932 N68-22629 Expressions for describing pion-n scattering cross or 12 p1933 N68-22658 ORNL-41971 Photoproduction of positive pi-mesons between 1.2 d 3 GeV at decreasing production angle tion angle 12 p1933 N68-22666 Resonance production roton interactions at 3.9 the negative pion plus om at 3.9 GeV/c UH-511-17] 12 p1935 N68-22694 Measurement of pion electroproduction cross sec-[LAL-1185] 12 p1936 N68-22738 Forward elastic differential cross sections of pions nd protons measured at 410 and 490 MeV CEA-R-3146] 12 p1936 N68-22764 [CEA-R-3146] Positive and negative pion absorption by carbon 12 and oxygen 16 nuclei [JINR-P4-3666] 12 p1939 N68-22870 Multiplicity, angular distribution, and momentum characteristics of positive pions produced in pion-12 p1940 N68-22900 Evaluation of peripheral m proton-proton interaction with peripheral model for calculating on teraction with neutron and pion for-Negative pion capture by hydrogen in hydrogenous (JINR-P13-3653) 12 p1941 N68-22927 Single pion phot (DESY-67/35) in protons 12 p1941 N68-22928 Positive pion photoproduction 13 p2112 N68-23072 Phase shift analysis and dispersion relations for pionnucleon scattering [AFOSR-68-0519] 13 p2113 N68-23144 Phase-space model for m eson and baryon resonance in pion-proton interaction UH-511-18] 13 p2114 N68-23365 Photoproduction of neutral pions in backward reac-tion of bremsstrahlung beam [DESY-67/36] 13 p2115 N68-23366 Differential cross section and final state deuteron ef-fect measurements for elastic pion deuteron scattering amplitude construction amplitude constru [JINR-P2-3619] 13 p2115 N68-23370 Electromagnetic form factor of neutral pion [NEVIS-165] 13 p2115 N68-23420 exoproduction of electrons, muons, pions, and 13 p2116 N68-23503 Photoproduction of charged pion pairs from hydrogen at energies up to 1500 Mev 13 p2116 N68-23532 High energy elastic scattering, and pion-proton and High energy crases. Section proton-proton scattering analyses 13 p2119 N68-23749 Algebraic derivation of sum rules with pion and [155-67/32] 13 p2119 N68-23775 Six-prong interactions of 16 GeV/c pions with 181-837/VI/PHI 13 p2120 N68-23783 ons between pions 13 p2120 N68-23844 Angular correla [IBJ-876/VI/PH] Angular correlation between neutral pions in nega-8J-882/VI/PH1
Electromagnetic corrections for dispersion repion-nucleon forward scattering
[14 p2302 N68-24424 [IBJ-882/VI/PH] of pion-nucleon f [JINR-P2-3670] ons using propune bubble JINR-P1-36771 14 9 N68-24475

Calculation of gamma spectrum from pion-pion in-ractions and neutral pion decay NP-17315] 14 p2339 N68-24745 (NP-17315) Pion proton elastic scattering experiments and phase shift analyses [UCRL-18001] 14 p2306 N68-24794 Electromagnetic form factors for pi-meson in bound 14 p2306 N68-24804 Single pion production in positive pion-proton in-14 p2311 N68-25057 Single pion production in p etween one and three giga elec on-proton interactions 14 p2312 N68-25078 Pion-proton high energy reaction analysis by means of alpha heavy plate spark chamber [CEA-R-3209] 14 p2314 N68-25165 Pion exchange in nuclear weak in 14 p2319 N68-25463 System of two pi mesons and disintegration of cutral K mesons related to discrete symmetries of CP or time reversals TCP or time [TH/68/12] 14 p2320 N68-25598 Polarization in pion proton scattering at various energy levels 15 p2514 N68-25947 Vector currents applied to electromagnetic interac-tions of electrons and neutrinos in production of soft pions 15 p2491 N68-26047 Two pion photoprodu chamber below 1000 MeV [LNF-68/21] in hydrogen bubble 15 p2517 N68-26154 Ratio between decay rates of neutral kaons and pions 15 p2520 N68-26476 Photoproduction of pion pairs and nitrogen in liquid hydrogen 15 p2521 N68-26517 Low energy pion wave resonances in meson-meson 15 p2523 N68-26560 Nonlinear chiral Lagrangian models for soft pion emission, absorption, and scattering [COO-264-421] 15 p2524 N68-26752 pions and protons and d distribution Six prong interactions of p resultant particle production and [INR-837/VI/PH] distribution 15 p2525 N68-26776 Differential cross sections for elastic scattering of ions from hydrogen protons 15 p2526 N68-26919 One channel static model of pion-nucleon scattering 16 p2718 N68-27079 Pion-proton interactions, elastic scattering, and resonance production and decay 16 p2719 N68-27159 Pion-proton elastic scattering with scattering cross 16 p2720 N68-27187 Resonance, strangeness, and spin in reaction of nega-tive kaon with neutrons at high energy nergy 16 p2721 N68-27237 interference effects as cleon resonances for negative pion-proton elastic scat tering 16 p2721 N68-27345 Differential cross sections for elastic scattering of ions by protons, and application of Regge pole theory pions by protons, and appli to differential cross section 16 p2724 N68-27839 Quantum statistical model applied to pion and kaon distribution and production in proton-antiproton an-nihilation reaction 17 p2926 N68-28601 Cross sections and wave a production by kaons on protons [UCRL-18131] re analysis in single pion 17 p2931 N68-28937 Spectrum analysis, branching ratios and amplitudes in kaon and lepton decay studies 17 p2932 N68-28957 ns, and inelastic pion-inces and their decay 17 p2934 N68-29050 Amplitudes, branching ratioton reactions to study reson UCRL-18154] Asymmetry in electron-proton electroproduction and electromagnetic form factor of pions [JINR-P2-3774] 17 p2936 N68-29211 Spectrum of lead 210, pion-no sections with pion exchange mod [COO-1051-21] eutron scattering cross 17 p2939 N68-29235 Quasi two body reactions steractions at high energies ns in positive pion deuteron 17 p2943 N68-29492

Six prong negative pion proton interactions at 11 GeV/c incoming momentum 17 p2944 N68-29497 Multiprong events in 25 BeV/c negative pion proton 17 p2944 N68-29498 Electroproduction of pions at high energy and large tomentum transfer 18 p3129 N68-29908 Electromagnetic mass differences of pion and kaon 18 p3132 N68-30246 Vector meson dominance analysis of pion-proton (DESY-68/6) 18 p3137 N68-30699 Angular correlation betwe produced in negative-pion zeno [INR-P-882/VI/PH] reen neutral pi-mesons 18 p3139 N68-30809 Polarization parameter in elastic scattering of nega-tive pions by protons from 600 to 300 MeV/c 19 p3328 N68-31273 Continuous momentum ion differential cross section m rules for determining photoproduction 19 p3330 N68-31401 Pion-pion cross secti [LAL-1181] 19 n3333 N68-31732 Multiple production of pa GeV pions with photographi [REPT.-902/VI/PH] articles in collisions of 200 ic emulsion nuclei 19 p3335 N68-31817 Positive pion energy spectrum is raction yielding one positive p ectrum in positive kaon decay sitive pion and two neutral UCR-34-P-107-661 19 p3336 N68-31951 Theory of double pion photoproduction at low ener-DESY-68/7] 20 p3543 N68-32706 Negative pion elastic scatteri tion with positive nucleon reson (DESY-68/18) stic scattering in pion proton reac-20 p3543 N68-32730 Measurements of single pion pl deuterium at small momentum tras [DESY-68/22] on photoproduction from 20 p3544 N68-32731 Production of charged pions in neutron-nuclei colli-20 p3545 N68-32954 Positive kaon plus negative pion plus de and 9 BeV/c [UCRL-18201] n yields positive kaon plus sonance interaction at 4.6 20 p3546 N68-32996 ery high energies 20 p3546 N68-33063 [JINR-P4-3800] Estimation of four-momentum transfer and effective tass in coherent interactions of 200 GeV pions with REPT.-888/VI/PH] 20 p3549 N68-33295 Analytical repres on spectra from nucl inge 750-2000 MeV range 750-2000 Me ([NASA-CR-96371] 20 p3550 N68-33376 Pion form factor n troproduction 20 p3550 N68-33459 Finite energy sum rules for and omega-Regge pole residue f [NP-17489] pion photoproduction 20 p3551 N68-33491 Coincidence detection of pions scattered from liquid hydro on production in elecogen target 21 p3733 N68-33651 Analyticity and unitarity in /extended one pion exchange m rity in model S matrix theory 21 p3734 N68-33744 Pion production and pion nuc 21 p3736 N68-33893 Strong interaction supercor axial vector meson and pi scatte vergent sum rules for 21 p3737 N68-33930 Neutral pion photoproduction from deuteron at forward angles in energy range from 900 MeV to 1400 MeV 21 p3737 N68-33941 tuon decays in nuclear 21 p3737 N68-34006 Calculated rates for kaon decay into kaon resonance ion and kaon resonance decay into pion kaons 21 p3738 N68-34019 Applications of the absorptive one pion exchange 21 p3738 N68-34104 Collison cross section measurements for hotoproduction of negative pions by neutrons in deu-crium [NP-17458] 21 p3742 N68-34438

Kaon decay me (NYO-3829-14) ion scattering 14 p2302 N68-24485 DEX

at 11

29497

proton

29498

large

29908

aon 30246

roton

30699

esons

0809

nega-

1273

ining

1401

elec-

1732

200

1817

lecay utral

1951

mer-

706

eac-

730

731

oli-

954

Plus 4.6

996

063

tive rith

295

rgy

176

59

91

ic-

51

iry

44

93

an

12

Design parameters for linear accelerator for accelerating pions from 400 to 1200 MeV [LA-DC-9419] 21 p3677 N68-34448 Pionic radioactive decay of deuterons investigated within framework of Regge pole theory [UCRL-18252] 21 p3744 N68-34585 ces resulting from pion bombard-Baryon reson ment of prot 21 p3746 N68-34744 nces and backscuttering using Regge 22 p3923 N68-34988 Coherent production of multipion final states in pion teractions with nuclei 22 p3924 N68-34993 High energy elastic scattering of pions, kaons, and 22 p3924 N68-34995 Pion-pion scattering effects in proton-antiproton an-hilations at 2.5 GeV/c 22 p3925 N68-34997 nance production effects on pion pair angular tion of reaction pion proton approaches limit of proton 5 pion 22 p3925 N68-34998 Peripheral processes in pion nucleon scattering 22 p3925 N68-35024 S wave pion pion elastic scattering in pion proton in-22 p3927 N68-35150 Kaon electromagnetic properties investigated using on characteristics and quark models PM/68/2] 22 p3930 N68-35549 pion charac [PM/68/2] fuction and electroproduction of pions in polarized proton targets 22 p3932 N68-35645 Energy graphs for real part of elastic pion nucleon and nucleon-nucleon scattering amplitude [JINR-P2-3850] 22 p3935 N68-35832 rules for scattering of al vector or vector particles 22 p3938 N68-35978 Mathematical models for predicting resonances and nematical peaks in pion-nucleon interactions 23 p4111 N68-36036 meson scattering theory and pseudoscalar pion-nucleon theory 23 p4112 N68-36101 Multi-pion systems /symmetries a 23 p4112 N68-36115 Search for production of scalar meson below K-pion [UCRL-18206] 23 p4114 N68-36210 Omega neutron, phi neutron at 2.10 BeV/c and negative pion proton elastic scattering at 1.89 and 2.10 BeV/c 23 p4114 N68-36213 Partial wave bootstrap calculation for elastic pion-pion scattering using S matrix theory 23 p4116 N68-36450 Reaction negative kaon plus proton yielding positive pion plus negative pion plus proton at 4.1 and 5.5 GeV/c studied in hydrogen bubble chamber 23 p4118 N68-36662 ICOO-1195-1111 Enhancement of positive pion-negative pion system produced in negative pion-proton reaction [RPP/H-33] 23 p4121 N68-36783 Evaluation of Regge pole model for pion nucleon attering at small momentum transfers and high ener-UCRL-17873] 23 p4121 N68-36804 Bevatron spark chamber study of positive kaon decays at rest [UCRL-17887] 23 p4122 N68-36878 Hydrogen bubble chamber study of proton proton proton proton proton positive pion negative pion reaction [COO-1195-125] Production of negative kaons and negative pions om protons incident on copper and uranium targets RPP/H-28] 23 p4124 N68-36901 from protom (RPP/H-28) Observation of zero isotopic spin for negative pion COO-1428-841 23 p4128 N68-37041 Proposed high momentum transfer experiments of negative pion plus proton yielding neutral pion plus neutron reactions on zero gradient synchrotron [COO-1749-2] 23 p4128 N68-37042 Kaon form factors in current algebra with hard pions

23 p4131 N68-37123

Vector meson dominance model and positive-pion roduction by unpolarized and linearly polarized DESY-68/331 and pseudohydrid (JINR-P13-3870) Model for pion-pi (SINP-TH-67-18) COO-1428-711 (BNL-126741 PIPE FLOW [AEEW-R-542]

of pion energy depen-tion decay 23 p4134 N68-37212 perties of pion decay 23 p4134 N68-37227 duction in positive pi t 2.3 GeV 23 p4134 N68-37243 24 p4304 N68-37426 cess studies with partially into generalized for elec-24 p4308 N68-37542 Multiple pion production by positive pion beam at 1.48 BeV/c in hydrogen 24 p4311 N68-37661 Compression of the life ti checking charge parity time [JINR-P1-3862] es of charged pions for 24 p4311 N68-37700 High energy two prong interactions in negative pion 24 p4315 N68-37872 Coherent production of proton positive and negative ion with proton exposure of neon hydrogen bubble 24 p4315 N68-37899 er data on strange particles ractions at 5.0 GeV/c 24 p4315 N68-37903 in negative pion-proton interactic [COO-1428-72] Meson states in positive pion deuteron reactions at 2.7 GeV [COO-1428-70] 24 p4318 N68-38081 Method of characteristics solution for equations governing unsteady flow of liquids in closed systems [NASA-CR-89954] 01 p0050 N68-10219 ated pipes 01 p0152 N68-10903 Viscous flow in circular cylin finite line of spherical particles 02 p0197 N68-11188 Reducing aerodynamic drug of holes with annular ribs and recesses [FTD-HT-66-371] 02 p0158 N68-11418 Fleat transfer in supercriticar regular New York in turbulent flow in steel pipe 02 p0287 New 11725 Cooling properties, therm 02 p0288 N68-11728 Effect of entry conditions on heat transfer in entry 02 p0289 N68-11742 02 p0290 N68-11743 Heat transfer and friction ch dinal flow around fuel channel racteristics of longituoz poz90 N68-11746 Heat transfer and flow resi ce of finned, staggered 02 p0290 N68-11747 02 p0291 N68-11751 Flow equations for determining friction resistance during unsteady flow of fluids in tubes 02 p0202 N68-11753 02 p0239 N68-11876 05 p0755 N68-14605 Pressure drop, and fle ibution calculations for 06 p0830 N68-15876 Frictional resist locity similarity laws of drag reducing di (NSRDC-2502)

23 p4132 N68-37168

23 p4133 N68-37192

by hydrogen in alkalies, salts,

PIPE FLOW Flow variables related to minimum pressure in circular pipe bends (NASA-CR-61576) 08 p1160 N68-17429 Shock spectrum analysis program for IBM 7094 09 p1322 N68-18456 [TID-24137] Turbulent boundary section of tube [NASA-TT-F-11254] of dissociated gas at inlet 09 p1329 N68-19026 09 p1350 N68-19078 Development of au system using thermioni temperature control [NASA-TN-D-4299] 09 p1378 N68-19146 10 p1515 N68-19865 Measurement, interpret momentum fluxes in two pi [REPT.-70318-50] 11 p1685 N68-21155 Theoretical and exp transfer in concentric using analogy of impul [JUL-506-RB] al determination of heat r spaces between pipes 11 p1804 N68-21236 14 p2241 N68-24936 Heat pipe flow simulation to tribution in vapor of heat pipes [LA-3881-MS, PT.1] 15 p2389 N68-25656 16 p2648 N68-27847 cts of pipe surface roug at transfer coefficient and heat transfe (RLO-1954-2) 16 p2649 N68-28042 Turbulence in pipe flows of ga [TR-118-MAE-F] eolid suspensions 16 p2649 N68-28180 ni heat flux, and film leate builting tube 16 p2709 N68-28205 Boiling flow regime, 18 p3059 N68-29804 Energy spectra of streamwise fluctuating velocity and mean velocity in study of viscous sublayer alon-wall in turbulent pipe flow 18 p3061 N68-29977 dy flow in thin INAL-TR-1441 18 p3190 N68-30762 one for extern re 20 p3600 N68-32501 Dynamic model for analysis of heat transport in vapor chamber fin [NASA-CR-54882] 20 p3610 N68.32072 21 p3677 N68-33617 on drop size distribu-miscible liquids 21 p3679 N68-33870 21 p3680 N68-33990 niner pipe flow with 22 p3976 N68-34886 quids discharge and tubes 22 p3858 N68-35229 NASA-CR-619641 re gradients in pipe flow 22 p3859 N68-55343 n heated two phone flow 22 p3863 N6B-35631 Adiabatic tube flow at le ence and heat transfer ch runce and downstream reg [NASA-CR-97098] w Reynolds number turbu-racteristics in thermal enking length flow r analyzing incompre [NASA-CR-1169] 23 p4046 N68-36343 al models, and com so of liquid flowing

SUI

(0

[A

CE

by

for

tre ide

C

FIR

10

EC

fa [/

07 p0933 N68-16385

HIN

PITC

PITC

Effects of pipe dimensions, surface tension, and gas cocentration in vaper condensation on horizontal Fracture tests of primary coolant piping for pres-triated water and boiling water reactors BMI-1817] 05 p0748 N68-14516 Heat flux and flow characteristics for transient modes of heat pipe startup [LA-DC-9026] 17 p2983 N68-28359 (BMI-1817) 24 p4353 N68-37743 adioisotopes in sealed form to locate obstruction its in hot water pipes with particular regard to radi-Pressure drop calculation in pipes, with constant Heat flow through pipe penetration into multilayer ant panels [EUR-3646.I] Design and operating characheat transfer through porous m [ORO-3411-11] 05 p0757 N68-14793 [NASA-CR-72368] 24 p4354 N68-37852 ing characteristics of heat pipe in porous media study 17 p2986 N68-28934 Revised formulas for stress analysis of forces during pressing of pipes in dies with built-in core pins [FTD-HT-66-728] 05 p0670 N68-14900 Absorbent acoustical materials for reduction of acoustic fluidborne noise in shipboard piping systems-survey of dissipative lining materials in water [NSRIDC-2430] 01 p0100 N68-10968 tical materials for reduction of Surface defect analysis to predict failure pressure for Analytical and experimental study to optimize filling rocess of pipes during automatic compression tests ductile pipe rupturing [BMI-1836] 17 p2982 N68-29120 Process and media for cleaning of corrosion resistant steel tubing for liquid oxygen and pneumatic service 17 p2895 N68-29333 Deformation analysis to determine vibration requencies in multiple pipe system 02 p0279 N68-11881 06 p0850 N68-15334 Design, construction, and testing of heat pipe ap-plicable for spacecraft thermal control [TG-922] 66 p0768 N68-15338 Modified Ritz method for problem of steady creep of insymmetrically heated tubes subjected to internal ne for simple cryogenic pipelines 1961 09 p1451 N68-19314 [NASA-CR-91256] Deformation resistance analysis for steel steam pipes exposed to prolonged stress, and strain 08 p1252 N68-17715 18 p3172 N68-29580 Development of warm distribution system for hydrazine fueled gas generators for spacecraft attitude Steady state creep of long thick walled cylindrical tube under combined effect of internal pressure, axial force, and torque Hydrodynamic friction coefficients for fluid flow in tubes with lubricated surfaces [FTD-HT-66-595] 08 p1162 N68-17887 [NASA-CR-93661] 09 p1278 N68-19389 Flow rate limits imposed by thermal stresses in stain-less steel pipelines cooled with liquid hydrogen [LA-DC-9[63] 16 p2650 N68-28312 18 m3172 N68-29581 08 p1162 N68-17887 Destructive and nondestructive tests of organic cooled heavy water reactor pressure tubes [EUR-3929.E] 18 p3116 N68-30289 Navier-Stokes equation for dynamics of viscous fluid transmission lines in closed conduits [NASA-CR-61622] 09 p1328 N68-18778 Rheological study of viscosities and pipeline flow of concentrated slurries Compressive strength of tubular specimens of ceramic materials under multiaxial stresses [RR-TR-68-1] 18 p3094 N68-30559 High explosive closing of alumi num, copper, and 18 p3059 N68-29804 Literature search and experimental studies on jet 09 p1347 N68-18872 Particle transport in turbulent flow to channel or thrust forces caused by reactor cooli [AGRR-TB-14] ooling pipe fracture 19 p3311 N68-31527 Rarefied gas dynamics between parallel plates and in WAPD-TM-765) 18 p3064 N68-30624 niform flows in distributed outflow 09 p1330 N68-19257 Superimposed disturbance effects on pulsating flow diffusion in rigid and in distensible tube Analog analysis of flow reversal and water hammer pressure in reactor closed hydraulic rabbit tube facility [ANL-7336] 10 p1354 N68-19506 21 p3681 N68-34144 * 19 p3261 N68-30925 NT GAS PIPES NT HEAT PIPES Heating of copper tubes during drawing in ultrasonic ternally propelled supersonic veh [TR-AE-6704] lation of flow induced in wake of in-upersonic vehicle in infinite tube 10 p1455 N68-19538 [RTS-4302] 20 p3485 N68-32540 Ultrasonic wrench for flared tubing connections [NASA-CR-89965] 01 p0068 N68-10329 Automatic butt welding of pipes by means of mag-metically driven rotating arc [GAW/EE/67A-2] 10 p1534 N68-19902 Fabrication and mechanical properties of zirconium-chromium alloy tubing for nuclear fuel cladding tubing [GEAP-5589] 20 p3501 N68-32956 Stress rupture properties of Hastelloy tubing before que for extrusion of thin Floating ma Hydrodynamic and quiet so bular mercury-film electrodes 01 p0090 N68-10436 tion voltammetry at tu-[NASA-TM-X-1638] Flexural vibrational characteristics of symmetric 20 p3488 N68-32977 10 p1488 N68-20100 Multichannel eddy current analyzer for nondestruc-tive tests of tubing [BNWL-765] 21 p3694 N68-34712 Torsion creep of circular and noncircular tubes 11 p1791 N68-20608 [AE-1578] 01 p0144 N68-10712 Power increase program for Triga reactor - construc-tion of tangential through channel for low gamma in-Fundamental leakage and structural studies of fluid Hot extrusion of pipes from high strength steels (FTD-MT-24-297-67) 22 p3883 N68-35540 [RT/ING/67/10] 01 p0094 N68-10737 11 p1704 N68-20974 Shock wave attenuation in long pipes by obstacles to wess nuclear blast protection Uncoupled flexural vibrations of o [AE-1595] 01 Principles of connector testing, design evaluation of ommercial connectors, and assessment of design rules of open tubes 01 p0144 N68-10768 (ORNL-4288) 22 p3974 N68-35681 Preparation of filament wound glass microtape for rming thin walled tubes for containing cryogenic Nondestructive test methods for reactor fuel element for threaded connectors [NASA-CR-93924] 11 p1704 N68-20976 Production design feasibility of half inch X-connec-tor for 4500 pai service [NASA-CR-93923] 11 p1704 N68-20977 [TRG-1427/S/] 02 p0237 N68-11184 22 p3884 N68-35715 Convective heat exchange in homogeneous gas media, including heat transfer and friction resistance in pipes, hydrodynamics and heat transfer in jets, and in-tensification of convections. INASA-CR-724501 Steady and non-steady flow of fluids through expan-ble silicone rubber tubes Guide manual for aiding designers in selection of uct, tubing, and gasketing materials for space vehicles ad missiles 23 p4046 N68-36223 tensification of convection [NASA-TT-F-431] ation and extent of ductile pipe rupture, includ-dies of surface flaws and through-wall notches [828] 23 p4182 N68-36758 02 p0287 N68-11721 11 p1704 N68-20978 Heat transfer from wall to turbulent gas flow inside Hydrogen accumulation rates within thick walled tubes of iron chromium and iron chromium nickel alloys exposed to high pH high temperature pressurized water containing dissolved hydrogen [WERL-1114-3] (BMI-1828) Heat transfer from superinter gradients of pipe at large temperature gradients of pipe at large temperature gradients Microstructure and mech m tubing and performance chanical properties of berylli-ince tests on support columns Heat transfer coefficients for organic liquids, such as monoisopropyldiphenyl, over pipe lengths
02 p0287 N68-11724 of beryllium [NASA-TN-D-4833] 11 p1714 N68-21195 23 p4079 N68-37053 Feasibility of unscattered sampling system for Mars atm [NASA-CR-66683] Liquid layer effects on a ess in condensing lar beam probe Generalization of laws governing heat transfer and pressure drop during transverse flow of gases in contact with finned tube banks phere analysis 23 p4174 N68-37395 12 p1860 N68-22148 Oxides effect on heat tra during transverse flow d tube bank 12 p1984 N68-22596 Thermal gradient effects on of thin walled stainless steel tub [AI-AEC-12695] stress rupture behavior 02 p0290 N68-11748 al across staggered 24 p4348 N68-37908 Selection and procurement of materials having hot corrosion resistance applicable as tubing in gas turbine engine recuperators and for dynamic hot corrosion Window designs for m mercury boiler outlet tube [NASA-TM-X-1578] ercury condensing tube and Plastic deformation during complex loading of tubu-lar steel 45, brass, copper, and Duralumin D16 samples 12 p1856 N68-22737 (HT-67-2512/1/) 02 p0223 N68-11866 [FTD-MT-24-187-67] 24 p4349 N68-37955 Ultrasonic inspection as thickness in Inconel tubes [TN-6708.299] measurement of wall Notched-bar creep-rupture test and stress analysis studies of metal tubes [AROD-4656-2-E] 03 p0422 N68-12390 NT DIESEL ENGINES 14 p2264 N68-24823 Heat pipe flow simulation to tribution in vapor of heat pipes [LA-3881-MS, PT.1] Aircraft gas turbine and pist [FTD-MT-54-402] on engine design 08 p1231 N68-17987 Design criteria for experimental heat pipe collector Computer program for data reduction from free piston engine tests [NRC-9971] 15 p2546 N68-26494 15 p2389 N68-25656 [NASA-CR-91437] 94 p0447 N68-12979 Dissimilar metal tubular joints fabricated by diffu-sion welding [NASA-CK-91435] 04 p0515 N68-13219 Seamless titanium tub es water environments ng for flash evaporator used in Reciprocating engine and exhaust vibration and tem-perature levels in general aviation aircraft [FAA-NA-68-27] 17, p2807 N68-28929 15 p2482 N68-25971 sondestructive tests on tantalum ic tubing for SNAP 8 boiler system 1] 16 p2667 N68-27332 Improved fusion welded the connections for vacuum [NASA-CR-72394] Chemical to electrical power conversion using odified free piston engines [LA-DC-8978] 04 p0517 N68-13875 Heat pipe performance in otential use of heat pipes for so 24 p4199 N68-37497 Crack propagation of zirconium-niobium alloy tubpotential use of h transfer problems (LA-DC-9028) PISTON THEORY [BNWL-360] 05 p0674 N68-14192 16 p2774 'N68-28144 Flow around blunt, slender cones performing pitching oscillations analyzed by means of Chernyys blast wave piston analogy Heat pipe method for a hemispherical surface em (LA-3834-MS) Acoustic emission beha tubing under applied stress [BNWL-545] ior of Zircaloy 2 pressure

16 p2798 N68-28294

05 p0747 N68-14403

EX

8359

stant

8754

pe in

1014

e for

120

333

p of

580

rical exial

581

amic

559

624

540

um-ng

77

uc-

12

to

81

for

15

in-

23

d

58

53

15

3

Conical solutions of linearized Lundquist equations for expansion of cylindrical piston into conducting fluid 12 p1946 N68-22159 PISTONS NT MAGNETIC PISTONS Deflagration and detonation wave propagation in agreetohydrodynamics, and piston problems CEA-R-3137] 02 p0254 N68-11482 [CEA-R-3137] Sintered iron brake cylinder pistons to reduce oxida-tion and gum formation [CCL-238] 06 p0848 NAS.15000 Equilibrium piston technique in gun tunnels. [ARC-CP-982] 13 p2047 N68-23209 Pressure decay rate in free piston shock turnel reser-(VKI-TN-401 18 n3064 N68-30673 Theoretical perfo tube using helium or [VKI-TN-42] performance study of free piston shock in or hydrogen gas 18 p3064 N68-30729 Elastomer O ring seals for piston ring and shaft seal operation in dry helium atmosphere [ORNL-TM-1661] 20 p3488 N68-32955 PITCH Judgment tests conducted to determine noise levels or loudness of tones plus noise [NASA-CR-1117] 18 p3015 N68-30602 18 p3015 N68-30602 -tone electropho [AD-673881] 22 p3880 N68-35940 PITCH (INCLINATION) Takeoff behavior calculations of slender wing super-sonic transport design constrained to follow specified pitch attitude time history (ARC-R&M-3493) 03 p0301 N68-12447 Diurnal variations, and pitch angle distributions of low energy cosmic ray cutoffs [TR-0158/3260-20/-2] 04 p0570 N68-12927 Nose bluntness, cone angle, and Mach number effects on stability characteristics in pitch of blunt slender cones [ARL-67-0185] 04 p0432 N68-13007 Analog simulation of pitch angle dispersion with air-craft motion in turbulent atmosphere 04 p0446 N68-13843 Optimal pitch angle for constant fuel consumption by earth satellites in powered phase 05 p0734 N68-13944 Rigidly forced oscillatory dynamic stability method or measuring pitch and yaw damping derivatives in rind tunnels at transonic and supersonic apeeds 08 p1111 N68-17455 Trajectory optimization and linearized pitch com-puter program for Scout launch vehicle [NASA-CR-66515] 08 p1243 N68-18185 08 p1243 N68-18185 Airborne computer for self adaptive pitch rate con-trol systems using difference equations for parameter [GA/EE/67-2] 10 p1458 N68-20082 Mathematical model on suppressing transmitted har-monic rotor loads by blade pitch control [CAL-BB-2117-S-1] 11 p1622 N68-20712 Wind tunnel stability tests of pinch of modified half ring wing body and swept wing body combinations at supersonic speeds (NASA-TM-X-1551) 12 p1809 N68-21940 Hypersonic wind tunnel pitch damping of slender cone to evaluate water cooled pitch damping support

(NOLTR-68-41 15 p2449 N68-26713 Basic features and accuracy of dynamic stability choique used in wind tunnels to measure pitch and we damping characteristics of aircraft configurations NASA-TM-X-59114 16 p2584 N68-27535 yaw damping characteri INASA-TM-X-591141 PETCH (MATERIAL) Advanced graphite fuel systems [GA-7827] 03 p0381 N68-12745 High temperature research and density measurements for graphite from impregnated pitch [GA-8376] 15 p2489 N68-26534

PITCH ATTITUDE CONTROL
U LONGITUDINAL CONTROL

FITCHING MOMENTS

Lift, drag, and pitching moment measurements on fanned nacelle in wind tunnel flow [ARC-R&M-3494] 03 p0299 N68-12756

Forces and moments produced by air and helium jets exhausting parallel to flat plate in near vacuum [NASA-TN-D-4408] 09 p1328 N68-19000 Normal force and pite ching moment for oscillating,

10 p1436 N68-20147

effects on lift, pitching moments, wave erodynamic center shift in rectangular, manifestions at Interservence transfer of the content of the conten (DLR-FB-67-93)

11 p1619 N68-21300 ng-pitching coupling of Stability criterion for ro Griffon aircraft /Nord 1500/ 15 p2389 N68-26951

Functional analysis for dynamic stability in pitching m [NASA-TM-X-59120] ment calculation 16 p2584 N68-27411

Supersonic wind tunnel stability tests on ARPAT target vehicle for roll, pitch, and drag [BRL-MR-1915] [7 p2803 N68-29020

Lift, drag, and pitching moment data for wings in-nersed in propeller slipstream obtained in wind tunnel [LR-501] 22 p3801 N68-35923

Analytical method for computing pitching and rolling moments on hydrofoil undergoing large am-plitude oscillations FTR-662-11 23 p4160 N68-36216

Flexibility effects on lift and pitching moments of low spect ratio delta wing-conical-cylindrical body com-inations at transonic speeds binations at transonic [NASA-TN-D-4655] 23 p3986 N68-37065

PITOT STATIC TUBES
U SPEED INDICATORS

PITOT TUBES

Engineering aspects of instrumentation and circuitry for pitot-static probe payloads for Nike-Cajun rockets [NASA-CR-93251] 08 p1245 N68-17867 Gas measuring system er

ors arising from thermo-tubes and at orifices 09 p1450 N68-19195 molecular pressure effects [AGARDOGRAPH-119] Effect of turbulence on static pressure tubes [ARC-R&M-3527] 14 p2180 N68-24769

Low speed measurements of wing using surface pitot tubes (ARC-R&M-3499) ents of skin friction on slender 14 p2181 N68-24858

Effects of operating environment on expansion tube NASA-TM-X-604471 15 p2450 N68-26937 Shock wave position determined from pitot pressure

17 p2874 N68-29261 Pitot tube and hot-wire flowmeter data for turbulent oundary layer on rough surfaces in adverse pressure

NSRDC-26591 18 p3062 N68-30110 Wedge-type pitot-static probes for turbomachine ap-

SP-9191 20 p3460 N68-32462 Pitot pressure measurements with rapidly traversing robes in wake of sphere in diverging hypervelocity

22 p3860 N68-35421 Behaviour at subsonic speeds probe mounted close to hyberbs [ARL/A-300] ts of Mirage 3 pitot-static bolic heated gust probe 24 p4195 N68-38430

PITS [EXCAVATIONS]

Simulated small scale overburden stripping by nuclear explosions in open pit mining of oil shale [SC-RR-66-477] 03 p0430 N68-12754

Slope of etch pits in zinc surfaces [TR-11] 10 p1491 N68-20240

Catastrophic pitting of aluing sulfuric acid anodering [REPT.-1919] m-alloy castings dur-

11 p1716 N68-21432 High speed photographic study of ultrasonically in-sced cavitation corrosion, bubbles, and pits 15 p2473 N68-26235

Characteristic each pits and each tabes on single crystal indium sesquioxide grown from lead exide boron exide melius [TR-0158/9230-03/-4]

15 p2416 N68-26413 PITUITARY HORMONES

Effect of changing gravity and weightlessness on vasopressin control systems [NASA-CR-90750] 03 p0306 N68-12568 Amobarbital and pituitary hormones for sleep pro-ingation of mice under space flight stress 21 p3632 N68-33911

PIVOTED WING AIRCRAFT
U TILT WING AIRCRAF PIVOTS

Theoretical study of effect of pivot location or erodynamic balance survement of variable sweep wings in incompressible INASA-TN-D-46351 17 p2802 N68-28817

ompressor, stator, and vame pivot cod air breathing engines 17 p2895 N68-29320 seals for use in advar [NASA-CR-72405]

PLAGES (FACULAE)
U FACULAE

PLAN POSITION INDICATORS

Conceptual development of long wave rular display based on processed plan position indicator and cross beam ruster scan techniques (NASA-CR-73185) 07 p1023 N68-17008 07 p1023 N68-17008

Visual detection of radar pip visibility thresholds on lan position indicator TM-750-1) 11 p1642 N68-21738

Design and operation microelectronic plan por of fully transistorized n indicator - MIRAGE [EH-61696] 15 p2469 N68-26601

nechanical and electrical a transparency system 22 p3839 N68-35941 for air traffic control Design requirements for components of radar land m [AMRL-TR-68-8]

[FAA-RD-68-28] 24 p4227 N68-38145

PLANAR STRUCTURES

nt panel techniques for Manar electrolumines large-area color display de [NASA-CR-92666] 07 p0975 N68-16890 ar frames loaded normally

10 p1608 N68-20235

Materials and fabricati al structure interconnec iniques for planar coax semblies and subseem (F058-7U13) 13 p2041 N68-24056

its based on planar Integrated power of techniques for use in as [BMWF-FB-W-68-04] 14 p2229 N68-24764 Automatic load path de atrix force method

21 p3784 N68-33797 ined for unbraced,

23 p4180 N68-36385

PLANCKS CONSTANT

Black body radiation puter and hand culcu specified spectral range [NASA-TN-D-4446] erical solution for com-of total intensity over

PLANE WAVES

09 p1359 N68-18455 Plane and spherical tran with nuclear and high exsient Voigt waves compared

02 p0205 N68-11274 (REPT.-1-170)

sion with back pressure cal waves in games 02 p0284 N68-11554 Analyses of initial point explor plane, cylindrical, and other

Integral equations for reflection of plane elastic waves from an arbitrary inhomogeneous layer in nor-mal incidence

02 p0277 N68-11671 Earth surface prope of plane and spherical

(FTD-HT-46-264) 03 p0321 N68-12182 nance effects in plane structure 07 p0964 N68-16930

e wave scattering

07 ±0965 N68-16934 Scattering matrix theory for solving problem of in-cident plane wave diffraction by thick conducting half plane and delectric-leaded waveguide. AFCRL-68-00151

TI p1744 N68-20620 a flat surface of micropolas

11 p1792 N68-20652 pistion for scattering of Spheroidal-function series plane wave by penetrable api [EDL-M1050]

11 p1744 N68-20865 iffraction by impedance stegral and special tabu-

12 p1862 N66-22353

derived for nonstationary diffraction by impedante 12 p1917 N68-22585

comparing amplitudes of sources positioned in focal

14 p2230 N68-24358 ty conducting cylinder ulaive place waves 16 p2619 N66-27081

51

PL.

8

FLA

PLANET EPHEMERIDES ter program for development of planetary at-c models for spacecraft design and mission Plane wave expansion with three dimensional Fouri-transform for inverse electromagnetic scattering [REPT.-8579-4-Q] 16 p2713 N68-27194 09 p1421 N68-18841 Green functions for Rytov equation of propagation plane monochromatic waves in random medium PSRP-350] 16 p2714 N68-27311 Mercury atmospheric models 09 p1421 N68-18844 Abstracted data on Soviet-bloc r [PSRP-330]
Electron energy levels calculated for copper-gold bi-nary compounds using plane wave methods. 17 p2936 N68-28639 10 p1598 N68-20530 ing diffraction of plane [NASA-TT-F-515] 11 p1787 N68-21802 18 p3121 N68-29628 Simulated planetary at we and convective hea eres for studying radio leation of electromagnetic m - scattering of plane wave eriodically modulated medi-Reflection and amplific waves in oscillating medium incident upon time-space pe NASA-CR-94317) 12 p1982 N68-22230 Absorption characthermal radiation in p [NASA-CR-94659] of infrared, laser, and [SR-10] 19 p3342 N68-31798 [SR-10]
Guiding and plane wave scattering of electromag-setic fields by planar corrugated structures 20 p3537 N68-32701 mospheres 13 p2064 N68-24137 Counic dust particle b interstellar space, and pla [NASA-CR-94784] r in interplanatary and atmosphere 14 p2348 N68-25310 Elastic wave propa theory of characteristic (NASA-CR-96768) High voltage breakdown copheres - prediction of stemma in any atmosphere omena in planetary at-age breakdown of any 21 p3790 N68-34361 Normal velocity distribution on arbitrary three mensional scattering surface struck by weak acoustic 15 p2444 N68-26888 wn in planetary at-REPT.-321 22 p3972 N68-35395 15 p2444 N68-26891 PLANET EPHEMERIDES rent radio Decametric observations of Jupiter during 1967 apds of m spectra in planetary submillimeter wave p [NASA-CR-963] NASA-TM-X-55996] 01 p0132 N68-10003 16 p2618 N68-27063 Computer-calculated 1800-2000, for nine prin Newtonian ephemeride ipal planets - Developmen ating planetary circulaeric model for calc aphemeris number 2 [NASA-CR-90430] tion patterns [AFCRL-68-0114] 02 p0266 N68-11595 16 p2755 N68-27196 etary limb darkenis of revised JPL hunar NASA-CR-92993] 07 p1079 N68-16470 GCA-TR-68-1-A1 18 p3162 N68-29718 ibliographic citations, abstracts, and indexes on setary atmospheres - June 1966 through December nd ephemeris analyses 13 p2154 N68-24193 (NASA-CR-94618) 1967 [NASA-SP-7017/02/] Shadow equation for sat of major planets in solar sys lunar orbit, and numerical ite, consistent ephemeris m, correction process for pproximation of Hermite 18 p3167 N68-30601 nongrey planetary at-Temperati 23 p4174 N68-37398 [NASA-CR-95947] 19 p3363 N68-31183 PLANET ORIGINS
U PLANETARY EVOLUTION Optical radiation m in simulated Mars atm [NASA-TM-X-1634] ts behind shock wave 20 p3463 N68-32982 PLANETARY ATMOSPHERES NT JUPITER ATMOSPHERE NT MARS ATMOSPHERE NT VENUS ATMOSPHERE tions at haropause for it (NASA-TM-X-633111 heric model 20 p3590 N68-33268 re of upper Martian at-Perturbation method for inverting radiative heat ansfer equation to obtain vertical constituent dis-(NASA-TM-X-61178) 21 p3772 N68-34673 tribution in planetary at [NASA-TM-X-63021] 01 p0134 N68-10169 Solar wind and ionospherole in inducing Venus or M [NASA-CR-96767] onductivity studied for Photographic analysis of pla etary surfaces and atnagnetospheres 21 p3774 N68-34778 [AFCRL-67-0504] 03 p0413 N68-12054 Planetary stroopheres nd dynamics, particle and wind, and exobiology stu-High energy physics - film on, particle interactions, I nalysis, and planetary atmos easuring and computa hda magnetic momen 22 p3958 N68-34928 ore species production 03 p0393 N68-12550 analysis, and plan [COO-1537-1] hotochemistry of planetary atmospheric matte ar EUV and VUV spectral region studies, ic lecule reactions and photoionization products, as Atomic oxygen and planetary thermospheres [NASA-TM-X-60766] 04 p0574 N68-13262 23 p4171 N68-36952 NASA-CR-97185 Structure of infrared attemputation of spectral re nd free piston shock tube ngle cones to determine convective heat transfer ersons.

of sixty degree mospheres (BMWF-FB-W-67-17) 04 p0533 N68-13455 gases used to simulate Infrared spectroscopy of 23 p4191 N68-37406

Conference papers on composition and atmosphere of Jupiter and space technological problems of Jupiter BMWF-FB-W-67-40] 11 p1784 N68-21476 Observations and theories mospheric properties, tempera of Jupiter ories on composition, at-perature, and surface layers 11 p1784 N68-21477 ok tabulations on composition, topography, nment of Mercury, Venus, and Mars 20 p3584 N68-32285 U ATMOSPHERIC ENTRY PLANETARY ENVIRONMENTS
NT JUPITER ATMOSPHERE
NT MARS ATMOSPHERE
NT WARS ENVIRONMENT
NT VENUS ATMOSPHERE neering and environmental quarantine - bibliographies 04 p0457 N68-13773 NASA-CR-91507] uirements studies, including ecraft, probability of spore vering microorganisms 06 p0772 N68-15139 [NASA-CR-91815] Definition analysis for experiental prediction of pilot performance di NASA-CR-73171] tary entry 06 p0785 N68-15945 nnological requirer ary missions, inclu-teristics, aerobrakin on to n [NASA-CR-73187] 09 p1422 N68-18943 Launch vehicle developmentations, physics and a nt, lunar and planetary occurs, and bioscience research and techno [NASA-CR-93736] 10 p1592 N68-20008 Soviet-bloc research in astronomy dealing with lund planetary observations, solar and lunar eclips and counsic radiation 12 p1968 N68-22480 Magnetic field study of interplanetary domain and Venus vicinity from Venera-4 spacecraft data [JPRS-45830] 18 p3165 N68-30211 Handbook tabulations on composition, topography, nd environment of Mercury, Venus, and Mars RM-420] 20 p3584 N68-32285 tations for blunt bodies in planetary Flow field com [NASA-CR-96375] 20 p3464 N68-33084 y, terrestrial geochemistry and mpact cratering and metamorphism, lunar-aron meteorites, and tektites - literature etology, sics, imp probes, stony-iron met review for 1967 INASA-TM-X-633371 22 p3958 N68-34927 PLANETARY EVOLUTION Earth rotation produced by gravitational accretion of particles - rotation period acquired by planetoid to reach planetary size [REPT.-67-19] 05 p0734 N68-13918 05 p0734 N68-13918 Radioactive age det and relation to planet [T-5-F] n results for meteorites, 08 p1241 N68-17952 Origin of solar syst [NASA-CR-93420] 09 p1418 N68-18461 Soviet bloc research cophere, luminosity etary origins, solar at-, star density, and radio 15 p2557 N68-25823 [GA/MECH/68-4] 20 p3588 N68-32942 LANETARY EXPLORATION
U SPACE EXPLORATION PLANETARY GRAVITATION Problems in geodetic gravis [ACIC-TC-1282] try and earth geometry 04 p0499 N68-13083 Earth rotation produced by gravitational accretion of particles - rotation period acquired by planetoid to reach planetary size (REPT.-67-19) 05 p0734 N68-13918 gravity assist from Jupiter [RF-85-O] ng of trajectories uning 96 p0909 N68-15420 as and capture and escape aspects of Planetary systems [EWR-SB-17-67] 06 p0910 N68-15559

search in Soviet bloc ings, planetary atnar surface composi-

24 p4252 N68-38040

20 p3479 N68-33184

ophilic yeast in limited ysis-infrared analysis of

03 p0306 N68-12322

07 p0992 N68-16878

10 p1520 N68-19819

Gravity assist optimis space missions [NASA-TM-X-63179]

Planetary gravitation as orbit alignment in Mars in [NASA-TN-D-4657] n technique for variety of

12 p1969 N68-22922

teness used for parking

17 p2966 N68-28408

s in seismic phenomena

Developing extraterrestrial resources technologies for using lunar and planetary resources to support

on and data systems for

Upper atmosphere and space taking with Cosmos law ospheres, noctifucent clouds

PLANETARY BASES

Advanced instrumentation lunar and planetary exploration

and earthquak [AD-663219]

INASA-CR-937261

PLANETARY COMPOSITION

planetary atmospher NASA-CR-915281

Radiative heat trus

Fortran computer proplanetary atmospheres as dispersion data for Apollo [NASA-TN-D-4292]

tive-radiative equilib [NASA-CR-93 [62]

INASA-TM-X-536931

planetary atmospheres [NASA-CR-92542] 04 p0380 N68-13809

06 p0911 N68-15662

10logy 06 p0913 N68-15748

m for calculating model density and temperature

07 p1080 N68-16598

08 p1235 N68-17235

09 p1420 N68-18836

olio reentry 06 p0913 N68-15793

and thermal structure of

Advances during 1966 in astronomy, exobiology, noupheric sciences, radio and solar physics, and

Equations, computer techniques, and model calculaons of long wave radiative transfer in planetary at-

Gray optically thick planetary atmosphere in convec-

CX

ter

76

77

of

45

m

43

ry

18

ar Is,

10

11

15

14

er re

17

a.

2

1

3

2

lupiter gravity assist for interplanetary spacecraft trajectories [NASA-TT-F-11880] 22 p3960 N68-35541 MANETARY LANDING Probabilistic approach to search strategy for Mars exploration las (RM-380) 03 p0413 N68-11987 Tochniques for sterilizat landers to prevent contain strumentation, tests, and pl [NASA-CR-91343] on of planetary probes and nation of exobiological intary biospheres 04 p0574 N68-13079 Bioassay, ultrack dling, and terminal heat nology feasibility planetary R-68-2, V. 4) 07 p0943 N68-16307 Thermal analysis and test effects for Technology easibility Spacecraft /TFS/, and three models using smoot parameter approach to simulate configurations planetary landing spacecraft 07 p1086 N68-16874 Proposed Phobos landi ng for radio signal analysis of Mars topography during occi [NASA-TM-X-60921] 09 p1424 N68-19139 Mathematical model on pro-terilization violation due to recbability of spacecraft ontamination of plane-(DOC.-67SD313) 14 p2344 N68-24721 ding mission mode com-Mars excursion module la NASA-TM-X-1629] 18 p3164 N68-29988 Mariner Mars 1969 project, Surveyor soft landing, and advanced planetary m (NASA-CR-96383) 20 p3590 N68-33246 Advanced multipe ter organization for 22 p3843 N68-35560 Summary of designs, re-references for Mars hard is [NASA-CR-66678-1] ments, constraints, and study system 22 p3966 N68-35980 Mission objectives and constraints for Mars hard ader to define out-of-orbit and direct entry reference [NASA-CR-66678-2] 22 p3966 N68-35981 Mission lander maps roshell, and parachute parametric data, entry (NASA-CR-66678-3) 22 p3967 N68-35982 etric analysis of M nder and prees subsystems - computer progr [NASA-CR-66678-4] for systems analyses 22 p3967 N68-35983 Design and performance cha lander capsule point designs, constraints for capsules 1 and 2 [NASA-CR-66678-5] aracteristics of Mars hard and criteria and mission 22 p3967 N68-35984 Analytical design data for capsules 3 and 4 in the Mars hard lander study system [NASA-CR-66678-6] 22 p3967 N68-35985 Engineering design of Mars hard lander capsules 5 and 6 and illustrations for increasing payload size [NASA-CR-66678-7] 22 p3967 N68-35986 Supporting data for mission planning and design criteria of Mars hard landing system [NASA-CR-66678-8] 22 p3968 N68-35987 PLANETARY LONGITUDE
U PLANET EPHEMERIDES PLANETARY MAGNETIC PIELDS Phase velocities for ELF and VLF wave propagation clow anisotropic ionosphere RR-548] 10 p1498 N68-20063 [RR-548]

Solar wind and ionospheric conductivity studied for role in inducing Vesus or Mars magnetospheres [NASA-CR-96767] 2 p3774 N68-34778

ARY MACO ence of uncertainties in planetary maconical unit on Earth-Mars trajectories 16 p2734 N68-26993

rical unit and manes of er radar tracking data ob-

oved asteroid orbits for use in mass piter, and technique for special per-integration without differences 17 p2972 N66-29413

17 p2965 N68-28351

PLANETARY MASS

and astronomical un [NASA-CR-61574]

mination of as d Venus from

Magnetic field configuration in outer magnetosphere from data obtained by Interplanetary Monitoring Platform /IMP/
[NASA-Thi-X-63241] 16 p2767 N68-27678 Magnetic field study of interplanetary domain and Venus vicinity from Veners 4 spacecraft data [JPRS-45830] 18 p3165 N68-30211

19 p3362 N68-32060 U SOLAR ORBITS PLANETARY NEBULAE Lifetimes of ultraviolet dwarfs and nuclei of planetary nebulae [NASA-TM-X-60768] 04 p0574 R68-13241 Mean mass effects on accuracy of planetary nebulae (INASA-TM-X-60775) 04 p0577 N68-13413 Radio measurements of planetary nebulae thermal 07 p1079 N68-16490 Recombination spectrum of stars and planetary 09 p1418 N68-18648 Spectrophotometry of galactic nebulae internal pacity and internal mass structure of HII emission re-APCRL-68-0078] 16 p2754 N68-27023 Atomic energy level spe lanetary nebulae ctrum of neutral belium in 16 p2755 N68-27186 PLANETARY ORBITS Lindstedt method applic periodic orbit natural fami problem of three bodies [D1-82-0651] ation to expand analytically lies of first kind in restricted 04 p0573 N68-13035 Gravitation theory - weight applied to planetary rotation in [REPT.-67-27] nt growth of particle mass in solar orbits 07 p1078 N68-16255 Topological problems of zudiacal light, inner planet bits, and sirgiow phenomena 16 p2760 N68-27490 Orbit determination of planetary artificial satellites of planetary gravitational fields and planetary gravitati [NASA-CR-95575] 17 p2969 N68-28838 PLANETARY RADIATION Equations, charts, and analysis to calculate theoreti-cal temperatures of thin film solar cells in earth orbit [NASA-TN-D-4331] 05 p0754 N68-14270

Uncertainty analysis for designing calorimetric ex-eriments, and equations for measuring properties of NASA-TN-D-43541 07 p0997 N68-16529 PLANETARY SPACE FLIGHT U INTERPLANETARY FLIGHT

NETARY SPACECRAFT INTERPLANETARY SPACECRAFT PLANETARY SURFACES
NT MARS SURFACE

Photographic analysis of planetary surfaces and at-mospheres [AFCRL-67-0504] 03 p0413 N68-12054 Roving vehicle motion co tary and lunar exploration [NASA-CR-92643] etroi for unmanned plane-06 p0915 N68-15246 Sampling requirements for in situ geological and iological analysis of planetary surface rocks by un-[NASA-CR-92749] 07 p1080 N68-16557

Mathematical model of Martian atmosphere and pur-face characteristics based on Mariner 4 and earth-based thermal, spectrographic, photographic, and radar data (NASA-TM-X-53668) 07 p1083 N68-17085 X ray diffraction is n design for he

and planetary explor [NASA-CR-93665] 09 n1427 N68-19361 Development, and ex-rotating wire break sams [NASA-CR-93678] of sieve sampler, and lanetary soil probing 09 p1428 N68-19394

Detection and quantita ydrogen on planetary and h uve determination of mar surfaces by neutron Capture gamma rays 14 p2348 N68-25553 for measuring reflection Pulse-type radar instrum pefficients of planetary

(NASA-CR-87661) 15 p2465 N68-25677 Microbial exposure prob from fractured materials of [NASA-CR-94969]

15 p2559 N68-25978 16 p2611 N68-27880

nurface 19 p3364 N68-31377

dary layer instability applied to planetary [NASA-CR-86714] 21 p3770 N68-34264 Thermal regime and radio em n of Mero NASA-TM-X-61185] 21 p3771 N68-34307 Covariance function of elevations on cratered pla tary surface [NASA-CR-97085] 22 p3961 NASA-Sta 22 p3961 N60-35641 bution of elevations on a cratered plane [NASA-CR-97086] 22 p3962 N68-35689 Planetary surface imaging using superposition odels derived from bistatic radar data 23 p4020 N68-36676 que for sampling surface improved agar spray to [NASA-CR-97349] 24 p4203 N68-37871

Planetary temperatures of he at wavelength of 8.6 mm chitain [AFCRL-67-0409] d by radiometry 02 p0268 N68-11774 09 p1424 N68-19192 Martian tropospher [NASA-CR-1043] Thermal regime and radio emission of Mercury NASA-TM-X-61185] 21 p3771 N68-34307 PLANETOCENTRIC COORDINATES
U GEOCENTRIC COORDINATES PLANETOLOGY

planetology, celestial Three body problem, schanics, and studies of sun 08 p1238 N68-17598 iology, and planetol 23 p4163 N6B-36551

LANKIS

AT EARTH (PLANET)

NT JUPITER (PLANET)

NT MARS (PLANET)

NT MERCURY (PLANET)

NT NEPTUNE (PLANET)

NT PLUTO (PLANET)

NT SATURN (PLANET)

NT URANUS (PLANET)

NT VENUS (PLANET)

Optical and radio artro er views of planets, stars, 03 p0413 N68-12087 craters, plans

Observations of solar flares, hunar ad intergalactic media 06 p0907 N68-15027 Advances during 1968 in a nospheric sciences, radio at stronomy, exobiology, ad solar physics, and NASA-SP-155 06 p0913 N68-15748

Recursive formulation to ca about axially-symmetric planet [ESRO-SN-74/ESDAC/] 13 p2153 N68-24133

Soviet-bloc news reviews and abstracts of research 14 p2343 N68-24531

Multicolar electron (NASA-CR-94803) netry of brighter planets 15 p.2361 N68-26604 Redar investigations of so lar system planets 16 p2756 1668-27297

NASA-TM-X-6 [236] 21 p3773 N68-34696 ORMS ARROW WINGS

ARROW WINGS
CARET WINGS
CARET WINGS
INFINITE SPAN WINGS
RECTANGULAR PLANFORMS
RECTANGULAR PLANFORMS
RECTANGULAR WINGS
SWEPTBACK WINGS
VARIABLE SWEEP WINGS
WING PLANFORMS

hydrofolis 64 p0495 N68-13315 NSRDC-23901 10 -1515 N

on of gust of wind on thin wing of art [TIL/T-3760]

SI

m

PLA

TL.

P) E [1]

(L

top

COR [AF

ror :

21 p3746 N68-33699

02 p0250 N68-11046

[NASA-CR-90296]

Supplementary information for computer program edicting lifting pressure and camber shape of com-site planform in subsonic flow posite planform in subsonic NASA-TN-D-4427, SUP.] 19 p3194 N68-31515 Numerical methods for lifting surface analyses of cir-19 p3196 N68-32042 PLANIMETRY U AREA U DIMENSIONAL MEASUREMENT PLANKTON Planktonic algae used as agent of self-purification of contaminated waters
[FTD-MT-66-13] 01 p0009 N68-10198 Analog computer modelli lation dynamics of estu-zooplankton deling of annual cycles in popu-estuarine phytoplankton and acoplankton [BNWL-485] 05 p0609 N68-14258 Suspended matter and plankton distribution in northwestern part of Indian Ocean

14 p2248 N68-24960 Underwater vehicles and research, ocean bottom re-lief and water temperature, and plankton species 17 p288Z N68-29453 Ecology of phytoplankton in coastal waters of North 20 p3468 N68-32491 IRTS-41311 PLANNING NT AIRPORT PLANNING Probabilistic model for planning factor and evalua-on procedure in allocating aircrews to squadrons RM-5385-PR] 01 p0017 N68-10734 Long-term planning of socio-economic and acien-tific-technical development [JPRS-43352] 01 p0155 N68-10773 Public planning for national space program in section of Vietnam contilities. [NASA-CR-93356] . 08 p1263 N68-18120 PLANOTRONS OTRONS
BACKWARD WAVE TUBES
CATHODE RAY TUBES
CESIUM DIODES
COLD CATHODE TUBES
GAS DISCHARGE TUBES
IGNITRONS
IMAGE ORTHICONS
IMAGE TUBES
IMAGE TUBES KLYSTRONS PHOTOMULTIPLIER TUBES PHOTOTUBES
THERMIONIC DIODES
THYRATRONS TRAVELING WAVE TUBES VIDICONS Particle accelerator structures, power sources, accelerator control and instrumentation, accelerator physics, and project scheduling and facilities planning [LA-3772-MS] 09 p1324 N68-19373 Development of metal capillary planar cathode for grid controlled tubes
[BMWF-FB-W-68-40] 22 p3849 N68-35829 PLANT BOOTS Germ-free seeds, seedlings, plants, tissues, and cell lines for lunar receiving laboratory, including algal and vascular plant systems [NASA-CR-92238] 21 p3638 N68-34779 PLANTS (BOTANY)
NT ACTINOMYCETES
NT ALGAE NAME OF STREET AUTOTROPHS BLUE GREEN ALGAE CHLORELLA NT NT NT ESCHERICHIA EUGLENA FUNGI HYDROGENOMONAS NT LEAVES
LICHENS
MICROSPORES
NITROBACTER
SACCHAROMYCES
SCENEDESMUS
SPORES NT NT NI SPORES STAPHYLOCOCCUS STREPTOCOCCUS STREPTOMYCETES TOBACCO TREES [PLANTS] WOOD NT

NT YEAST Cobalt 60 gamma radiation of male white mice to determine ability of auxin and antiviral agents to provide radiation protection [NASA-CR-91540] 04 p0455 N68-13304 Space station greenh e design concept for increasing plant produ [JPRS-43943] 05 p0608 N68-13920 Annual review of research in ches [UCRL-17520] 05 themical biodynamics 05 p0626 N68-14606 Carbon dioxide fixation rates in spinach leaves and chloroplasts prepared from spinach leaves 05 p0611 N68-14614 Sources and sinks of carbon dioxide in corn crop as-used by momentum balance - energy budget at earth surface (ECOM-2-68I-11 09 p1278 N68-18375 Role of growth stim and nucleic acids on action mechanism of phytochron [NIC-TRANS-2317] 09 p1278 N68-18433 Radiation effects in plants 09 p1285 N68-19370 Theoretical radiation physics, radiation effects in ter-restrial ecology, radioactive materials, radiobiology, radiation measuring instruments ORNL-4168] 10 p1473 N68-19653 Radiation absorption in plants, and animals, and radio suclide cycle in terrestrial ecology 10 p1473 N68-19654 Plant perception of gravitational and centrifugal forces and light stimul [ANL-TRANS-545] 11 p1636 N68-21387 Higher plants for food, water, and air regeneration in closed ecological systems [JPRS-45277] 12 p1829 N68-22573 Micrometeorological field studies on energy, mo-mentum, and mass transfer above vegetative surfaces [ECOM-0447/E/-F] 20 p3521 N68-32729 Cultivating plants for closed ecological systems dur-ing long manned space flights ing long manne [JPRS-46306] 20 p3407 N68-33269 PLANTS (INDUSTRIES)
U INDUSTRIAL PLANTS PLASMA ACCELERATION Magnetoplasmadynamic thrustor for space applica-[NASA-CR-93139] 07 p1073 N68-16396 Acceleration mechanism of plasma outflow from sun INASA-CR-949151 15 p2548 N68-25687 Toroidal plasma acceleration [FTD-MT-67-81] by electrical field 15 p2531 N68-26481 Maximum acceleration netic and electrical fields [FTD-HT-66-761] of plasma in crossed mag-19 p3341 N68-31486 plasma acceleration and gas Pulsed electromagnetic 20 p3555 N68-32550 Diagnostics and interpretation of acceleration mechanism in magnetop [NASA-TM-X-60478] 21 p3747 N68-33838 PLASMA CLOUDS Photographic, magnetic, and spectroscopic study of ortex spokes in coaxial and parallel-plate plasma ac-21 p3747 N68-33863 Plasms density impedance acceleration in crossed fields [FTD-HT-23-819-67] e characteristics in plass 24 p4325 N68-38261 ASMA ACCELERATORS
NT COAXIAL PLASMA ACCELERATORS Numerical analysis of electric current and potential istributions in linear Faraday plasma accelerators NASA-TN-D-4239] 01 p0128 N68-10502 [NASA-TN-D-4239] Magnetohydrodynamic energy converters, and elec-tric plasma acceleration - arc currents, electrodeless plasma generators, supersonic jet flow dynamics, and plasma generators. [LA-3749] plasma engines DLR-MITT,-67-171 05 p0721 N68-13924 Performance of electron with conical discharge coil etic plasma accelerator 05 p0722 N68-13927 Spectroscopic measurements on electron tempera-ture and emission intensity for electromagnetic helium plasma accelerator 05 p0722 N68-13928 Kinetic equation for plasma with electromagnetic inric plasma engine models setic acceleration 05 p0722 N68-13929 Radiation-cooled and water-cooled magnetoplas-madynamic thrustors tested in 10 to kW power range with 1000 to 5000 sec specific impulse [NASA-CR-72345] 65 p0899 N68-16067 PLASMA CONDUCTIVITY Plasma kinetic equation applied to high frequency

Probe to measure velocity distributions in exhaust of steady-state plasma accelerators [NASA-CR-66550] 07 p1059 N68-16527 Current sheet transition from propagating to quasi-steady blowing modes in pulsed electromagnetic gas acceleration [NASA-CR-93542] 09 p1402 N68-18930 Design and performance of radio frequency plasma source for atmospheric entry simulation [ARL-67-0281] 11 p1762 N68-21010 Heavy ion plasma accelerator for highly stripped ion production [AVCO-EVERETT RES. REPT.-288] 11 p1679 N68-21014 Physical properties of plasma produced in discharge of plasma accelerate [AFOSR-68-0320] 13 p2129 N68-24201 Monochromator measurements of ion velocities in rod plasma injector to determine density and temperature of electrons and ions [P-383/XVIII/PP] 18 p3147 N68-30815 Maximum speed wind tunnel for reentry measure-[NASA-TT-F-11886] 20 p3456 N68-33024 Plasma acceleration by electromagnetic surges - ap-plication to plasma wind tunnels and propulsion (BMWF-FB-W-68-38) 21 p3749 N68-34199 Electrical conductivity of inductive helium plasma measured as function of time and location [DVL-761] 22 p3944 N68-35568 Pulsed MHD accelerat [TR-0158/3240-10/-10] or for wind tunnel use conducting gas in magnetic field [FTD-HT-63-458] 23 p4040 N68-36405 Induction flow velocity and electric current distribu-tion in acceleration mechanism of mag-metohydrodynamic plasma accelerator [AVSED-0044-68-CR] 24 p4325 N68-38215 24 p4325 N68-38215 PLASMA ARC WELDING Feasibility of developing plasma electron beam weld-ing system for earth orbiting vehicle [NASA-CR-98040] 24 p4260 N68-37603 PLASMA CHEMISTRY Excited particles and role in elementary processes of radiochemistry and plasma chemistry [FTD-MT-65-341] 02 p0176 N68-11416 ion exchange resins prepared from bead copolymers of styrene and divinylbenaene and focused laser experi-ments to determine plasma characteristics [NYO-3644-11] 04 p0467 N68-13361 Soviet research in plasma chemistry, nuclear chemistry, radiochemistry, photochemistry, and chemistry of ionosuphere and shock waves [JPRS-4048] 05 p0627 N68-14751 Heat sources for high temperature furnace produc-tion of alkali plasma in thermodynamic equilibrium [RT/FU/67/9] 10 p1572 N68-19521 Effects of magnetic plasmapause on VLF wave phenomena based on ground and satellite data 08 p1172 N68-17980 Gravitational instability of interstellar medium and 21 p3769 N68-34223 PLASMA COMPOSITION Mass composition, energy spectrum, and purification of plasma generated from titanium source [CTO-352] 01 p0119 N68-10877 Numerical analysis on high beta toroidal plasma 09 p1401 N68-18531 Magnetohydrodynamic boundary layers studied with existing difference in electron and heavy particle tem-NASA-CR-94537] 13 p2124 N68-23191 Properties of plasma flow in magnetic field [CLM-R-72] 14 p2322 N68-24683 Transvense energy of hydrogen plasma discharges and existence of high temperature electrons in plasma [NP-TR-1617] 14 p2324 N68-24911

X

of

27

30

110

ion

114

rge

101

in

115

124

90

168

105

of

99

22

115

56.

503

of

116

ers eri-

161

751

121

ave

980

223

177

121

191

183

111

599

acy

Coulomb collision effe ductivity of argon plasm d with cesium ions 02 p0254 N68-11568 d atmos Electrical con ough ring anodes 03 p0402 N68-12513 ARL-67-01421 Amplification and ma turbulent conducting fla [NASA-TM-X-60924] 09 p1402 N68-19005 tics in visible spectadiation absorption ch m studied in argon plass 10 p1573 N68-19808 d infinite conductivity hydrodynamic genera-Plasma stability for fini ed energy balance in ma [AFOSR-68-0236] 10 p1573 N68-19893 asurement of conductives accelerated by MF elety and velocity of dense tromagnetic field 12 p1946 N68-22164 ONERA-TP-543] Conductivity of partially velength limit red plasma in long 13 p2125 N68-23462 Diffusion and conductivity in partially ionized gas ature with different component temperatures it temperatures 16 p2736 N68-27577 Propagation of helicon waves under conditions of onlocal plasma conductivity 20 p3564 N68-32532 Cross field transport in ma beta collision dominated plasm [SIT-2813-46] netically confined low 20 p3558 N68-33144 teration used to solve warm plasma 22 p3938 N68-34846 Electrical conductivity of is uctive helium plasma 22 p3944 N68-35568 [DVL-761] Anomalous high frequence plasma due to particle-wave [LGI-68-11] ductivity in turbulent 23 p4143 N68-37006 PLASMA CONTROL Low frequency stability of plasma confinement by rotating field [LRP-27/66] 03 p0401 N68-12500 Plasma confinement netic field [INR-836/XVIII/PP] herical multipole mag-04 p0553 N68-12997 Numerical analysis on negative application of helical multimagnetic field [IPP3-61] ive plasma confinement polar fields on toroidal 07 p1064 N68-17097 nsional plasmas 08 p1218 N68-17638 [LGI-67/27] Heating and con nas by fast magnetic compression in theta pi [NP-16754] 09 p1401 N68-18572 Low frequency stability of planing magnetic fields [NASA-TT-F-11622] mas confined by rotat-12 p1944 N68-21923 Plasma injection into clos ble helix field [NASA-TT-F-11631] ed magnetic trap with dou-12 p1948 N68-22330 Time dependence me ment in open end system (UCRL-70656) nts of plasma contain-12 p1949 N68-22414 Interaction of charged partic es with plasma in a stel-14 p2321 N68-24459 (NASA-TT-F-11629) Soviet research on achie conuclear reactions, and te ag, and confining plasmas g slow controlled ther-niques for creating, heat-14 p2322 N68-24608 eneral atomic tornidal oc-Plasma confinement in a (GA-8141) 14 p2322 N68-24621 Properties of toroidal p with crossed magnetic fields [AFCRL-68-0140] 15 p2532 N68-26669 Equations for theta p hydromagnetic wave propaga fined plasma h characteristics of n in magnetically con-16 p2737 N68-27817 ic mirror cusp plasma (AFAPL-TR-67-91) 16 p2738 N68-27906 Current and proposed exper or confinement of fusion plan ents on magnetic mir-[TID-24254] 17 p2950 N68-29063 Trapped magnetic field syst plasma control and confineme [CTO-436] n for high temperature 17 p2951 N68-29293 Feasibility of power by nuc (ORNL-TM-2204) 18 p3143 N68-30162

NP-174531 netic well [UCRL-70869] (FTD-MT-67-85) PLASMA CYLINDERS (CTO-477) (NASA-CR-97189) PLASMA DECAY Velocity and at and compression hydrogen plasma [NP-16893]

tion of electron-ion og rare gas plasma by [NASA-CR-89819] 18 p3084 N68-30330 16 p2735 N68-27401 Axial current in decay rate behavior [NP-17439] c field heating and 19 p3338 N68-31047 (IBJ-912/XVIII/PPI 19 p3345 N68-32182 afterglow dec 18 m3132 N68-30217 plasma gradients for in-Fabry-Perot interferome n technique for men aving highly ionized 20 p3477 N68-32493 19 p3338 N68-31011 Plasms preferating for subsequent magne [NASA-TN-D-4708] le theta pinch device PLASMA DENSITY 20 p3559 N68-33372 d for radial density dis-Decay rates of energetic deuterium plasmas in mag-01 p0118 N68-10613 21 p3750 N68-34368 [NASA-TM-X-63046] Criteria for stab mirror confined pla [UCRL-70966] electrostatic modes in rofiles obtained in es-coaxial accelerator 03 p0401 N68-12360 manels for hypersonic Plasma density a haust stream of repo [AFOSR-67-2364] 21 p3750 N68-34402 Magnetic mirror through warm ion distri [UCRL-70681] control optimization 21 p3751 N68-34472 flow at plasma des (DLR-FB-67-66) 04 p0490 N68-13358 lonization gauge with ele for electron confinement [NASA-CR-96818] atic quadrupole lenses ity by refractio 21 p3693 N68-34487 05 p0724 N68-14138 Toroidal stellarator magnetic field [NASA-TT-F-11630] c trap with double coil 22 p3942 N68-35321 Negative V system with ment of high temperature (IPPJ-69) op well torus for confine-06 p0888 N69-15199 22 p3944 N68-35619 for confining hot plasma by [TID-24513] nmary data on i dy of Astron concept 23 p4112 N68-36094 lity at low density. Circuit protection for control magnetic mir-07 p1058 N68-16313 on of circularly polarized waves in mag-23 p4140 N68-36483 Electrostatic wave is plasma pesetrated by lit [SRRC-CR-68-33] es in thermal cesium frequency [IPPCZ-74] 07 p1059 N68-16455 23 p4140 N68-36521 cropulation pearl dispersion of for behavior of magnetuspher Toroidal plasma confi ation by injection of fast 23 p4142 N68-36782 UCRL-TRANS-102231 08 p1172 N68-17974 Pulsed plasma adiab seformation MATT-TRANS-50] pression through jacket al fringe shift gas to 11 p1709 N68-20699 23 p4144 N68-37171 lonization losses and effetime in magnetic mirror tra (NP-TR-1677) ses of plasms density particle behavior, and on electron containment 24 p4324 N68-37913 detector effici [CLM-R-76] 12 p1950 N68-22731 Pulsed thern sion of dense pi [IIF-LA-4] for adiabatic compres-Effect of multiple reflemicrowave interferometer electron density [IPPCZ-70] ens on accuracy of surements of plants 13 p2125 N68-23373 scedures and properties a charge densities and 07 p1056 N68-16283 Stationary state of pi potential fields [IPPCZ-66] (NASA-CR-72406) 13 p2128-N68-23989 07 p1059 N68-16456 Plasma density and interferometric metho [CEA-R-3125] on in waveguide partially filled with tial magnetic field Wave propagation in wa plasma in infinite axial mag TR-0158/9220-02/-2] 14 p2323 N68-24835 n study in toroidal mag-Adiabatic plasma conetic field [MATT-TRANS-52] 10 p1573 N68-19942 ion frequency in cylindrical plasma column sur-ounded by helix 14 p2324 N68-24986 Plasma densi radio frequency SC-RR-68-30 14 p2325 N68-25056 13 p2123 N68-23130 Cascade arc chambers for high power cylindrical study plaama de (UCRL-70655) 18 p3056 N68-30378 14 p2327 N68-25455 Stability of cylindrical asma consisting of elec-High density plan [AROD-4832-9-P] laser interferometer 16 p2737 N68-27808 23 p4141 N68-36689 s for disgnosing p ps tube - plasma o small dismeter dis ments on torsion tion in decaying 17 p2951 N68-29401 01 p0118 N68-10763 nergy and He place harge with comme (CTO-446) ion for weak collision is wave decay 02 p0255 N68-11662 18 p3144 N68-30264 ity and Aliven wave NASA-CR-963[3] INASA-CR-932531 08 p1220 N68-17892 20 p3558 N68-33240 cular ions and molecu-rare games 13 p2126 N68-23593 [LA-DC-9327] 20 p3559 H68-33438 nce in p arge waves in instrop-

16 p2735 N68-27322

21 p3747 N68-33899

5

1

6

Multiple scattering of electromagnetic waves in un-derdense plasma, and transport equation for calculat-ing radar backscatter
[IDA/RQ-68-8936] 22 p3942 NAS-9522 Optical interferometry for measurement of plasma [FTD-MT-24-83-67] 15 p2530 N68-26398 Plasma research and diagnostics, turbulent and Hartmann flow, electrostatic probes, argon plasma, electron transport and energy and related topics
[AFOSR-68-0859] 15 p2531 N68-26537 Neutral particle collision effects on excited molecule opulation density and electron-ion recombination in decaying helium [CEA-R-3450] 23 p4143 N68-36998 CEA-IC-3450]
Numerical calculation of dense plasma production laser irradiation of solid hydrogen block
PP-3/741
24 p4326 N68-38329 Pulse transformer, water capacitors, and gaseous scharge production for plasma studies in magnetic [AFCRL-68-0210] 15 p2532 N68-26671 [AFCRL-68-0210] 15 p.2532 N68-26671 lon velocity distribution, neutron spectra, flux, and anisotropy, and neutrons from d-d reactions in hot des-tractions used for plasma diagnostics. [LA-TR-67-113] 17 p.2950 N68-29162 PLASMA DIAGNOSTICS Microwave and Michelson interferometers for high seed measurements in gas dynamics and plasma diag-Microwave resonant cavities for diagnosing plasma contained in mercury discharge tube - plasma density profile determinations across small diameter discharge 01 p0121 N68-10955 Fluid dynamic turbulence techniques for analysis of plasms fluctuations NASA-TM-X-523711 02 p0251 N68-11059 17 p2951 N68-29403 Dispersion model for calculating electron density and collision frequency of low pressure argon plasma discharge in microwave region [DLR+B-57-62] 02 p0252 N68-11156 Computer program for reduction of spectrographic data from cylindrical plasma column [ARL-68-0003] 18 p3143 N68-30181 Microwave interference correlation radiometry for auma diagnostics Flush mounted electrostatic probes for reentry boundary layer flow electron density measurements [TR-0158/3240-20/-4] CU-EE-1021 19 p3339 N68-31307 Q-machine plasma device to determine spatial dis-ibution of magnetically confined, quiescent potassi-03 p0341 N68-11991 Physical processes in magneto-plasmadynamic arc [NA\$A-CR-91529] 04 p0554 N68-13516 SIT-2813-45) 19 p3343 N68-31898 Plasma electrons and ions behavior in presence of cantverse electric and magnetic fields Feasibility of using atomic elective effects in plasmas ic beam scattering to detect 05 p0726 N68-14971 IN68-31 20 p3556 N68-32742 Theoretical evaluation of microwave diagnostics for ation of acceleration Diagnostics and interpr dielectric plasm (ISL-T-12)66) mechanism in magnetopla [NASA-TM-X-60478] ynamic arc 21 p3747 N68-33838 07 p1055 N68-16157 SL-T-12/60) Plasma diagnostics in energy conversion 08 p1219 N68-17809 Current sheet velocities measured in coaxial plasma ccelerators with and without refractory insulator Moliere theory of multiple collisions applied to scat-tering of electron beam injected into plasma [AFIT-TR-67-16] 08 p1219 N68-17872 [NASA-CR-96774] 21 p3751 N68-34518 Microwave reflection and transi for inhomogeneous plasma diagnosi sion coefficients Stability of hydromagnetic plasmas and behavior of ionized gases in magnetic field under shock condition [SIT-P207/12/67/] 09 p1399 N68-18335 nder shock condition 09 p1399 N68-18335 22 p3939 N68-34956 Theory of electrostatic probes in fully-ionized plasmas in strong magnetic fields
[AFFDL-TR-67-190] 22 p3917 N68-35218 Diamagnetic signals from plasmoid injected into uniform magnetic field for plasma diagnostics [REPT.-851/18/PP] 09 pl401 N68-18537 22 p3917 N68-35218 Studies of electron plasma in magnetic mirror field PPJ-671 22 p3944 N68-35533 Heating and containment of plasmas by fast mag-netic compression in theta pinch [NP-16754] 09 p1401 N68-18572 Laser interferometer and heterodyne system for cesi-um plasma diagnostics [NASA-TM-X-1652] 22 p3886 N68-35593 Experimental arrangements techniques in hot plasma research [INR-P-846/XVIII/PP] 22 p3886 N68-35593 and diagnostic Plasma compression studio high frequency waves [MATT-TRANS-59] ed by reflection of super-09 p1402 N68-18942 22 p3946 N68-35893 High power radio frequency plasma heating and wave propagation near fundamental and harmonic ion cyclotron frequencies Langmuir probe used to determine electron density nd temperature of plasmas generated by mercury arc [HDL-TR-1394] 23 p4137 N68-36157 09 p1403 N68-19121 Fractional fringe shift gas laser interferometer [LA-3730] 11 p1709 N68-20899 Argon plasma arc for qua analyses of mixed compounds itative spectrochemical 23 p4008 N68-36388 Small angle electron scattering applied to plasma Guided electromagnetic waves propagating along lossless dielectric rod immeraed in inotropic and uniaxi-al plasmas determined for applications to plasma diag-[AFIT-TR-68-4] 11 p1764 N68-21508 Electromagnetic wave propagation and diffraction in nostics [NASA-TN-D-4866] 23 p4144 N68-37237 NASA-CR-943611 12 p1948 N68-22366 Plasma diagnostics using holography [LA-TR-68-23] 24 p4324 N68-37914 Applications of light scattering to plasma diagnostics [ORO-3393-3] 12 p1951 N68-22897 Ruby laser produced beryllium plasma studied by cinematography, visible and ultraviolet spectroscopy, interferometry, and charged particle detection [CEA-R-3296] 12 p1952 N68-22998 Design characteristics of electrostatic probe for [NASA-TT-F-11964] INAL-TN-51 13 p2126 N68-23719 PLASMA DIFFUSION Interaction of microwave radiation with shock ionized flow fields, and methods for measuring deteriorative effects of plasma sheath on aerospace vehicles (SU-IPR-114) 13 p2029 N68-23936 Sensitive laser diagnostic procedures and properties gaseous plasmas at various charge densities and

13 p2128 N68-23989

Plasma diagnostic techniques and generation use in plasma test facility [AFFDL-TR-68-21] 13 p2129 N68-24048

Physical properties of plasma produced in discharge of plasma accelerator [AFOSR-68-0320] 13 p2129 N68-24201

Plasma production and illetime, collision-induced in-ability theory, microwave radiation, magnetocon-octance, and other plasma physics studies 13 p2130 N68-24251

Techniques, materials, and possibilities of holography in plasma diagnostics [NP-TR-1679] 24 p4324 N68-38050 Noncylindrical Z pinch in currents above one mil-24 p4327 N68-38355 Dispersion relations and stability analyses for beam asma interactions at symmetric and transverse modu-03 p0403 N68-12607 Anomalous diffusion in linear E-type RF discharge [ORO-3516-2] 05 p0726 N68-14821 Boundary effects for diffu ong uniform magnetic field 11 p1763 N68-21254 Screening of high-density pl penetration in closed and open-[REPT.-68-06] asma from neutral gas mided reactor systems 12 p1947 N68-22189 na instability with various degrees of non-encity and plasma diffusion across magnetic field (IIF-LA-9) 12 p1949 N68-22547 od for dispersion relation of Calcula homogeneous pla (CEA-R-3413) 12 p1949 N68-22704

Propagation of electron cyclotron waves and effects of low frequency noise in collisionless plasma [NASA-CR-94430] 12 p 951 N68-22847 Transverse diffusion and optical properties of con-(SIT-2813-44) 16 p2740 N68-28210 ethod for diffusion of liquids in alloy plasma arc analysis [AFML-TR-67-400] 19 p3232 N68-31930 Ignition of toroidal plasma undergoing Bohm diffu-[UCID-15334] 21 p3750 N68-34377 Expressions for cross sections required to calculate inelastic transport properties of plasmas - inelastic difficult of the control of the co Plasma statistics computer aboard Explorer 35 [NASA-TM-X-63339] 22 p3844 N68-35770 Pressure dependence of plasma diffusion across uniform magnetic field [IPPJ-70] 22 p3945 N68-35798 PLASMA DIODES Digital computer simulation of plasma diodes [ECOM-02269-F3] 03 p0401 N68-12343 Electron bombardment system for Q device - design concepts and performance tests [ORO-3405-17] 12 p1949 N68-22710 Electron temperature distribution in fully ionized nd electrically neutral plasma contained between two tage parallel electrodes of infinite length ETIFIMARI ite length 17 p2951 N68-29402 Plasma reaction kinetics, and electron energy and ensity in plasma studied for direct conversion of ther-ionic nuclear flusion energy in plasma diodes [JMR-767] 18 p3005 N68-30443 (GMR-767) Simultaneous excitation of electron and ion plasma scillations in plasma diode [LGI-68-5] 19 p3337 N68-30905 Simulation and analysis of low voltage arc mode in asma diodes 21 p3748 N68-34142 PLASMA DYNAMICS Energy convection effects on nonequilibrium plasma arrent distribution 02 p0252 N68-11221 [R67SD61] Shock wave luminescence in coaxial plasma accelerator and srowplow effects
[NAL-TR-135] 02 p0253 N68-11231 Dispersion relations and stability analyses for beam lasma interactions at symmetric and transverse mode-[SU-IPR-114] 03 p0403 N68-12607 Research in general physics, plasma dynamics, communication science, and cybernetics - radio astronomy, optical and infrared spectra, neural nets, information theory, and molecular beams [QPR-87] 04 p0545 N68-13461 04 p0545 N68-13461 Radio frequency absorption, bremsstrahlung effects and excitation of radial diffusion waves in plasma 04 p0554 N68-13469 Nuclear fusion processes for plasma generation, and asma diagnostics 04 p0554 N68-13470 Magnetohydrodynamic energy converters, and elec-tric plasma acceleration - arc currents, electrodeless plasma generators, supersonic jet flow dynamics, and plasma engines [DLR-MITT.-67-17] 05 p0721 N68-13924 Aerodynamic sensors for measuring thermodynamic haracteristics of supersonic argon plasma jet 05 p0723 N68-13933 Irradiated plasmas in magnetic field {LGI-67/11} 05 p0724 N68-14179 Effect of finite ion Larmor radius on plasma instabili-05 p0725 N68-14545 (RISO-158) One dimensional analysis of magnetoplasm dynamic arcs with nonequilibrium ionization [NASA-CR-91685] 05 p0725 N68-14559 Numerical study of collisionless compression of lasma with anomalous friction 05 p0725 N68-14767 JPP-1/721 Kinetic equations for homogeneous microscopic tur-bulence of one dimensional plasma [MPI-PAE/PL-4/67] 05 p0726 N68-15005 Magnetohydrodynamics, magnetized plasma chavior, and celestial mechanics in relation to origin

Research projects on physical sciences, plasma dynamics and physics, and communication sciences and engineering [QPR-84] 06 p0801 N68-15884

(NASA-CR-72406)

EX

lecti

847

con-

210

of

930

iffu-

377

dif-

770

343

rign

710

102

143

ma

42

21

31

07

m-ny,

61

cts

60

70

24

ric

33

li-

45

ik

59

of

57

r-

15

13

INASA-TT-F-11964]

24 p4327 N68-38355

on parametric coupling between drift waves in plasma [NASA-CR-92566] 06 p0891 N68-16007 electromagnetic wave ment, field theory, laser onducting film, informa-Microwave research propagation, electronic e-optics, plasma physics, se-tion theory, and computer optics, plasma physics, s tion theory, and compute [PIBMRI-R-452.32-67] 07 p0978 N68-16927 tical model for turbulence development, and disintegration in plasmas 08 p1218 N68-17703 Dissipation mechanism of shock wave in rarefled tur-ulent plasma 08 p1218 N68-17705 Strong blast waves and dynamics of laser-induced plasmas investigated in high pressure gases [AFOSR-68-0232] 09 pl349 N68-18431 Solution of Boltzmann, and rate equations for boun electronic states in moneguilibrium mag states in electronic states in netohydrodynamic plasma [NASA-TM-X-52190] 09 p1403 N68-19141 Interference loss measur vironment of plasma arc jet [AFOSR-68-0004] sts in vacuum tank en-10 p1573 N68-19862 Summary of research activities physics, plasma dynamics, and co formation theory ies in various areas of [QPR-88] 11 p1749 N68-21810 asma dynamics studies dealing with gaseous elec-ics, nuclear fission, hot electrons, laser radiation, energy conversion 11 p1765 N68-21812 Characteristics of digital controllable high brightness asma display for airborne systems 12 p1948 N68-22314 Computer program for analyses of plasma density of velocity distribution, single particle behavior, and detector effici [CLM-R-76] 12 p1950 N68-22731 Hydromagnetic equilibriu n of thin skin, finite beta (LA-3778) 12 p1950 N68-22801 Adiabatic plasma com tic field on study in toroidal mag-[MATT-TRANS-52] 14 p2324 N68-24986 Electrical, magnetic, plasma effects on properties of Hall pl [DLR-FB-67-84] a dynamic, and geometric lasma accelerator 16 p2640 N68-28201 Kinetic theory for re nt four-wave processes in sive systems turbulent ensemble of dispersive systems [NASA-CR-95384] 17 p2926 N68-28588 Kinetic theory of stable and weakly unstable plasma 18 p3140 N68-29595 pehavior of electric shock tube plasmas
[AFOSR-68-1034] Dynamics of bounded one dimensional plasma [NASA-TN-D-4651] 18 p3143 N68-30031 Research on netohydrodynamics, ioi dary layer flow [AFOSR-68-1196] plasma dynamics, mag-sizing shock waves, and boun-18 p3145 N68-30614 Computed Stark constants and cesium spectral line shift measurements in direct current plasma are [FTD-HT-66-649] 19 p3341 N68-31460 Two dimensional plasma rotation in theta pinch caused by transverse magnetic fields [IPP-1/81] 20 p3859 N68-33449 20 p3559 N68-33449 Photographic, magnetic, and spectroscopic study of vortex spokes in coaxial and parallel-plate plasma ac-21 p3747 N68-33863 INASA-CR-886051 Approximative calculations for plasma expansions in Laval nozzies [DLR-FB-68-36, PT. 2] 22 p3941 N68-35112 Plasma dynamics, Mach-Zender interferometers, bremsstrahlung fast scintillators, and theta pinch [STT-2582-25] 23 p4141 N68-36669 Spectroscopic analysis onequilibrium in radio frequ thermodynamic cy argon plusma 24 p4323 N68-37487 Research project summaries on plasma dyna ommunication theory, and microwave equipment 24 p4239 N68-37843 [QPR-90] Temperature, pre turbulent electric are [ARL-68-0067] nd flow measurements on 24 p4325 N68-38203 Noncylindrical Z p urrents above one mil-

Plasma jet motion through n magnetic field [FTD-HT-23-926-67] Analytical and experimental study of fluid mechanics of magnetically balanced electric arcs in supersonic eross flows [NASA-CR-96474] 20 p3560 N68-33592 24 p4327 N68-38365 20 p3560 N68-33592 PLASMA ELECTRODES Effects of electrode properties on surface border orditions in ionized gas flow 21 p3746 N68-33699 02 p0254 N68-11558 Diagnostics and interpret mechanism in magnetoplasmad [NASA-TM-X-60478] tion of accelerat High-intensity with electron on (IPP-2/64) 21 p3747 N68-33838 05 m0726 N68-1490R Simulation of solar vanetic field [NASA-CR-96710] on plane surfaces of tungsten crystals me (JUL-308-TP) Pluma 11 p1763 N68-21356 21 p3762 N68-34159 Electrode drag force r teractions of pulsed accel [NASA-CR-94579] nents in boundary in-Plasma acceleration by electromagnetic surges - ap-ication to plasma wind tunnels and propulsion 13 p2126 N68-23572 inter | p3749 N68-34199 PLASMA-ELECTROMAGNETIC INTERACTION High temperature plasms p idiation of lithium hydrides. reduction using laser ir-and plasma interaction Nonlinearity of electromagnetic wave pulses pa through plasma boundary with magnetic confiner 23 p4145 N68-37324 Radiation during scattering of charged particles on electromagnetic waves of isotropic plasma [FTD-HT-67-55] 02 p0255 N68-11597 PLASMA ENGINES Performance of azisymmetric plasma engine models refer thermal, or electromagnetic acceleration tic acceleration 05 p0722 N68-13929 ha engine cathode funcngnetoplasmas - effective n distributions 03 p0400 N68-12034 Electrical conductivity of m parameters for non-Maxwellia AFCRL-87-0528] Low pressure effects on pl tion at high velocity gas flow 05 p0723 N68-13936 Spectroscopic measurements on electron tempera-ture and emission intensity for electromagnetic helium plasma accelerator jets and other hardware for spacecraft aux-05 p0722 N68-13928 iliary electric propulsion [NASA-TM-X-61074] 13 p2143 N68-23321 crowave diagnostics for PLASMA FLOW
U MAGNETOHYDRODYNAMIC FLOW (ISL-T-12/66) 07 p1055 N68-16157 PLASMA PLUX MEASUREMENTS of lateral wave excitation on symmetrical variation 07 p1063 N68-16931 Ray optic analysis of lat-lasma half space with symme Properties of plasma flow in magnetic field (CLM-R-72) 14 p2322 N68-24683 Plasma flux measurem charged particle traps on [NASA-CR-95835] nts in vicinity of Venus by enera-4 spacecraft 18 p3159 N68-29926 Multiple stream method for instability analyses on 07 p1063 N68-16950 Spectral distributio collinional and collinio [NASA-CR-87760] bulence in plasma wit Microwave triggered ionized wave propagation in lasma filled waveguide Pations 21 p3747 N68-33899 '07 p1063 N68-16953 nd electric current distribu-mechanism of magduction flow velocity as stical model for turbulence development, and gration in plasmas netohydrodynamic plas [AVSSD-0044-68-CR] 08 p1218 N68-17703 24 p4325 N68-38215 urrent distribution on infinite, perfectly conducting ma aligned with magnetic field in anisotropic in-pressible plasma PLASMA FREQUENCIES Field equations for waves in inhomogeneous warm lasma with frequency near second harmonic of elec-on cyclotron frequency 10 p1573 N68-19807 ron cyclotron (REPT.-67-37) Research reviews on project radiation, antenna arrays, and de [APCRL-67-0567] cts in electromagnetic 01 p0119 N68-10787 10 p1496 N68-19843 hydrogen-like [EP-RR-17] Electromagnetic wave transmission through anisotropic plasma slab at arbitrary angles of incidence [RCA RES. REPT.-7-801-59] 09 p1402 N68-18855 gation near and above 11 p1759 N68-20812 Coupling between charged particles of plasma and diation field 11 p1763 N68-21286 Multicomponent perature plasmas s background plasmas [UCIL-70665] tabilities for high tem-12 p1948 N68-22294 ental studies in whistler seractions, and VLF emis-12 p1950 N68-22750 propagation, wave-passion generation [AFOSR-68-0219] cirect of inhomogeneous electron density and colli-sion frequency in cylindrical plasma column sur-rounded by helix 13 p2056 N68-23097 Circularly polarized microwa to magnetic field in laboratory p [NP-17341] ve propagation parallel 13 p2123 N68-23130 Conductivity of partially is wavelength limit 14 p2324 N68-24897 Theoretical and experimental correlation of yelotron harmonic wave propagation in warm mag-13 p2125 N68-23462 with electron plasma to [NASA-CR-89184] 15 p2527 N68-23760 (UCRL-70655) cy, and oscillations 14 p2327 N68-25455 Electron density growth in tially tenuous plasma in inear theory and Vlasov 16 p2734 N68-27182 17 p2946 N68-28391 Electron beam - el etic wave interactions ctric field and mag ma behavior in ac ele and power exchanges [NASA-CR-95704] 17 p2865 N68-29024 Generation of plasma waves described by dielectric ensor and computation of electric field in unbounded. [NASA-TT-F-11769] 17 p2946 N68-28449 plamatron for produc-oxides 19 p3285 N68-31792 High frequency electrodeless tion of pure silicon and silicon of [TVA-P-4198] (NP-17429) 17 p2950 N68-29042 Plasma instability onset and suppression in crossed ed geometry controlled by radial magnetic field near PLASMA GENERATORS

NT DUOPLASMATRONS

NT PLASMATRONS

NT SCYLLA [NASA-TM-X-61021] 18 p3142 N68-29902 Measured and calculated discharge values for electromagnetic gas inlet valves of plasma source [IPP-1/68] 02 p0251 N68-11155 [RM-419] 18 p3145 Ne8-30304 Amplification of sync [NASA-CR-96124] 19 p3341 N68-31633 Penning discharge is for field for collisionle [NP-16805] in inhomogeneous magnetic mir-ras plasma production 03 p0401 N68-12501 neraction of steady state cir-magnetic wave with cold line magnetic field 20 p3554 N68-32381

otor design trends 04 p0448 N68-13094

(FTD-HT-66-378)

5

PL.

ft ft

1/

(F

pi

di [F

IN IC

Nuclear fusion processes for plasma generation, and asma diagnostics Magnetically confined column of highly ionized argon or helium plasma [TR-0158/3220-20/-1] of strongly-turbulent microwave-he [MATT-580] 21 p3749 N68-34164 04 p0554 N68-13470 Magnetic field-stabilized high temperature arc for asma production 20 p3559 N68-33365 Digital storage plasma device for computerized thermal induction plasma [TR-0158/3220-50/-2] 05 p0723 N68-13931 (R-377) Thin, dense liners produced by sweeping heavy ion plasma by magnetic piston [LGI-67/12] 08 p1218 N68-17640 21 p3750 N68-34397 21 p3752 N68-34721 chiques for measuring positive ion heating of has produced by exploding wires 22 p3939 N68-34861 Mass spectroscopy of energy spectra of conical electrode plasma [FTD-MT-24-263-67] Nonequilibrium modes of operation to Nonequilibrium modes operation to Nonequilibrium modes operation to Nonequilibrium modes operation to Nonequilibrium modes 22 p3942 N68-35319 Efficiency estimates for conversion of focused laser radiation to X rays in hot dense plasma [TR-0158/3220-30/-4] Electron temperature and no plasma in nonseeded argon uilibrium ionizatio metohydrodynam eded argon mag Nonequilibrium electron mode for kilowatt range agnetoplasmadynamic generation of space power (TH/68-E-02) 22 p3945 N68-35781 22 p3943 N68-35383 ion of space power 08 p1/22 N68-17812 sma heating and diffusion in stochastic electric Reignition and thermodynamics of dark phase in actric wire explosion Specifications and performance evaluation of feed-back temperature control system for cesium plasma facility /Q machine/ [GGC/EE/67-11] 08 p1137 N68-17835 23 p4137 N68-36058 23 p4189 N68-36985 Sirius stellarator design characteristics, and plasma generation and heating arrangements [MATT-TRANS-45] 23 p4144 N68-37158 Sirius stellarator design characteristics, and plasma generation and heating arrange [MATT-TRANS-45] 08 pl157 N68-17835 23 p4144 N68-37158 Laser beam irradiation of solid particles for plasma PLASMA INSTABILITY
U MAGNETOHYDRODYNAMIC STABILITY Q machine calibration, and experiments in physics of aama waves and instabilities NYO-3578-71 09 p1403 N68-19050 24 p4323 N68-37738 PLASMA INTERACTIONS
NT PLASMA-ELECTROMAGNETIC INTERACTION Gas composition analysis for stationary coaxial stama injector [INR-861/XVIII/PP] 09 p1404 N68-19488 Operational and service life experience with Isar 1 IPP-4/63] Plasma oscillations, ionic wave propagation, electron beam-plasma interactions, and positive column insta-bilities, resonances, and propagation (SU-IPR-143) 03 p0400 N68-12284 24 p4328 N68-38500 Plasma stability for finite and infinite conductivity and energy balance in magnetohydrodynamic genera-PLASMA GUNS tes, and propagation 03 p0400 N68-12284 Plasma properties from ejection of copper coaxial til gun in zero to three-tenths Tesla axial magnetic [AFOSR-68-0236] 10 p1573 N68-19893 Electron ion and ion ion recombination in plasmas [IAE-1085] 03 p0400 N68-12338 Design and construction of ARGAS experimental magnetohydrodynamic generator at nuclear research facility Juelich, Germany [JUL-510-TP] 11 p1630 N68-21331 [RM-404] 07 p1060 N68-16546 Coaxial gun with covergent barrel for focusing high apeed blobs of hydrogen plasma [NASA-TM-X-60854] 07 p1060 N68-16784 Electrical breakdown between plasma and electrode [AWRE-O-78/67] 06 p0888 N68-15151 influence of traveling waves on plasma production high pressure, high frequency generator Physical, quantum, and plasma electronics studies on hotodielectric effect, holography, resonance and lasma recombination by high pressure, high frequency generator (FTD-MT-24-89-67) | 1 p1763 N68-21369 Two channel transient voltage digitizer for correla-tion of transient spectra with performance in coaxial, Plasma production by laser beam irradiation of solid lithium hydride particles in vacuum [NYO-3578-8] 13 p2125 N68-23284 [NASA-TN-D-4385] 06 p0819 N68-15542 07 p1064 N68-17070 sa flowing around blunt metic field teraction effects of pi Potential of various gun geometries for coaxial asma accelerators as space propellants e of strong mage body in presence of [UTIAS-TN-122] plasma accelerators as spac [NASA-TM-X-52431] Plasma diagnostic techniques and generation use in plasma test facility [AFFDL-TR-68-21] 13 p2129 N68-24048 12 p1948 N68-22389 07 p1064 N68-17071 Numerical results of calculated response of collision-as electron plasma to externally imposed electric field Coaxial plasma gun research for space propulsion Plasma-ion source system for ground calibration of Bennett RF ion man spectrometer [NASA-CR-94687] 14 p2253 N68-24392 [NASA-TM-X-1600] 16 p2739 N68-28154 [NASA-CR-93977] 11 p1762 N68-21096 Electron diffusion process in beam plasma passing through electrically floating anode [NASA-TN-D-4758] 19 p3344 N68-32072 UHF-plasma interaction, and two-stream instability of current-carrying plasma High enthalpy plasma generator for atmospheric entry heating simulation [NASA-TN-D-4583] 14 p2234 N68-24560 12 p1945 N68-22077 PLASMA HEATING Random phase approximation for nonlinear interac-tion of small amplitude waves in plasma [IIF-LA-6] 12 p1949 N68-22545 Radio frequency induction coupled plasma genera-r for apheroidization of ceramic powders UCRL-17896] 14 p2263 N68-24588 Laser used as energy source for creating ultrahigh imperatures by implosion 01 p0072 N68-10582 Nonlinear wave phenomena, mode coupling of drift waves, closed for hot plasma tensor, plasma dispersion function, plasma waves, ion-accestic waves, and non-Preparation of calcium oxide single crystals by Ver-neuil method using plasma heating [ORNL-TR-1807] 04 p0527 N68-13865 Hydrogen plasma hot cath tron energy and density study [NASA-TN-D-4604] runction, plasma was linear stabilization [R-28] ode generator and elec-15 p2528 N68-25877 . 13 p2129 N68-24125 Dynamic model for plasma heating by pulsed laser Ballistic range and RF argon plasma generator for magnetohydrodynamic experiments Skin effect in gaseous plasma due to electron thermal 07 p1063 N68-16954 15 p2532 N68-26593 Pulse transformer, water capacitors, and gaseous discharge production for plasma studies in magnetic field [D1-82-0705] 14 p2323 N68-24740 Heating and containment of plasmas by fast mag-netic compression in theta pinch [NP-16754] 09 p1401 N68-18572 Electron beam-plasma interactions, cyclotron har-nonic instabilities, paramagnetic and semiconductor naterials, and harmonic current generation NASA-CR-94680] 14 p2327 N68-25551 09 p1401 N68-18572 materials, and harmo [NASA-CR-94680] Interchange instability in heated plasma produced in nagnetic mirror configuration by electron cyclotron esonance heating [AFCRL-68-0210] 15 p2532 N68-26671 Laser interferometer and magnetic probes to study supersonic magnetohydrodynamic wave interaction with magnetic dipole [MATT-TRANS-56] 17 p2949 N68-28974 d constricted are pla nasma generators 15 p2533 N68-26695 [ARL-68-0023] 11 p1761 N68-20890 Design considerations and preliminary tests of diode for electron bombardment system of thermal plasma Crystal growth of refractory materials in fireball of asma heated Verneuil type furnace 17 p2949 N68-28974 Two spin deviate problem for exact analysis of in-teracting Fermi gas 13 p2131 N68-23091 15 p2533 N68-26732 Soviet research on achieving slow controlled ther-monuclear reactions, and techniques for creating, heat-ing, and confining plasmas 18 p3126 N68-29642 Planna production by laser metallic surfaces [SC-DC-67-3217] in reactions, and relaxa-15 p2479 N68-26825 14 p2322 N68-24608 tion time for weakly [AFCRL-68-0237] 18 p3146 N68-30768 Plasma production by high power Q switched ruby od for microwave heating of plasma electrons 1-78] 16 p2740 N68-28300 Method for [CLM-R-78] Reflection and amplific waves in oscillating medium incident upon time-space po mplification of electromagnetic nedium - scattering of plane wave ace periodically modulated medi-16 p2740 N68-28302 [WERL-3472-9] Enhanced ion cyclotron radiation and effects of icrowave plasma heating on its stability and trapped Some properties of plasmas produced by irradiating ght solids by lasers 19 p3342 N68-31798 [SR-10] (LGI-68-2) (UCRL-70841) 18 p3141 N68-29596 17 p2950 N68-29073 Production and injection of small deuterium specks vacuum environment by laser pulse. GI-68-8] 18 p3082 N68-29624 th plasma confined in Induction plasma heating system for hydrogen-argon simulated gas cooled reactor studies [NASA-CR-1143] 18 p3142 N68-29888 dipolar magnetic fiel [NASA-CR-96142] 19 p3344 N68-31988 Plasma production and heating by laser radiation with plasma control and production of thermonuclear plasma discussed (NP-17453) 18 g3084 N68 20330 Rosenbluth-Ferraro-Du teraction between cold vacuum magnetic field [NASA-CR-96153] sheath model of in-lisionless plasma and Ohmic heating of fully ionized plasmas studied from percuinations to Boltzmann transport equation Insport equation 18 p3146 N68-30672 19 p3345 N68-32105 Radio frequency electromagnetic field heating and ontrol of flowing plasma near zone field - ad-time measurements on Plasma effects in antenna sittance and ionization rise na generated by beam of high energy photons in 19 p3338 N68-31047 Teflon-plugged wavegu [NASA-CR-F149] 19 p3339 N68-31140 Determination of high frequency field distribution to improve plasma heating device performance and sta-20 p3438 N68-33042 Experimental results on p tainment in apherical multips [IBJ-912/XVIII/PP] olts on plasma production and con-Transverse injection of dense plasma into linear oc-tupole magnetic field (TR-46) 20 p3558 N68-33158 19 p3345 N68-32175 (IPP-4/51) 20 p3552 N68-32287 Crowbar system arrangement for 2.7 MJ espacitor Plasma preheating in megajoule theta pinch device for subsequent magnetic compression [NASA-TN-D-4708] 20 p3559 N68-33372 ng bounded plasma inbank foar I [IPP-4/59] [AFOSR-68-1083] 20 p3559 N68-33372 22 p3940 N68-35076 20 p3450 N68-32534

EX

721

of

861

tion mic

tric

058

158

VC-

ron sta-

338

151

on

42

unt

71

96

lity

177

.

45

rift on on-

25

40

51

dy

74

42

m-

68

tic

88

55

d-

12

e-

18

Stochastic and kinetic interaction processes related to solar probe mission 22 p.3962 N68-35784 interactions of electric arc plasma with transverse [HMP-118] PLASMA JET WIND TUNNELS Arc heated plasma wind jet tunnels for hypersonic flow at plasma density and high temperatures [DLR-FB-67-66] 04 p0490 N68-13358 Operation of solar cell arrays in dilute streaming NASA-CR-723761 09 p1277 N68-19356 with solar wind 11 p1694 N68-21695 Geomagnetic field in [AFCRL-68-0047] PLASMA JETS Use of induction plasma in analysis of metallic traces (RT/CHI/67/15) 02 p0179 N68-11877 Fluid transpiration on arc radiation source for solar 03 p0400 N68-12149 ICP-3/3121 Piezoelectric pressure p end losses from theta pinch (CLM-R-70) es for measuring plasma 04 p0552 N68-12863 Physical processes in to [NASA-CR-91529] 04 p0554 N68-13516 ergy converters, and elec-re currents, electrodeless ic jet flow dynamics, and Magnetohydrodynamic energy of tric plasma acceleration - arc cu DLR-MITT.-67-17] 05 p0721 N68-13924 Effects of axial current flow on velocity and energy supersonic plasma jet 05 p0722 N68-13930 Interferometric meass modynamics during impi s on plasma jet thernt on wedge 05 p0723 N68-13932 Aerodynamic sensors for measuring thermodynamic stracteristics of supersonic argon plasma jet 05 p0723 N68-13933 Plasma analysis for electric arc geometries with radi-gaseous mass flow 05 p0723 N68-13934 Vacuum ultraviolet emissio ties of thermally stabilized cas [ARL-67-0178] and absorption proper-05 p0724 N68-14334 Very fast acting miniature measurement of enthalpy in ar [CAL-IM-2286-W-1] robes for instantaneous jets 06 p0843 N68-15179 Measurement of temperatu particles of argon plasma jet of arc jet and density of charged 07 p1062 N68-16850 Jet outflow of metallic pla licability of metallic plasma lies of plasma flow to solid w lies of plasma flows lasma into vacuum and ap-na jets in heat transfer stu-wall and aerodynamic stu-07 p1062 N68-16851 a discharge increase and ion extraction system mizing Glessen mercury ion thrustor with high for opti frequency ion source [CTO-423] 08 p1229 N68-17388 Nonlinear co ctroscopic temperature (AFML-TR-67-371) asmas 10 p1574 N68-20273 Emission spectrum of alkali metal plasma jet in [FTD-MT-24-153-67] 11 p1764 N68-21585 Plasma jet temperature mes rement techniques 12 p1944 N68-21885 Operating principles and applications of plasma dis-play panel 13 p2036 N68-23932 Transient spectral discharges of argon plasma in axial plasma accelerators coaxial plasma accelera [NASA-TM-X-52340] 15 p2528 N68-25949 irch of helium at high arc TR-301 15 a2529 N68-26157 ama motion after hot cathode idinal magnetic field 15 p2531 N68-26482 Transverse (FTD-MT-67-77) Spectrum analysis, continuum and line radiation in-neity, and atomic excitation in spectroscopic study of gon plasma jet 16 p2735 N68-27220 na jet in TM-3 at high initial hydrogen pr [CTO-439] · 16 p2739 N68-28197 ablative materials in arc PASA-CR-95378) 17 p2985 N68-28597

RT/F1/68/12] AS-68-3) PLASMA LAYERS PLASMA LOSS

PLASMA OSCILLATIONS Azial current induced decay rate behavior in cylin [NP-17439] omalous structural and cal plasma jets 17 p2949 N68-28933 a oscillations excited in as of slow and fast drift NASA-CR-91665] 05 p0734 N68-14809 Thermal balance a nalysis of radial to e and Maxwell equations in analogic I temperature distribution in argon Experimental studio between drift waves in p [NASA-CR-92566] tric coup 17 p2949 N68-28979 06 p0891 NSS-16007 Instability of gas dische eathode in magnetic field at lo [FTD-MT-66-110] arge with incandescent (TR-37) 19 p3341 N68-31615 nry magnetic field by thed solar plasma flow 07 p1081 N68-16871 Perturbations of int lunar wake compared w [NASA-TM-X-63094] Design and instru is radiation source f [NASA-CR-96237] n of fluid transpiration arc imulation 20 p3455 N68-32487 potential of electric publibrium 08 p1218 N68-17647 Mass spectrometric determin reactions in 50 megacycle dischi [TR-RICE-3-PU] on of ion malecule 20 p3422 N68-32741 urement of induced Density fluctuations in alkali plasmas without mag-nic field and experiments on electrostatic oscillations (LGI-68-1) 08 p1218 N68-17705 20 p3557 N68-33003 Spectroscopic study of electron-ion recombination in argon plasma jet in low density wind tunnel 20 p3559 N68-33461 Diagnostics and in ation of acceleration Time variation of spectral line ir and atomic hydrogen in puls intensities for molecu-ed discharges in terms dynamic arc 21 p3747 N68-33838 mechanism in magnetor [NASA-TM-X-60478] cts on magnetoplasms arc nts of ions and neutrals 21 p3757 N68-34757 Propellant mixtures effe jet, and velocity measureme [NASA-TM-X-60513] Numerical solutions as for plasma oscillations in ([INR-829/XXI/PP] reximation tech d electric field 10 p1574 N68-Laser interferometer for det ty concentration in plasma jets ermining electron densiict on excitation of electro-Electron temperature off atic ion cyclotron escillati 23 p4071 N68-36194 11 p1758 N68-20650 Optical and microwave n plasma discharges in molect [AASU-287] rements of 2450 MHz intivity gradients in fully a columns Overstable modes due to res ar mitrogen 23 p4139 N68-36259 ionized, current-carrying pi ITR-0158/9220-02/-11 ns in laminar and turbu-11 p1759 N68-20715 lent jets [FTD-HT-23-669-67] Multipolar cyclotron m magnetized, cold, collision [TR-0158/9220-02/-3] des in cylindrically, axially, 23 p4141 N68-36612 Plasma jet motion through nonuniform transverse magnetic field [FTD-HT-23-926-67] 24 p4327 N68-38365 11 p1763 N68-21484 Intense low frequent by oscillating electron sipation instabilities of [FTD-MT-24-67-152] Interactions of electric arc plasma with transverse magnetic fields and gas flows. [HMP-118] 24 p4327 N68-38423 a oscillations produced as described as drift dis-11 p1764 N6E-21544 Small amplitude ac plasma continuity equa-tions in electron density [NASA-TN-D-4472] Plasmapause relation to ion composition of topside ionosphere [NASA-TM-X-63063] 12 p1951 N68-22887 04 p0500 N68-13371 Collisis field [R-27] Instability of neutral sheet (LGI-67/17) 10 p1575 N68-20416 waves, closed for hot plans function, plasma waves, ic linear stabilization [R-28] 13 p2128 N68-23903 tohydrodynamics, and n acoustic wave 17 p2947 N68-28479 Microwave scattering, mag growth and stability of plasma mode coupling of drift mor, plasma dispersion ountic waves, and non-Kaon systems, violation of conservation/parity, pion decay, strangeness oscillation, lifetimes, and mass dif-ferences 13 p2129 N68-24125 Neutral injection experiented plasma density, frequ [UCRL-70655] ent with electron plasma to ney, and oscillations 14 p2327 N68-25455 06 p0885 N68-15803 Plasma production and lifetime, collision-induced in-stability theory, microwave radiation, magnetocon-ductance, and other plasma physics studies mas and incoh 15 p2529 N66-26166 13 p2130 N68-24251 Charged and neutral parti for describing low frequency Interference loss measure vironment of plasma arc jet [AFOSR-68-0004] ionized gases (NASA-TM-X-52333) 15 n2529 N68-26276 Transverse pla discharge in longit (FTD-MT-67-77) after hot cathode 10 n1573 N68-19862 Cross field transport in m beta collision dominated plass [SIT-2813-46] etically confined low 15 p2531 N68-26482 20 p3558 N68-33144 PLASMA OSCILLATIONS ble modes occur (UCRL-50397) 16 p2740 N68-282 Electric field in plasma hal normal mode analysis with co alf space determined using collisions and particle con-[NASA-CR-90045] 01 p0117 N68-10073 17 p2948 N Fluid dynamic turb techniques for analysis of NASA-TM-X-523711 02 p0251 N68-11059 Collective approach technique to determine therodynamics of N-particle electron gas including trans 02 p0251 N68-11093 17 p2865 N68-29024 n for nonlinear oscilla-02 p0255 N68-11569 SU-IPR-224) 18 p3145 N66-30301 vave propagation, electro-nd positive column insta seation (SU-IPR-145) 03 p0400 N68-12284 (CTO-463) alyzed by using concepts of of electron and lon pla

05 p0723 N68-14030

19 p3337 NGS-30905

SI

5

21 p3748 N68-33973 [AE-4, PT. 2] 02 p0258 N68-11335 Alfven and cycl ion and propagam generated plasma 23 p4136 N68-36023 (DLR-FB-67-60) 02 p0254 N68-11526 Geomagnetic properties of dispersion relation used obtain instability criterion for electromagnetic waves plasma with anisotropic velocity distribution 17D-HT-66-499] 23 p4138 N68-36199 for nonlinear oscilla-02 p0255 N68-11569 with fluid mechanics, bioastronautics, a as in electron gas 23 p4138 N68-36214 achine studied in lasma generated located ionizer ommunity 02 p0240 N68-11586 scaled experiment using potassium pl by surface emission from centrally wiet articles on p mechanics, det lated from journ ics, fluid mechanics and thermodynamics [ERL-M-213] 23 p4142 N68-36922 technical physics [FTD-HT-66-261] Enlarged kinetic theory of stable and weakly unsta-02 p0241 N68-11661 23 p4144 N68-37076 Progress reports in , plasma, and elecin smooth cylindrical trochemical enginee [NASA-CR-91449] 04 p0543 N68-13118 [WRE-TN-CPD-140] 23 p4032 N68-37106 Coordination of reentry plasma measurements with light data ascertained by RAM, FIRE, Gemini, and High frequency dielect tions for degenerate ele tant, and plasma osciln gas 24 p4323 N68-37660 Mercury projects [NASA-TM-X-60771] 04 p0576 N68-13351 plasma-induced phase Electro-optical m on ruby laser output [LA-TR-67-77] 05 p0724 N68-14251 [NASA-CR-97345] 24 p4264 N68-37775 obes, pulse techniques, in electron and ion flow na interaction studies 05 p0725 N68-14420 near emitters [FTD-HT-67-457] 24 p4326 N68-38267 el development 06 p0814 N68-15140 PLASMA-PARTICLE INTERACTIONS (R-3701 Electron beam plasma interaction in low pressure mercury vapor discharges [SU-IPR-14]] 01 p0117 N68-10288 Survey of the of brobest alysis of kinetic equation for spa-plasma systems with collective in-AD-662909] 06 p0889 N68-15488 ydrodynamics and plasma theory, ante atterns, and electrodynamics of gyrotr 01 p0119 N68-10891 Dispersion relations and stability analyses for beam asms interactions at symmetric and transverse modu-06 p0891 N68-15987 ISU-IPR-1141 03 p0403 N68-12607 Power dissipated or ge ed by excited modes in Low frequency of tributions in plasmas [NASA-CR-91295] electric microfield dis-CEA-R-3288] 06 p0892 N68-16098 04 p0551 N68-12828 6 references with abstracts 1966-1968 Bibliography cont Growth of electrostatic wation of electron beam in in tic wave excitation and modifi-in interaction with collisionless 07 p1056 N68-16284 [NASA-CR-91239] Stability problems in in producing high cur-06 p0889 N68-15516 rent electron beams in pla (UCRL-TRANS-10147) Kinetic description of two particle correlation func-tions for plasmas in strong magnetic fields in terms of single electron distribution functions [ARL-67-0158] 07 p1055 N68-16201 08 p1217 N68-17319 Generalized Saha eq for nonequilibrium two erature plas 08 p1219 N68-17813 na interaction and plasma mul-seter wave generators 09 p1402 N68-18614 Electron beam-[FTD-MT-65-443] ma physics 08 p1220 N68-17921 tiplier as possible milli [NASA-TN-D-4309] nization and radii ent values of elec brium plasmas in t Electric field variation LGI-67/181 10 p1575 N68-20460 (SRRC-CR-68-4) 09 p1400 N68-18401 Constant density equations of state in d [LGI-67/14] -Fermi models for 12 p1948 N68-22366 NASA-CR-94361) ed gases 10 p1575 N68-20302 Scattering and absorption of waves by particles of turbid mod [NASA-TT-F-477] as trigger circuit and Digital con flum 12 p1868 N68-22462 [LGI-67/15] 10 p1507 N68-20472 Interaction between ion flux and target plasma dur-ing charge exchange [IAE-1400] 14 p2327 N68-25411 be cyclotron res [AFCRL-67-0497] 11 p1759 N68-20760 nteractions as means of relaxing dis-on of single species one dimensional energy research su [NUP-A-68-2] 11 p1760 N68-20875 17 p2947 N68-28491 HF field interactions, low and vacuum technology 17 p2951 N68-29169 ntrolled thermonuclear IPPCZ-721 [LA-3831] 11 p1753 N68-20948 Dependence of tungsten electrode work functions on saitive ion sheaths between electrodes and cesium Plasma characteristics of electron hombardment ion [NASA-CR-94554] 13 p2143 N68-23335 NASA-TN-D-4745) 18 p3145 N68-30593 serature chemistry and d fast electrons with incled systems 19 p3344 N68-32050 Interactions of photon plasmons in bounded and u ORNL-TM-2101] NP-172831 13 p2128 N68-23913 Cascade excitation of through plasma [IAE-1364] Anomalous high frequency plasma due to particle wave in [LGI-68-11] hydrogen atom passing ctivity in turbulent 14 p2318 N68-25410 23 p4143 N68-37006 rchanics and techni a physics, mechani odynami U.S.S.R. studies in appliphysics - fluid mechanics, properties, about waves, PLASMA PHYSICS Plasma physics research a on and staff at Montreal U es, facilities organiza (FTD-MT-63-161) 01 p0121 N68-10957 16 p2714 N68-27575

is summary including issues physics 02 p0292 N68-11138 field interactions, low vacuum technology 17 p2951 N68-29169

n of hot hydrogen plasma 18 p3144 N68-30238 [LGI-67/26] se transitions in quan-electron gas densities 19 p3329 N68-31319 (AFCRL-68-0209) Research studies in namic generators 19 p3343 N68-31928 reactions, and magneto (AFOSR-68-1377) Superconducting coils for plasma physics experi-20 p3552 N68-32279 Laser applications in medical science, welding, run-efinding, material testing, retinal tumors, and plasma 20 p3492 N68-32374 eralization of der ty and temperature condi-mospheric model 20 p3590 N68-33268 tions at baropause for in [NASA-TM-X-63311] alactic plasma and its dynamics determined by self intent field kinetic equations 21 p3749 N68-34216 ng positive ion heating of ed by ex 22 p3939 N68-34861 ods for various plasma Numerical calcu physics and contr [UCRL-71205] 22 p3946 N68-35919 res, shock structure of ar-bie to macroscopic and 23 p4137 N68-36083 oretical study of pro operties due to curvature in toroidal plasma [CEA-R-3490] 23 p4138 N68-36207 sion processes in thermal 23 p4139 N68-36265 Plasma dynamics, I bremsstrahlung, fast scir [SIT-2582-25] and theta pinch 23 p4141 N68-36669 nas applicable to magnetohydrodynas [CONF-680704-2] 23 p4142 N68-36934 st in plasma with He-Ne Electron density m laser by interfer (CEA-R-3461) 23 p4143 N68-37034 ory of toroidal plasma column by helical magnetic field 23 p4143 N68-37045 NP-175271 PLASMA PINCH NT THETA PINCH Stability criterion for pinched fluid with longitudinal magnetic fields [NP-16976] 01 p0119 N68-10874 Linear pinched argon ping relativistic electron bea [RR-TR-67-16] a for guiding self focus-09 p1400 N68-18390 Interferometric measurements of plasma pinch with rotating high fre [LRP-36/67] s of electron density in frequency field 12 p1950 N68-22736 Magnetic moment of puniform longitudinal magne (FTD-MT-24-106-67) nt of p a pinch traveling in 13 p2127 N68-23845 Properties of toroidal with crossed magnetic field [AFCRL-68-0140] a containment device 15 p2532 N68-26669 toroidal plasma column cal magnetic field 23 p4143 N68-37045 Experiments and theor roduced and confined by scteristics, and plan generation and heatin 23 p4144 N68-37158 nentation for use otolysis 24 p4217 N68-37959 PLASMA POTENTIALS na flow 20 p3557 N68-33003 PLASMA POWER SOURCES and inductive mag-for power generating (DLR-FB-67-59) 02 p0251 N68-11139 ems with plasma reac-ic generators for ener-NASA-TT-F-11825] 18 p3147 N68-30811 NASMA PROBES

NT ELECTROSTATIC PROBES

NT MICROWAVE PLASMA PROBES

Research laborat studies in surface, as [NASA-CR-90378] EX

238

319

lear

928

eri-

279

374

268

216

of

919

207

265

669

134

Ne

134

45

74

90

im

45

ice

69

na

isc

59

03

e ng

11

on and electron beam probing of and interaction 03 p0403 N68-12619 bremsstrahlung affects n waves in plasma 04 p0554 N68-13469 probes, pulse techniques, plasma interaction studies 05 p0725 N68-14420 Wave propagation, plasma cyclotron waves, and beam-pi [SU-IPR-198] Installation of Tokamak TM-3, at magnetic field and toroidal discharge (FTD-MT-24-88-67) nd winding of its urpe chamber 11 p1764 N68-21525 Boundary correction fa-tivity/velocity plasma prob [NASA-TN-D-4538] s for three coil conduc-11 p1765 N68-21691 Computer program for analyses of plasma density nd velocity distribution, single particle behavior, and cetector efficiency [CLM-R-76] 12 p1950 N68-22731 Interferometric measurements of electron density in plasma pinch with rotating high frequency field [LRP-36/67] 12 p1950 N68-22736 Laser scattering spectrumements in theta pinch r ion temperature mea-(IPP-1/78) 20 p3555 N68-32502 (TR-46) 20 p3558 N68-33158 PLASMA PROPULSION Magnetoplasmadynamic thrustor for space applica [NASA-CR-93139] 07 p1073 N68-16396 Fuel retention, flow characteristics, and trans-arence of materials studied as part of gaseous nuclear rocket investigation [NASA-CR-92987] 07 p1030 N68-16664 Performance analysis or systems for spacecraft propu [TUB-IR-1/1967] gaseous core reactor 15 p2500 N68-25892 Comparative analysis of gas core nuclear reactors for pacscraft propulsion 15 p2500 N68-26005 Electrostatic, resistojet, colloidal, and plasma propulsion for satellite thrust and control [NASA-CR-88064] 15 p2548 N68-26873 Coaxial plasma gu ch for space propulsion (NASA-TM-X-1600) 16 p2739 N68-28154 PLASMA RADIATION Charge injections in torus, holes in electron clouds, and analog tank for plasma radiation shield [NASA-CR-89956] 01 p0117 N68-10398 Radiation during scattering of charged particles on electromagnetic waves of isotropic plasma [FTD-HT-67-55] 02 p0255 N68-11597 Energy conversion pla [AR-1] 03 p0400 N68-12168 X band input transmission line evaluation, high im-pact circular-cup radiator development, spacecraft an-tenna development, and radiation from electric dipole in circular plasma column 03 ±0322 N68-12325 rement of radiation emission and absorption 03 p0401 N68-12377 Reaction rates and energy distributions during mization and recombination processes in optically (PUBL.-68-1) 16 p2733 N68-27060 Plasma electron temperature calculated from absorption measurements of continuum X radiation from CLM-R-811 17 p2946 N68-28386 Transmission and emi setized laboratory plasma [LA-DC-9540] of radiation by mag-19 p3342 N68-31718 Electric dipole radi isotropic and uniaxial AFOSR-68-1081] 22 p3940 N68-35081 Plasma diagnostics us [LA-TR-68-23] graphy 24 p4324 N68-37914 PLASMA RESONANCE Self absorption resona yelotron harmonics by seco tion on Penning disch 02 p0252 N68-11157 n waves in two species NASA-TM-X-14811 02 p0253 N68-11404 Resonances in drivi dipole antenna in iono [NASA-CR-91620] impedance of electric

05 p0629 N68-14025

PLASMA TEMPERATURE [NASA-TN-D-4651] 06 p0837 N68-15405 18 p3143 N68-30031 Space charge, electrophoresis, and volt-ampere taracteristics in transport of plasma sheath using gas ation of low frequency oscillation onance in direct current magnetic (AFCRL-68-0149) 08 p1217 N68-17284 Resonance probe form antiresonances, asuring electron density a sheath thickness, and (NASA-TM-X-63163) 11 p1764 N68-21535 tatic magnetic field in [NASA-TT-F-11666] 18 p3144 N68-30290 12 p1944 N68-21970 Rosenbluth-Ferraro gry sheath model of in-collisionless plasma and Theoretical study of a phenomena occurring perpe [NASA-CR-94548] ular to magnetic field 13 p2126 N68-23502 NASA-CR-961531 19 p3345 N68-32105 in plasma sheath sur-ECOM-2976) 20 p3553 N68-32305 Iterative calculation linionless sheaths betthermally ionized cesi [NASA-TN-D-4376] and results for plane co d modified emitter as 17 p2851 N68-29089 fects in telluris 20 p3557 N68-33021 (APOSR-68-1349) 19 p3356 N68-31919 iterative procedures for plasma sheath problem NASA-TM-X-611661 23 p4139 N68-36311 20 p3560 N68-33504 Space probe data on planea sheet NASA-TM-X-63330) etic tail and imbedded a resonance in aluminum onditions in reflection and 21 p3762 N68-34633 DESY-68/271 23 p4144 N68-37184 redar countries of the nama resonance scattering of radio waves in or trail model using cylindrical mercury vapor decrease due to roent INASA-TN-D-47841 (FTD-HT-23-997-67) 24 p4325 N68-38204 PLASMA RINGS U TOROIDAL PLASMAS of electron beam electric FLASMA SHEATRS SMA Sene-Electron sheath formation in argon senestro-classium at 2200 deg K and one atmosphere pressure 02 p0255 N88-11663 [NASA-CR-98042] 24 p4249 N68-37604 PLASMA SLABS dary layer flow electron density measurements (TR-0/58/3240-20/-4) Radar acattering from plane parallel turbulent lasms slab with step function fluctuations of electron (IDA/NQ-67-6376) 03 p0341 N68-11991 02 p0252 N68-11227 Radio propagation in reentry plasmas [D1-82-0698] 10 p1495 N68-19674 of plasmas and self con-Magnetic fields influence or horn antenna behind plasma sh [RCA RES. REPT.-7-401-58] 07 p1058 N68-16443 iation pattern from cold magnetopie Trapped modes slabs and rods [NASA-CR-93148] 07 p1059 N68-16507 11 p1659 N68-20659 Receiver noise figure in pres sheath of reentering space vehicle (9C-RR-67-2964) nce of hot plasma arremainm through ary angles of incidence anisotropic plasma alab at arbit [RCA RES. REPT.-7-801-59] 11 p1660 N68-21033 Magnetic field effect on radiation pattern of horn an-tenna situated behind plasma sheath [RCA RES. REPT.-7-801-60] 11 p1759 N68-20612 Gravitational and drift waves in periodic plasma slab (CLM-R-83) 14 p2322 N68-24726 11 p1662 N68-21474 FORTRAN computer pro-less sheaths between field a mally ionized plasma exempl [NASA-TM-X-1562] rums for plane collision-odified emitter and ther-20 p3554 N68-32414 d by cesium 11 p1669 N68-21499 d admittance of circular covered by dielectric or Explorer 34 plasma exent data on solar wind NASA-CR-1177) 22 p3941 N68-35171 [NASA-TM-X-63155] 11 p1785 N68-21553 PLASMA SOUND WAVES

U MAGNETOHYDRODYNAMIC WAVES aths for cesi [NASA-TN-D-4419] PLASMA SPECTRA 11 p1765 N68-21623 interaction of micros nized flow fields, and m rative effects of plasma uring regular arges of argon plasma in radiation, with about for measuring deter [NASA-TM-X-52340] 15 p2528 N68-25949 PLASMA STABILITY
U MAGNETOHYDRODYNAMIC STABILITY 13 p2029 N68-23936 is on radio frequency PLASMA TEMPERATURE Effect of molecular of induced pleams shield [AFCRL-68-0028] olled arcs 04 p0553 N69-13173 13 p2128 N68-24032 Model of plasms by [NASA-CR-1072] 15 p2528 N68-25821 methods of measuring gas 05 p0658 N68-14088 n plasmoid injected into learn diagnostics 09 p1401 N68-18537 15 p2424 N68-25995 Diamagnetic signals uniform magnetic field fo [REPT.-851/18/PP] Plasma sheath effer system with slot antenna [NASA-TM-X-59087] 16 p2623 N68-27547 Magnetohydrodynamic state lity of plasma sheath errent layers 17 p2948 N68-28703 [AFML-TR-67-371] 10 p1574 N68-20273 mperature measurements of eded argon plantas in electric o wave propage brough reentry plant 17 p2852 N68-29100 12 p1945 N69-22027 io wave propagation 14 p2323 N68-24839 (CEA-R-3125) 17 p2852 N68-29102 14 p2325 N68-25056

SU

H

0

11

10

m (F

(L

阛

(D)

rate (NP

P

R.

F

MA

[JIN

10 p1574 N68-20287

n behind shock fronts cs of shock formation Multiple stream method for instability analyses on in air and argon, and ch 07 p1063 N68-16950 discharge tubes 18 p3146 N68-30656 Electrostatic wave propa dated from radar Thomso on in warm plasmas cal-Temperature and of duction argon plasma ([IBJ-906/XVIII/PP] uity distribution in inospheric scutter 10 p1572 N68-19555 [MATT-555] 19 p3345 N68-32168 Spectral characteristics and wave propagation in PLASMA TURBULENCE magnetosphere of hydromagn [AD-665775] 11 p1687 N68-20717 Propagation of largetohydrodynamic waves in g nonlinear wave propagation in collisionless ermeated by uniform background magnetic 01 p0118 N68-10762 Atmospheric model for high energy particle ac-celeration in plasma turbulence [NASA-CR-90213] 01 p0121 N68-11000 12 p1947 N68-22245 m phase approximation for nonumea.

12 p1949 N68-22545 Instabilities and turbulence in cesium arc plasmas (ORO-2454-9) 05 p0724 N68-14413 tion of smal Kinetic equations for bulence of one dimen (MPI-PAE/PL-4/67) Propagation of electron cyclotron waves and effects of low frequency noise in collisionless plasma [NASA-CR-94430] 12 p [951 N68-22847 us microscopic tur-05 p0726 N68-15005 Statistical model for turbulence development, and sintegration in plasmas Small amplitude low frequency plasma wave modes in presence of magnetic and gravitational fields [NASA-CR-94616] 13 p2128 N68-23990 08 p1218 N68-17703 Dissipation mechanism of shock wave in rarefied tur-bulent plasms Nonlinear wave phenomena, mode coupling of drift waves, closed for hot plasma tensor, plasma dispersion function, plasma waves, ion-acoustic waves, and non-linear stabilization 08 p1218 N68-17705 Weak turbulence in homoge 12 p1946 N68-22182 [R-28] 13 p2129 N68-24125 Possible cause of plasma turbulence in high current etohydrodynamics, and toroidal discharge [MATT-TRANS-53] growth and stability of plasma ion acoustic wave 17 p2947 N68-28479 14 p2323 N68-24826 ation along helicoidal line in plasma phase demodulator 17 p2947 N68-28613 Oblique collisionless shock terium and hydrogen, and plass [ORO-3647-2] a shock wave structure in deuturbulence 16 p2739 N68-28171 Electrical conductivity of weakly ionized turbulent Generation of plasma waves described by dielectric ensor and computation of electric field in unbounded, comogeneous plasma NSJ-TR-122] 19 p3339 N68-31286 INP-174291 17 p2950 N68-29042 Arc driven shock tubes u rlium plasma on fluctuation sponed magnetic field es used to measure effect of sation spectrum of externally Plasma wave effects on imp mersed in warm isotropic p pedance of dipole antenna 20 p3558 N68-33151 18 p3142 N68-29930 theory for analyzing structure of electron fluid-dynamical waves moving into neutral, non-lossest Spectral distributions of turb collisional and collisionless dissig [NASA-CR-87760] ulence in plasma with 21 p3747 N68-33899 on-ionized gas 19 p3340 N68-31332 Fluctuation properties microwave-beated stellars [MATT-580] of strongly-turbulent Structure of plane magne wave in rarefied fully ionized pl [NASA-CR-95956] phydrodynamic shock 21 p3749 N68-34164 Cascade theory of plasma turbulence described by small eddy group mixing with larger ones to provide gradient diffusive flow 19 p3340 N68-31436 Propagation of helicon we nonlocal plasma conductivity nder conditions of NASA-CR-87759] 21 p3749 N68-34265 20 p3564 N68-32532 on of plasma turbulence Stable Maxwellian pla ave modes, theoretical 22 p3943 N68-35505 and experimental treatment [NASA-CR-96787] parmer calibration, and experiments in physics of [TID-24563] Anomalous high frequency con asma due to particle-wave intera ctivity in turbulent plasma due to 23 p4143 N68-37006 Plasma turbulence and estigated by laser light scatteri microinstabilities in-ng and kinetic theory of PLASMAGUIDES Hollow plasma wave guide propagation characmany body systems [LGI-68-15] 23 p4144 N68-37105 Plasma turbulence the henomena - two-stream in earn passing through cold pl [UCRL-17564] 01 p0116 N68-10014 ory and experimental stability for cold electron Microwave triggered ionized wave propagation in asma filled waveguide 24 p4324 N68-37992 07 p1063 N68-16953 lasma turbulence - quasilinear approximation, wave raction, methods for analyzing strong turbulence, plasma turbulent processes. Plasma waveguides for linear accelerators, pon-eromotive instrument for measuring laser output, and namifying Cosmos satellites missions by orbital ele-ent analysis Plasma turbs 24 p4326 N68-38323 PLASMA WAVES
NT ELECTROSTATIC WAVES 10 p1615 N68-19649 Plasma waveguides for linear accele Propagation of hydromagnetic ionizing fronts with large driving currents (NP-16892) 01 p0117 N68-10553 10 p1511 N68-19650 Wave propagation in waveguide partially filled with plasma in infinite axial magnetic field [TR-0158/9220-02/-2] on in plasma 02 p0253 N68-11386 Transient wave propaga [AFCRL-67-0383] 10 p1573 N68-19942 of charged particles on opic plasma 02 p0255 N68-11597 Radiation during a electromagnetic wave [FTD-HT-67-55] Propagation and pi derived by Boltzmann [NASA-CR-93914] filled waveguides model 11 p1761 N68-20996 on for weak collision Boltzmann distribution of effects on finite amplitude p Anisotropic medi [AFCRL-67-0606] ork synthesis 11 p1678 N68-21578 na wave decay 02 p0255 N68-11662 Nonreciprocal solid stransverse magnetic fields plasma waveguides in Experimental studies between drift waves in plan [NASA-CR-92566] parametric coupling 11 p1678 N68-21791 06 p0891 N68-16007 Transverse plasma transport magnetoplasma produced by co kali metal vapor on hot tungsten (REPT.-37) et due to drift waves in contact ionization of al-

Linearized equations and iteration used to solve ropagation in waveguides with warm plasma.

22 p3938 N68-34846 AAS [PHYSICS]
ARGON PLASMA
BETA PARTICLES
CESIUM PLASMA
COLD PLASMAS
COLLISIONLESS PLASMAS
COSMIC PLASMAS **DEUTERIUM PLASMA** DEUTERIUM PLASMA
ELECTRON PLASMA
HELIUM PLASMA
HIGH TEMPERATURE PLASMA
HYDROGEN PLASMA
METALLIC PLASMAS NONEQUILIBRIUM PLASMAS NONUNIFORM PLASMAS RAREFIED PLASMAS **RELATIVISTIC PLASMAS** RELATIVISTIC PLASM ROTATING PLASMAS SOLAR WIND THERMAL PLASMAS TOROIDAL PLASMAS ental properties of high density plasmas a or gaseous electronic switching and pow Fundamental plication for gr 01 p0117 N68-10550 Effective parameters for electrical conductivity of [AFCRL-67-0527] 03 p0400 N68-12009 Electron correlati ns in relaxation theory for spectral line broadening plasmas (NASA-CR-91284) 04 p0552 N68-12880 Radio frequency method of measuring electrical re-sistivity of strongly ionized plasmas 04 p0555 N68-13856 Correlations of electron density in plasma from laser light scattering by photon counting [LGI-67/8] 05 p0721 N68-13917 05 p0721 N68-13917 Appleton-Hartree equations for propagation of elec-omagnetic waves collisionless magnetoionic medium determine effect of electron density on laser INASA-CR-917271 05 p0671 N68-14178 Irradiated plasmas in magnetic field {LGI-67/11} 05 pi 05 p0724 N68-14179 na reflection coefficient e signals transmitted Signal attenuation and antenna measurements of microwave through hypervelocity air plasma [SC-CR-67-2710] 05 p0630 N68-14503 One dimensional analysis of magnetoplasm dynamic rcs with nonequilibrium ionization [NASA-CR-91685] 05 p0725 N68-14559 Statistical theory of emission, absorption, and conductivity of radiation in ionized plasmas
[AD-662910] 06 p0889 N68-15295 Propagation and dispersion of hydromagnetic and on cyclotron waves in plasmas immersed in magnetic [NASA-CR-92583] 06 p0889 N68-15521 Turbulence instabilities at plasma magnetic field in-terfaces, and plasma vortices in coaxial plasma ac-06 p0890 N68-15826 INASA-CR-925181 transport due to drift waves in ced by contact ionization of al-Transverse plasma transp magnetoplasma produced b kali metal vapor on hot tung [REPT.-37] n plate 06 p0891 N68-16052 Energy dissipation and heat balance of partially nized plasma studied in terms of macroscopic equa-[REPT.-67-26] 07 p1056 N68-16253 lonized medium effect on synchrotron emission of intermediate energy electrons [NASA-TM-X-63089] 07 p1040 N68-16294 Emission spectra of partially ionized plasmas ob-tained under conditions of low pressure-low current discharge and high pressure-high current discharge [AD-66235] 07 p1058 N68-16401 Cascade excitation of hydrogen atom by passage through plasma in magnet [UCRL-TRANS-10139] 08 p1212 N68-17389 Semiconductor detectors for ionized particles [CERTS-NT-02-5] 08 p1 78 N68-17628 Microwave propagation and Faraday effect in circu-r, solid state plasma waveguides under longitudinal Q-machine plasma for collision effects on electro-static ion cyclotron waves and cyclotron echo A21 12 p1944 N68-21922 09 p1400 N68-18441 Electrical conductivity netoplasma in nearly turbule [NASA-CR-93719] Electron cyclotron wave d agnetic field of waveguide bution in plasma along of collisionless mag-it magnetic field 10 p1572 N68-19706 14 p2321 N68-24495 Electric fields effect on fect on waveguide slot tion technique 18 p3145 N68-30347 n of low energy plasma in outer magnetosphi [NASA-CR-93819] [AFCRL-68-0152]

Planna wave propagat gram for calculating plan [AFOSR-67-1478]

plate 06 p0891 N68-16052

07 p1056 N68-16230

Relation between cut-off, and frequency made in couniform waveguides

iders - ALGOL pro-

magnetic field [IAE-1244]

Lossiess in

EX

846

550

of

109

880

pe-

356

ser

117

78

179

ent

603

92

95

and etic

21

126

152

ully un-

153

of

94

101

ige

89

28

41

06

Electrical con-

field (NP-TR-16231 ma in strong magnetic

14 p2327 N68-25441

Overstable modes due to resistivity gradients in fully icaired, current-carrying plasma columns [TR-0158/9220-02/-1] 11 p1759 N68-20715 FORTRAN program nission and absorption al plasmas 1 p1759 N68-20741 [ARL-67-0279] Compu anomalous diffusion (SU-IPR-202) 11 p1760 N68-20881 Anomalous diffusion in or particle transport in randos fields, and stabilization of drif [SU-IPR-207] old-cathode reflex, single in electric and magnetic 11 p1761 N68-20949 magnetic energy in [FTD-MT-24-150-67] 11 p1764 N68-21515 Installation of Tokar magnetic field and toroi (FTD-MT-24-88-67) TM-3, and winding of its lischarge chamber 11 p1764 N68-21525 Total thermal energy createring of alkali atomic asmas in thermodynamic tion measurements for us by alkali gases and 12 p1947 N68-22186 ima anisotropy, and na atlimittance in iono-[NASA-CR-94345] 12 p1844 N68-22321 its of plasma contain ment in open end syste [UCRL-70656] 12 p1949 N68-22414 eter for electron line density measurements of rapidly varying p 12 p1951 N68-22803 Small amplitude solution plasma continuity equations tions in electron density and (NASA-TN-D-4472) ons to spatially uniform for low frequency oscilla-neutral store 12 p1951 N68-22887 Conductivity of partially ionized plasma in long wavelength limit 13 p2125 N68-23462 Relaxation theory of spectral line broadening in asmas based on pressure broadening in neutral gases 13 p2126 N68-23501 Theoretical study of mag netoplasma resonance cular to magnetic field 13 p2126 N68-23502 phenomena occurring perpe [NASA-CR-94548] na pinch traveling in Magnetic moment of pluniform longitudinal magneti [FTD-MT-24-106-67] 13 p2127 N68-23845 Ambipolar diffusion fo as in uniform, zero, and non-uniform may [UTEC-MD-68-028] 13 p2127 N68-23851 Plasma microinstab ectric fields in crossed magnetic and ac [AFCRL-68-0044] 13 p2128 N68-24016 space charge by electrons fo [IAE-1277] lasma instabil pensation of ion beam of in rarefied gas 14 p2321 N68-24381 Bibliography on high to physics of gases and plasmas [REPT.-26] erature chemistry and 14 p2209 N68-24440 Interaction of charged particles with plasma in a stel-[NASA-TT-F-11629] 14 p2321 N68-24459 Skin effect in gaseous p due to electron thermal ID1-82-07051 14 p2323 N68-24740 Noelinear effects in propagation of large amplitude magnetohydrodynamic waves in plasmas [NF-17346] 14 p2323 N68-24747 interference of characteristic [NP-17342] waves in plasmas 14 p2323 N68-24752 search on plasma so de Alfven waves, co wave fronts, large am-14 p2323 N68-24775 (NP-173321 s for determining collision 14 p2323 N68-24830 red electromagnetic c field [NP-17339] 14 p2325 N68-25015 Refraction of microwaves in [NP-17343] ient on plasma slab 14 p2325 N68-25036 Fluctations of electric fields in penning discharge 14 p2326 N68-25235 MATT-TRANS-571 lonic collision effects on no interaction in nonisothermal pl [JINR-P9-3689] mear Langmuir wave 14 p2326 N68-25404

ucts as target plasma 14 p2328 N68-25653 (UCID-15295) ques and hard Tech lating ioncopheric NASA-TM-X-63226] 15 p2527 N68-25775 Model of plasma box [NASA-CR-1072] 15 p2528 N68-25821 Thermodynamics of p using principle of max-[NASA-TN-D-4821] 15 p2528 N68-25920 Gap coupling to wavegu th anisotropic plasma 15 p2529 N68-26052 Oscillations in bounded recessing ions as and incoherent 15 p2529 N68-26166 Signal distortion in anis pic homogeneous ionized 15 p2425 N68-26199 [AFCRL-67-0579] etic theory of highly negative Langmuir probe in (MATT-563) 15 p2530 N68-26400 Current sheet density of plasmoids in field free space [FTD-MT-24-108-67] mined by motion of 15 p2532 N68-26606 Pressure profile of Javelie ethods for reducing gas load rocket experiment and 15 p2446 N68-26900 lon cyclotron instabilities in 16 p2735 N68-27424 Physical processes in a tungsten cathode [NASA-CR-95144] -plasmadynamic are of 16 p2737 N68-27701 epedent variables using 16 p2737 N68-27798 Theory for ionized gas flo through parallel plate, 16 p2738 N68-27843 formation on research projects of plasma ory of Princeton University 17 p2946 N68-28334 ary infors physics laborate MATT-Q-251 meractions as means of relaxing dis-on of single species one dimensional 17 p2947 N68-28491 ation in fully ionized ontained between two plane parallel RT/FI/68/7) 17 p2951 N68-29402 Kinetic theory of stable and eakly unstable plasma 18 p3140 N68-29595 wave propagated on tical study of su plasma column 18 p3141 N68-29629 ectric fields 18 p3141 N68-29687 Plasmoid collision in axi By symmetric magnetic 18 p3142 N68-30008 [NASA-TT-F-11632] Validity conditions of ren phase approximation 8 p3144 N68-30267 [CTO-425] na transport properties, sity measurements, ther-helium, heat transfer and Pressure gages [NASA-CR-93874] 18 p3144 N68-30295 ng yield of ion source lon-optical system for in [FTD-MT-24-231-67] 18 p3145 N68-30618 ics of plasma in elec-P-886/XXI/PP 18 p3146 N68-30671 d plasmas studied from ansport equation 18 p3146 N68-30672 High temperature energy systems with plasma reacurs and magnetoplasma-dynamic generators for ener NASA-TT-F-118251 18 p3147 N68-30811 Monochromator me rod plasma injector to ture of electrons and in [P-883/XVIII/PP] ts of ion velocities in density and tempera-IE p3147 N68-30815 requency induction sic gas in supersonic 19 p3337 N68-30917 19 p3347 N68-30923

netized laboratory ph (LA-DC-9540) 19 p3342 N68-31718 determine spatial dis ned, quiescent potusi (SFF-2813-45) 19 p3343 N68-31898 and injection (ORNL-4238) 19 p3345 N68-32090 on rate in shock heated gase (IPP-3/701 20 p3554 N68-32370 INASA-CR-962271 20 p3555 N68-32550 iity, Vlausv equation, aductivity plasma 20 p3555 N68-32661 Faraday generators [AFOSR-68-1323] ric and plasma filled in-20 p3556 N68-32762 ry layer /plasma gause/ ato two regions 20 p3557 N68-33113 Theory of non nisotropic plasm ency generation in 21 p3748 N68-34001 waves in partly ion RISO-1711 21 p3748 N68-34134 ctromagnetic wave scatter terfaces in compressible 22 p3940 N68-35063 g varactor capabilities of 22 p3941 N68-35170 cal impodunce expres-lanty plantas 22 p.1836 N68-35524 SIONS FOR BORIOUS GIRS [NASA-TN-D-4774] ed plasma in infrared mg of fe 22 p3945 N68-35776 Measuring electric charge induction BMWF-FB-W-68-45] n ionized medium by Diffusion of procursor of strong shock wave in al [REPT.-1652/1] 23 p4140 N68-36611 23 p4073 N68-36886 (WERL-3472-8) Enlarged kinetic theory of stable and weakly unsta-23 p4144 N68-37076 sion through jacket (MATT-TRANS-50) 23 p4144 N69-37171 structure determined [MIAPH-PL-67.10] 23 p4145 N68-37375 24 p4322 N68-37446 Active Fabry-Pr ive resonator using BN-551] 24 p4323 N68-37635 in thermally conducting NIC-TRANS-26321 24 p4324 N68-38070 ASMATRONS
NT DUOPLASMATRONS Titunium disk pla CTO-3511 01 p0120 N68-10921 r in plac INR-855/XIA/PPI 10 p1513 N68-20303 ateal in UCID-15295 14 p2328 N68-25653 19 p3285 N69-31792

SUB

nar [All V stra [SU P tion

p) nick

A frict duri [NA

men [AF

heat and (CO

duri (FT)

grain inter [AD Bi com [AP

Pi thro [AR El buck [NA

of m

netiz chro [RT:

Pi

ICE-

M

He

gines matis and o [FTI

Di

No iron stress [OR]

Ne iron : hardi [OR]

Ple bend [RTS

Ex-mutic and to [RTS

Pla

Description and design of deoplasmatron proton ion source for particle accelerators	Analysis methods for plastic deformation of struc- tures under dynamic loading	Internal friction in nickel single crystals at low tem- peratures		
[LA-DC-9421] 21 p3743 Non-34313	[BU/NSRDC/1-67] 02 p0275 N68-11422	[TR-9] 11 p1775 N68-2169		
Designs and performance tests of three phase alter- nating current plasmatrons intended for obtaining low	Torsional loss of stability in plastic deformation 02 p0278 N68-11674	Necking, yield, and plastic flow in electrical analogs of mechanical systems with respect to energy conver- sion effects on mechanical behavior of various materi-		
[FTD-MT-24-235-67] 22 p3943 N68-35392	Mechanics and thermodynamics of plastic deforma- tion analyzed in terms of general assemblage or con- tinuum of elastic perfectly plastic elements or states	als [NASA-CR-1039] 12 p1919 N68-21949		
Magnetic field of levitated superconducting quadru- pole	tinuum of elastic perfectly plastic elements or states [TR-54] 02 p0279 N68-11764	Thermal stresses and elastic-plastic stress deforma- tion for bonded dissimilar media with straight cracks		
[IPP-2/67] 24 p4304 N68-38489 PLASMOIDS	Plastic deformation of zirconium during oxidation	along interfaces		
U PLASMAS [PHYSICS]	[WAPD-TRANS-72] 03 p0353 N68-12674 Compressive deformation testing and transmission	12 p1975 N68-22100		
PLASMONS	electron microscopy studies of plastic deformation in long range ordered iron and aluminum alloys [IS-T-180] 03 p0354 N68-12710	Structural changes in chromium during high tem- perature and low temperature deformation, and after		
Plasmons, quasi-particle excitations, inductance of superelectrons, and gain and inductance advantages for parametric amplification		[NASA-TT-F-11652] 13 p2082 N68-23591		
parametric amplification 05 p0701 N68-14466	Stress-strain curves for plastic deformation analysis of compressed polycrystalline iron silicon alloys	Fracture strength, brittleness, and plastic deforma- tion in metals		
PLASTERS U GYPSUM	of compressed polycrystalline iron silicon alloys [IS-T-128] 03 p0354 N68-12723	[NYO-2394-31] 13 p2083 N68-23789		
The state of the s	Methods and experimental conditions for creep anal- ysis and plastic deformation determination related to	Influence of impurities on strain orientation in low alloyed alpha uranium		
PLASTIC AIRCRAFT STRUCTURES	materials testing	alloyed alpha urumium [JPRS-45470] 14 p2269 N68-24632		
Electroplated nickel coatings for protecting plastic aircraft components from damaging effect of rain	[ONERA-NT-[14] 04 p0587 N68-13130	Deformation, stress, and strain distributions in		
[AFML-TR-67-356] 13 p2086 N68-23202	Effect of plastic anisotropy on flange wrinkling while drawing sheet metal between dies and blankholders	clamped-edge thin elliptic plate under load 14 p2360 N68-25387		
PLASTIC ANISOTROPY	[COA-NOTE-MAT-12] 04 p0515 N68-13317	Acoustic energy emission from plastic deformations		
Anisotropic plasticity in sheet metal under stress	Plastic response of circular uniform plate to axisym- metric impulse load of Gaussian distribution	related to nondestructive testing [UCRL-70750] 14 p2266 N68-25456		
from tensile tests [COA-NOTE-MAT-15] 15 p2479 N68-25674	[NASA-TR-R-279] 05-p0750 N68-14640	Damage mechanisms of cantilever beams mounted		
Correlations between crystal orientation, texture,	High temperature tests of dimensional changes ac-	on floating shock platform and shock tested by un- derwater explosions		
deformation, and plastic anisotropy of Rockwell hard- ness indentations in T and Mo crystals	companying plantic deformation of pyrolytic graphite [NASA-CR-91832] 05 p0681 N68-14797	14 p2365 N68-25531		
18 p3152 N68-29976	Plastic strains calculated in symmetrical blank forced into ellipsoidal die	Analysis of elastic-plastic large deflection response of shell structures to blast loads using finite difference		
PLASTIC COATINGS	05 p0669 N68-14862	method 14 p2366 N68-25544		
Linear polyethylenes for communication and power cable coatings	Ultrasonic studies of single crystal plastic deforma-	Energy dissipation analysis for sheet metal plastic		
[AD-656509] 01 p0080 N68-10075	tion in gallium and of amplitude dependence in lead [AFML-TR-67-72] 05 p0730 N68-14992	deformation 14 p2301 N68-25627		
Polymonotrifluorochloroethylene insulated wire [AD-656319] 01 p0036 N68-10148	Cyclic deformation of neutron irradiated copper sin-	Experimental measurement of small angle scattering		
Fluidized bed polymeric coating of large steel missile	gle crystals [AERE-R-5595] 06 p0853 N68-15108	Experimental measurement of small angle scattering of subthermal neutrons on plastically deformed cube centered copper single cryatals		
container [PA-TR-3569] 03 p0347 N68-12122	Plastic deformation and magnetic properties of metals, and equilibrium and kinetics of phase transfor-	15 p2513 N68-25860		
Protective coatings, and materials for radiation shielding of suclear technology structures - epoxy sur-	mations	Neutron irradiation and plastic deformation on yield surface of polycrystalline copper		
shielding of nuclear technology structures - epoxy sur- face layers, concrete construction materials, and	06 p0856 N68-15988	15 p2539 N68-26337		
polymer films [FTD-HT-66-691] 06 p0873 N68-15409	Axisymmetric elastic/plastic problem for plate weakened by circular hole	Structural analysis of plastic spherical sandwich shells under hydrostatic pressure		
Adhesive polyethylene, and polyvinyl chloride layers	07 p1088 N68-16164	15 p2571 N68-26532		
for protective surface coatings against radioactive con- tamination	Finite difference analysis of elastic-plastic collapse of shell structures under blast loads	Flow stress analysis using tensile tests on titanum, zir- conium, and Zircaloy 2		
06 p0874 N68-15411	[SC-DC-67-1923] 07 p1088 N68-16220 Plastic fatigue embrittlement of steels for reactor	[ORO-3262-5] 15 p2485 N68-26613		
Epoxy coatings for radiation protection of metal, and concrete surfaces	vessels	Finite deformations of plastic circular arch and relaxation moduli of anisotropic linear viscoelastic		
06 p0874 N68-15413	[EURAEC-1892] 07 p1009 N68-17004	solids 15 p2571 N68-26626		
Neoprene coating technique for rain erosion tests on glass fiber polyester laminates	elastic-plastic problem for torsion of solid prismatic bar	Shear stress and activation energy and volume for deformation of silver and niobium alloys in solid solu-		
09 p1356 N68-19402	Successive approximation procedure for solving elastic-plastic problem for torsion of solid prismatic bar made of strain hardening material (NASA-TN-D-4391) 07 p1092 N68-17045	deformation of silver and niobium alloys in solid solu-		
Flexible urethane lacquer sealant for corrosion pro-	Statistical model for brittle deformation of stressed	[COO-916-13] 15 p2486 N68-26826		
[AD-665683] 11 p1717 N68-20734	elastic plate 08 p1252 N68-17714	Shape memory effect and martensitic transformation of titanium nickel		
Plastic powder coating of aluminum by fluidized bed	Flow equations for hard-plastic body in lubricated	16 p2676 N68-27269		
and electrostatic spray techniques [PLASTEC-18] 11 p1653 N68-21332	channel 08 p1252 N68-17716	Structural inhomogeneities in corundum boules due to residual stresses, plastic deformation, and mosaic		
Flexible epoxy resims and coatings [AD-666293] 12 p1895 N68-22696	Analysis of sheet metal compression, and plastic	structures 16 p2689 N68-27377		
[AD-666293] 12 p1895 N68-22696 Aerodynamic heat transfer measurements on hyper-	deformation minimization by rolling 08 p1182 N68-17717	Equations for axially symmetric state of isotropic		
sonic blunt cones with phase change coatings	Time dependence of stress, strain, and displacement	plastic material under Tresca strain 16 p2778 N68-27588		
[ARL-68-0004] 13 p2578 N68-26670 Polyurethane plastic coatings for rain impact erosion	distributions in viscoelastic and plastic solids under dif-	Finite deflection theory for viscoelastic multilayer		
protection	[NASA-CR-93354] 08 p1254 N68-18129	sandwich shells with rigid fillers 16 p2778 N68-27589		
[AFML-TR-67-355] 16 p2687 N68-27327	Deformation theory for solution of plastic buckling analysis on eccentrically stiffened circular cylindrical	Recovery of structural defects in refractory body		
Techniques for coating magnesium with epoxy resin films for paraboloid mirrors [NASA-TN-D-4734] 18 p3100 N68-30597	aerospace structure	centered cubic metals after irradiation and plastic		
[NASA-TN-D-4734] 18 p3100 N68-30597 Thermal stability and chemical resistance data for	[TR-0158/S3816-72/-1] 09 p1439 N68-18398	[BLG-424] 16 p2745 N68-28023		
epoxy polymers from phenylene usides	High temperature creep studies on unaltered, and	Computer program for calculating steady state deformation rates of cylindrical fuel elements		
[D1-\$2-0681] 20 p3511 N68-32898	recrystallized nickel alloys [NASA-CR-72367] 09 p1352 N68-18533	[BNWL-663] 16 p2707 N68-28129		
Poly/metal phosphinates/ as antistatic and protective coatings and lubricant thickeners [AD-671882] 20 p3511 N68-32957	Shock response experiments conducted with	Aluminum alloy deformation substructure and susceptibility to intergrunular stress corrosion cracking		
	Shock response experiments conducted with clamped circular mild steel plates [SU-DMS-67-36] 09 p1445 N68-19224	[ARL/MET-45] 16 p2685 N68-28189		
LASTIC DEFORMATION Analytical and experimental investigations of defor-	Elastic buckling and plastic collapse of circular tubes	Plastic deformation and radiation damage of lead samples at liquid nitrogen temperatures		
mation properties of reactive and high temperature	under hydrostatic pressure 10 m1605 N68-19931	17 p2898 N68-28380		

Heterogeneous disordering during plastic deforma-on of copper-platinum alloy

Review of elastic-plastic equilibrium equations and characteristic energy functionals related to initially continuous bodies [REPT-675D226] 11 p1795 N68-21115

11 p1713 N68-21073

tion of copper-platin [ORO-3091-8]

p2269 N68-24632 distributions in er load p2360 N68-25387 astic deformations 2266 N68-25456 er beams mounted ock tested by un-2365 N68-25531 effection response 2366 N68-25544 neet metal plastic 2301 N68-25627 all angle scattering ly deformed cube 2513 N68-25860 formation on yield 2539 N68-26337 herical sandwich 2571 N68-26532 its on titanum, zir-2485 N68-26613 ircular arch and inear viscoelastic 2571 N68-26626 y and volume for lloys in solid solu-2486 N68-26826 tic transformation 2676 N68-27269 ndum boules due tion, and mosaic 2689 N68-27377 state of isotropic 2778 N68-27588 elastic multilayer 2778 N68-27589 refractory body 2745 N68-28023 ing steady state lements 2707 N68-28129 ubstructure and errosion cracking 2685 N68-28189 damage of lead 18 2898 N68-28380 Analytical determination of plastic deformation and yield stress of metallic projectiles and targets on impact 17 p2980 N68-28666 Fatigue behavior of stainless steel under cyclic plastic strain resulting from differential expansion of cladding and uranium dioxide reactor fuel [TRO-1353/8/] 17 p2915 N68-28944

[NP-16905]

01 p0078 N68-10890

01 p0079 N68-10924

Selected papers from conference on plastic deforma-

Shear, tensile, and bend tests conducted to determine properties of diffusion bonded titanium alloys [AI-67-137] 02 p0216 N68-11374

SUBJECT INDEX (SU-DMS-68-T-74) Stress-strain relationships of tions, and approximate me moplasticity problems with los during sliding friction [NASA-TN-D-4716] (FTD-HT-67-255) [APS-CH-65]

627 613 chromium alloys [RTS-4391]

ion 960 77 Dic

IN. yer 89 edy itic 23 ule

and No. 80

2100 iem-1591 rma-789 low 612

in

387

ions

EX

tem-

1696

alogs sver-steri-

1949

ncks

456 531 mse stic

ring 960 337 rich 532 zir-

for

29

66 lic

	gation of p					luced	in bi-
nary allo	RANS-10	old rolli	-61	PROCE	-2001	NAG	20069
Visual	observatio	ima amo	X	ray	analysis	of	plantic

17 p2902 N68-29377 Proposed solution for small tions in thin plates and shells elastoplastic deforma-

18 p3173 N68-29630 eships of elastoplastic deforma-tate methods of solving ther-with loading considered 18 p3174 N68-29647

Varying striking velocity and bar length, plastic deformation and yield point, and stress-strain diagrams for analysis of impact tests on A1 and C steel using shock wave propagation theory

18 p3176 N68-29876 Plastic deformation effect on electrical resistivity of nickel and iron determined at different temperatures 18 p3088 N68-29910

Adsorbed surfactants influence on deformation and friction coefficient of lithium fluoride single crystals during sliding friction 18 p3080 N68-29918

Plastic deformation waves and temperature measure-ment during axial impact on annealed aluminum tubes [AFOSR-68-0826] 18 p3092 N68-30470 Welding embrittlement of steels outside of visible heat-affected zone region due to plastic deformation

ICOA-NOTE-MAT-19] 18 p3093 N68-30473 Tool shape effect on deformation of nonplastic steel

18 p3093 N68-30523

Plastic deformation in Al-78 percent Zn alloys due to grain boundary sliding, diffusion creep, and dislocation interactions [AD-670800] 19 p3292 N68-31560 Bibliography of specyroscopy literature compiled by

19 p3294 N68-31701 Plastic deformation of alumi through grain boundary sliding [ARL/MET-70] um-zinc eutectic alloys 19 p3294 N68-31850

ns for calculating plastic under biaxial loading 19 p3382 N68-31946 Elastic buckling equation buckling of plates and shells [NASA-TN-D-4706]

Effect of plastic strain o of magnetic properties of sil [RTS-4542] temperature dependence on iron alloy 20 p3561 N68-32303

Plastic deformation influence on saturation mag-etization of ferromagnetic nickel copper and nickel

20 p3562 N68-32312 Plastic deformation, heat resistance, and creep strength of austenitic steel pipes for superheaters [CE-TRANS-4745] 20 p3497 N68-32588

Metallographic analysis of allotropic phase transfor-ations in cerium

20 p3500 N68-32866 Hot torsion test method for determining plastic properties and hot-workability of steels 20 p3502 N68-33000

Applications of mathematics in mechanical en-gineering - boundary value problems, shear and defor-mation processes, mechanical properties of materials, and control system theory [FTD-MT-64-558] 20 p.3515 N68-33115

20 p3515 N68-33115 Distribution of slip line direction in plastic deforma-

20 p3603 N68-33120

Neutron irradiation effect on plastic deformation of iron single crystals with different carbon contents stress-strain curve data [ORNL-TR-1930] 20 p3506 N68-33443 Neutron irradiation effect on plastic deformation of iron single crystals with different carbon content - work

[ORNL-TR-1931] 20 p3506 N68-33444

Plastic deformation in closed cycle under strain and bending of cross section of stressed surface [RTS-4707] 20 p3606 N68-33507 Experimental investigation of mechanisms of deformation, twinning, and brittle fracture of chromium-iron and tungsten-rhenium alloy systems [RTS-4599] 20 p3507 N68-33600

um and magnesiu

21 p3702 N68-33755 Generalized strain measure concept applied to linearization of basic stress-strain curves of compres-sive, shear, and tensile nature 21 p3786 N68-33810 Deformation and stress calculation programs for three dimensional elastic plastic solids with slits [NASA-TM-X-52440] 21 µ3788 N68-34049

Geometric and kinematic motion of elastic and plastic body undergoing finite deformation [AD-672352] 21 p3789 N68-34337 21 p3789 N68-34337 Cam mechanism wear under conditions of plastic

(FTD-HT-67-270) 21 p3698 N68-34466 Large plastic deformation of thin spherical shorith reinforced openings subjected to internal pressu

[DOMITT-1-38] 21 p3790 N68-34547

Moire method used to study dynamic response of viscoelastic material with large deformation 22 p3968 N68-34859 tion measured in lead Plastic stress wave propaga

22 p3968 N68-34879 Metal fatigue and plastic deformation effects on air-

[FTD-HT-67-289] 22 p3971 N68-35182 Correlation betw tructure, creep, and

plastic deformation of nickel all [FTD-MT-24-331-67] 22 p3890 N68-35313 Phenomenological and physical aspects of self-constent, complete theory of Kirkendall effect (UL-527-FN) 22 p3938 N68-35951 sistent, complet [JUL-527-FN]

Stress state of thin-walled tubular steel samples subjected to biaxial tension in plastic deformation domain 22 p3975 N68-35988

Activation energy and creep analysis measurements of high alumina refractory alloys 23 p4080 N68-36060

nite element method used in analysis of elastic-tic shells of revolution under axisymmetric loading 23 p4180 N68-36420

Methods for determining shape and rate of plastic eformation during stamping and pressing of sheet [FTD-MT-24-129-67] 23 p4068 N68-36605

Analytical method for determining velocity field and plastic deformation rate in pressing through vectangu-lar die

23 p4068 N68-36607 n studies of super

Deformation [ORO-3091-7] 23 p4154 N68-36824 Effects of surfs gs on plastic deformation of copper single crystals (ORO-340)-31 23 p4076 N68-36831

Plastic deformati [ORNL-TR-1823] alt single crystals 23 p4077 N68-36864

n effects on plastic deformation e crystal iron carbon alloys 23 p4079 N68-37097 Neutron irradiation effects of yield strength of single crystal in [ORNL-TR-1932]

Critical assessment of discrete lattice and dispersed barrier hardening theories of thermally activated defor-mation of metals [NASA-CR-97350] 24 p4267 N68-37870 24 p4267 N68-37870 Plastic deformation during complex loading of tubular steel 45, brass, copper, and Duralumin D16 samples

[FTD-MT-24-187-67] 24 p4349 N68-37955

Finite element method for plastic bending analysis of INASA-CR-973731 24 p4349 N68-37964 ation in brittle and ductile fracture 24 p4268 N68-38016

U POLYMERIC FILMS

NT TRESCA FLOW

Equations for solving initial and boundary value roblems in elastoplastic flow in longitudinally ressed, azisymmetric notched rods NASA-CR-66552] 06 p0921 N68-15561 stressed, axisymmetr [NASA-CR-66552]

m motion in sintering of circonia markers 12 p1894 N68-22107 Plastic flow from dislocation calcium fluoride spheres with zin es for ani

Fundamental plastic flow eq body and yield points from Hill of 14 p2368 N68-25591 Drag resistance in viscous p astic flow around blunt

16 p2645 N68-27593

Effect of surface active materials and adsorption layers on plastic flow before rupture and plastic rupture in metals such as in, lead, and copper [NASA-TT-F-11737] Is p3090 N68-30183 runtic metal flow during two manufacturing of can-shaped co (RTS-4751) way extrusion used in 22 p3881 N68-35257

Tear growth and propagation from cracks in plastic [TRANS-1531] 22 p3896 N68-35519

PLASTIC MATERIALS
U PLASTICS PLASTIC MEMORY

Stability of parallel flows of fluids with memories [REPT.-06503-3-T] 02 p0199 N68-11483 al steady shock waves in 17 p2920 N68-28673

PLASTIC PROPELLANTS

Flame propagation over surface of plastic propellant in oxidizing atmosphere
[AFOSR-68-1163] 18 p3189 N68-30643 Determination of yield stress in parallel plate plastic ERDE-14/R/67] 21 p3757 N68-33979

PLASTIC PROPERTIES

NT ELASTOPLASTICITY

NT THERMOPLASTICITY

NT VISCOPLASTICITY

NT YIELD POINT

Effect of magnesium, cerison and zirconium residual additives on nickel planticity
[ORNL-TR-1642] 01 p0075 N68-10332 Elastic and plastic tensile properties of 5Al-2.58n titanium alloy sheets [AMRA-TR-67-22] 01 p0077 N68-10741 Propagation of elastic and plastic strain pulses in bounded solids [AD-659422] 01 p0145 N68-10831

Longitudinal shear crack in infinitely narrow plantic 02 p0273 N68-11028

Approximate solution for indentation of sloping mes in rigid plustic media in terms of mean pressure 02 p0278 N68-11679

Evaluation of fiber-reinforced composites strength INASA-CR-90509] 02 p0225 N68-11698 Derivation of basic plasticity equations for multiaxial plastic stress analysis [ORNL-4138] 03 p0420 N68-12203 03 p0420 N68-12203 d in Plexiglas targets by Short duration shocks industimpact of thin Plexiglas plates

03 p0357 N68-12400 Finite element approa-to analyze behavior of el-tion under axisymmetrica [NASA-CR-91682] sing displacement model e-plantic shells of revolu-05 p0745 N68-13942

ty and superplasticity (NASA-TN-D-4346) 05 -0656 N68-13973

Plastic and fatigue properti s of heat resistant stain-06 p0853 N68-15356

Laplace transformation and determination of condi-ons for existence of decaying solutions of cylinder end MRC-TSR-7621 06 p0923 N68-16088 Large deflection analysis of elastic perfectly plastic

[PB-175611] 07 p1091 N68-16877 Superplasticity of lead-tin alloys and fracture of duc-[AD-664823] 10 p1539 N68-19939 Work hardening of plastically nonhomogeneous

[TR-549] 10 p1579 N68-20178 Nonhomogeneous strain accumulation and plasticity odel for cyclic loading

10 p1610 N68-20542 Stress-strain model for analysis of frictional soil behavior under load [R68-4] 15 p2463 N68-26808

Polymeric and pi rials used to prevent cor-FTD-HT-66-5401 18 p3097 N68-29631

Iterative solution for calculating deformation and stress concentration near slits in elastic-plastic solids (NASA-TN-D-4717) 18 p3 (77 NSS-36043 Initial plastic behavi

AFOSR-48-11091 18 p3096 N68-30728 ying atoms on tensile

Influence of subs properties and plasti [AFML-TR-68-18] 18 p3096 N68-30754 city, and corresion resistance with liquid lithium 20 p3603 N68-33095

tic tri slii [N

IE U

PLAT

PLAT

by [N

res roc [C

ten nei

ing

me pro

ele ele

Sys

[PE

I

CI

chi of p

EL

witi ion [CC

SU

PLASTIC TAPES Method for analyzing piecewise linear behavior of astic-plastic grid systems 22 p3970 N68-35048 Elastic-plantic behavior determined for unbraced, multi-story, planar frames 23 p4180 N68-36385 Influence of plastic on strongth of welded je [FTD-MT-24-157-67] on in welding process 23 p4068 N68-36619 Irradiation of uranium-gas evolution in copper, fi lybdenum alloys, fission in-induced plasticity, and atomic characterist [NAA-SR-12549] elling phenomena 23 p4101 N68-36726 of arc-cast and powder 24 p4266 N68-37516 Induction heating and deformation rolling for im-proving strength of spring steel 24 p4269 N68-38096 PLASTIC TAPES eric particle sequential Tape programn

07 p0995 N68-16310 [PB-175925] Dip coating method for ma ufacturing sterilizable hattery tape separate [NASA-CR-94766] 14 p2193 N68-25105

PLASTICITY
U PLASTIC PROPERTIES

PLASTICIZERS

Flame extinguishing pro sed as plasticizing agents in rties of aqueous jellies 02 p0[77 N68-11464 Tensile properties of plasticized polyvinyl chloride as function of processing variables and environmental ex-

AD-661402] 04 p0526 N68-13440

Additives, oxidizer blend, and plasticizer concentra-tion for solid rocket motor 260-SL-3 [NASA-CR-72262] 06 p0896 N68-16051 Chemistry of organ [JPRS-44591] us compounds 08 pl 144 N68-18063

Irradiation effects on polyvinyl chloride plasticizers 18 p3028 N68-30479

PLASTICS

NTNT ACRYLIC RESINS ADDITION RESINS ADDITION RESINS
EPOXY RESINS
PHENOLIC RESINS
PHENOLIC RESINS
POLYBUTADIENE
POLYESTER RESINS
POLYESTER RESINS
POLYETHER RESINS
POLYETHYLENE TEREPHTHALATE
POLYETHYLENES
POLYISOBUTYLENE
POLYMETHYL METHACRYLATE
POLYPROPYLENE
POLYTROPELENE
POLYTROPELENE

NT TN

NT NT NT

NT

NT

POLYPROPYLEME
POLYSTRENE
POLYSTRENE
POLYVINYL ALCOHOL
POLYVINYL ALCOHOL
POLYVINYL CHLORIDE
REINFORCED PLASTICS
SYNTHETIC RESINS
TEFLON (TRADEMARK)
THERMOPLASTIC RESINS
VINYL COPOLYMERS
VISYL COPOLYMERS NINI

NT NT

Test firing to determ ne erosion rates of plastic nozor 4-inch diameter rocket engines 1757] 02 p0262 N68-11581 [CARDE-TN-1757]

Sensory, burning, chemical and infrared spectro-copic tests for identification of plastics GE/K-67-83] 04 p0524 N68-12806 [GE/K-67-83]

Accelerated aging effects on polyester urethane rub-bers, and polyether urethane rubber [ERDE-21/M/66] 04 p0525 N68-13077 04 p0525 N68-13077

Low temperature effects on mechanical, electrical, ad thermal properties of thermoplastics, thermosets, ad plastic foams and plastic foam [PLASTEC-30] 04 p0526 N68-13220 rescence in plastics after X ray or

04 p0559 N68-13691 tering handbook for nuclear radiation damage

Engineering nantico effects on plastics [MPS/INT-CO-66-25] 06 p0858 N68-15832

Weight loss, and optical characteristics of plastic folls exposed to gamma radiation (BMWF-FB-W-67-14) 06 p0858 N68-15840 Flammability and atm of plastics and nonm spacecraft cabins [TR-0158/3250-20/-8] nosphere contaminant hazards etallic materials in manned

08 pl 136 N68-17925

Yield condition providing for second order strain ef-fects in perfect plastic material, and loading function for strain hardening material TR-48] 09 p1440 N68-18464

effects on polymer material properties in accelerator enviro AEC-TR-69201 10 p1542 N68-19839

Wear rate and friction coefficient of steel sliding on dymer laminates determined in liquid nitrogen and NASA-TN-D-4463]

10 p1535 N68-20325 Electrical breakdown cha tric materials and thin films layers, and oxide surface file [FTD-MT-24-148-67] characteristics of solid dielec-ns - organic glass and celluloid 12 p1954 N68-22135

Final stage of pulse electrical breakdown during solid dielectric discharge 12 p1954 N68-22137

Infrared spectra of nuclear irradiated plastics and 12 p1895 N68-22689

Smoke chamber tests of burning and smoldering woods and plastics [UCRL-70794] 13 p2166 N68-23106

Annotated bibliography of works published 1959-66 on applications of plastics, composite materials and synthetic fibers [TDCK-50062] 13 p2090 N68-23980

[SC-RR-67-832] 14 p2353 N68-24360

Adhesive properties polymer, and mineral [NASA-CR-62074] 14 p2272 N68-25096

stic circular arch and

15 p2571 N68-26626 Equations for axially symmetric state or moreopa-plastic material under Tresca strain 16 p2778 N68-27588

Automatic curing of reinforced plastics in space 16 p2683 N68-27951

Stress-strain relations in co strain rates for selected plastic n [NOLTR-67-178] ion at medit 17 p2904 N68-29400 Minimum weight design of plastic circular and annu

(ar plates (TR-18) 19 p3375 N68-31146 Tests to determine fea frangible rail top plastic rocket vehicles [MDC-TR-68-59] feasibility of using water filled stic trays for braking monorall

20 p3457 N68-33312 Tabulated data [PLASTEC-33] ta on exp lastics compatibility 21 p3757 N68-34451

Uniterence papers on plastics
[PLASTEC-35] Subject index, biblio and code description of 21 p3709 N68-34570

Wave front stress relaxation in one dimensional non-linear inelastic material with temperature dependence, and rate sensitive plastics with temperature depen-dence and yield point (REFT.34) 22 p3972 N68-35432

22 p3972 N68-35432 Survey of plastics sandwich constructions and potential applications of techniques
[PLASTEC-34] 23 p4179 N68-36189

Ferromagnetic and glass-fiber la [JPRS-46453] laminated plastics 23 p4081 N68-36369

Production and properties romagnetic plastic of heat-resistant fer-23 p4081 N68-36370

Fire hazards and safety of co mercial plastics 23 p4082 N68-36535

Time dependence of mecham wire reinforced plastic cition, loading cycles, and vibra [AFML-TR-66-404, PT. 2] mical behavior of berylli-omposites on load duraic composites

24 p4272 N68-38124

U METAL PLATES

PLATE THEORY

Flexure problems for thin rect [AE-1125] ilinear plates 01 p0 45 N68-10782 Application of extended Kanto stress analysis of clamped rectangs to uniform lateral load [NYU-AA-67-107] 13 13 p2164 N68-24296

Plate theory comp sticity theory for static and dynamic respon [AFOSR-68-0577] ular plate 15 p2572 N68-26744

Deflection, mome energy for symmetri Ritz average method shear force, and potential loaded circular plates usin 17 p2978 N68-28343

Plate theory and tables for resonant equencies of uniform, thin, elastic, isot AE-190S] 17 p2979 N68-28410

PLATEAUS tion of lower plateau of main

06 p0836 N68-15394 PLATES

Titas CTO-351] 01 p0120 N68-10921 cation of Green and

20 p3603 N68-33140

PLATES (STRUCTURAL MEMBERS)
NT ANISOTROPIC PLATES
NT ANNULAR PLATES
NT CANTILEVER PLATES
NT CIRCULAR PLATES
NT CORRUGATED PLATES
NT CORRUGATED PLATES

NT NT NT ELASTIC PLATES END PLATES GIRDER WEBS ORTHOTROPIC PLATES PERFORATED PLATES POROUS PLATES

REINFORCED PLATES

Welding of very thick steel plates by molten flux EURAEC-1609] 01 p0067 N68-10044

theories of rods, plates, 01 p0145 N68-10833

Integral transforms problems subjected to be from singular load distrit semi-infinite plates applied to plate ben oundary conditions emans butions acting on free edge [TR-6] 02 p0273 N68-11098

Basic equations stretching and bendin ment method [NASA-CR-90500] and dependent variables in ag of plates applied to finite ele-02 p0277 N68-11612

joint thermal conductar d experimental work on a der boltheads and interfa Literature survey of between bolted plates a mail stress distribution stress distribution NASA-CR-905491 02 p0279 N68-11776

Southwell plot application to elastic columns and plate structu (SUDAAR-296) on to stability test data of 03 p0421 N68-12231

Recapitulation of re ics and vibration of h ned in study of dynam-sus and layered plates [AFOSR-67-2368] 04 p0589 N68-13384 elliptical apertures in

Stress distribution oderately thick stres 04 p0590 N68-13774

Stress concentration around nonsymmetrically reinforced hole in plate 08 p1245 N68-17374

Three dimen lysis for determining effects of heat generation in plat [NASA-TN-D-4326] 08 p1260 N68-18122

Numerical solution of time dependent, constant pro-perty Navier-Stokes equations for entrance region of unddenly accelerated parallel plates

11 p1681 N68-20576 Singularities as ethod of integral tran roblems during bendin ory of plate bending and to solve boundary value

12 p1975 N68-22085 effects on stability of inclined plates at nondifviscous flow between parallel fusive limit

12 p1981 N68-22086 Internal stress state of thin elastic layer and sa iste determined by asymptotic integration of

12 p1977 N68-22408

Energy flow method for predicting mechanical shock 14 p2365 N68-25530

Photoelastic analysis of stress distribution in plates loaded through pins [NEL-311] 16 p2777 N68-27426

Variational methods used in linear and nonlinear analysis of dynamic buckling, shear deformation, and vibration of elastic plates and columns

18 p3176 N68-29928 sticity problems of plates and diation - sequential analysis ap-tion and thermoelasticity equa-Dynamic thermosissells in presence of radia 18 p3178 N68-30224

EX

Onai

410

394

921

and

140

lux

44

33

98

in le-

12

or-ce

76

of

31

84

in

74

14

of

22

16

15

0

of passivation film on nesium chloride [EURAEC-1918]

Catalytic and chem with platinum, chros

Elastic and inelastic fast nes ta'um, rhenium, and platinum [ANL-7363]

[COO-1354-13]

07 p1010 N68-17005

08 pl138 N68-17227

ron scattering from tan-

08 p1212 N68-17400

cal reactions of aluminum oxides

Spatial correlation spectrum of field of plate vibra-ons under wideband random loading 18 p3182 N68-30660 ee dimensional photoelastic tests for stress dis-on in uniaxially loaded thick plates containing tribution in slits [NEL-288] 19 p3378 N68-31627 analysis of stress distribution between fasteners and plates [NASA-CR-96157] 19 p3381 N68-31846 Elastic buckling equations buckling of plates and shells ar [NASA-TN-D-4706] ns for calculating plastic under biaxial loading 19 p3382 N68-31946 Laboratory simulation of hypervelocity projectile impact on thin structural plates [UDRI-TR-68-18] 20 n3601 M45 and Effect of N waves at oblique simply supported plate to tr que incidence on response transient londs 20 p3604 N68-33168 of simply supported [NASA-CR-1176] Static and dynamic elasticity, and viscous damping of laminated and sandwich plates, shells, and beams [NASA-CR-96738] 21 p3789 N68-34285 Analysis of elastic equlibrium of isotropic thick symmetrical plates [FTD-HT-67-38] 23 p4180 N68-36476 Flutter behavior of plates expo with concurrent transverse and p [NASA-CR-97255] es exposed to supersonic flow e and plane loadings 23 p4184 N68-37267 Linear equations for determining response of transversely loaded plates in inclastic range 24 p4346 N68-37508 PLATFORMS Principal design features of extravehicular work plat-[NASA-CR-94927] 15 p2563 N68-25874 PLATING NT ELECTROPLATING NT NICKEL PLATE Plating, rolling, and annealing techniques for production of bimetal strips with Al-Zn alloys [FTD-HT-67-246] 02 p0217 N68-11596 Effects on heat flux rate of heating surface material sing plated and unplated stainless steels during ucleate boiling 18 p3186 N68-29900 PLATINUM Spectrophotometric determination of platinum /4/ by solvent extraction with metal chelate [NASA-TT-F-11380] 01 p0019 N68-10336 High pressure effects on thermoelectric power and esistance of aluminum, gold, platinum and nickel from som temperature to 1300 deg K. COO. 1108.4651 room temperature [COO-1198-465] 01 p0125 N68-10800 Theory and application of platinum film gages for temperature and heat flux measurements in shock tun-[DLR-MITT.-67-15] 02 p0210 N68-11154 High energy charge cross sections measurement for incident protons and atomic hydrogen in various gases and spectra of platinum in decay of gold-195 (ORNL-TM-1988) 05 p0708 N68-14224 Compton spectrometry of gamma rays emitted dur-ing thermal neutron irradiation of platinum [LA-TR-67-80] 03 p0712 N68-14422 Brief account of field ion microscopic studies of metal radiation damage correlated with mechanical CU-3551-91 05 p0677 N68-14596 Decay of platinum 199 using gamma and conversion sectron spectrometers and half life measurements of old excited states [AE-300] 06 p0886 N68-15885 Kinetics of electrode processes in chloroplatinate ion system - equilibrium polarization curves on platinum electrode 06 p0794 N68-15962 Economic analysis of platinum group metals [PB-176155] 07 p1006 N68-16173 Defects in pure platinum produced by fast neutron irradiation [CU-3551-7] 07 p1007 N68-16315 Influence of carbon, platinum, and magnesium altoride on corrosion of stainless steel, and formation passivation film on steel samples immersed in magnitude of the control of the control

Activity of platinum catalysts in solution - kinetics of latinum-naygen reaction with hydrogen and of latinum-hydrogen deposition using double pulse Electrically heated platinum wire for monitoring reactor temperatures [RISO-M-643] 23 p4062 N68-36716 23 p4062 N68-36716 orption effects on platinum Oxidizable an INRL-6627, PT. 2] anodic behavior (NRL-6737) 08 p1141 N68-17857 norption kinetics of adsorbed organic layers rogen atoms on platinum electropes 08 p1142 N68-17958 24 p4214 N68-37724 OB p1142 N68-17958
Heat treatment and chemical etching of platinum studied for effects on specific reaction rate of chemistred oxygen with hydrogen [NRL-6622] PLATINUM ALLOYS Heat of fermation of copper-platiness alloy measured liquid tin solution calorimetry
[UCRL-17615] 01 p0150 N68-10393 01 p0150 N68-10393 X ray diffraction analysis copper-platinum alloy and ef on its mechanical properties [ORO-3091-9] of uniaxially deformed fect of long-range order Thermodynamic electro relative to platinum [RAE-TR-67185] otive force of mercury 11 p1713 N64-21072 09 p1408 N68-18627 during plastic deforma-Heterogeneous disorders tion of copper-platinum alle [ORO-3091-8] Characterization of anodically formed oxide film on platinum electrodes and electrochemical control and measurement instrument 11 p1713 N68-21073 09 p1295 N68-18885 Free energy of mixing solid cobalt with platinum aln of lattice vibrations in defect atoms 10 p1555 N68-19682 16 p2640 N68-27659 platinum crystals with SGAE-PH-60/19671 Field ion microscope image formation and ion cur-rent measurement, and photomicrographic pattern unalysis and structure of platinum-cobal alloy 17 p2899 N68-28437 Electron, and ion microsco fects in quenched platinum [NASA-CR-93720] pic study of structural de-10 p1576 N68-19792 17 p2899 N6E-28437 ce studies of pintinum in stinum-iridium alloys 18 p3020 N6E-29864 of bulk and powder latinum-mercury interfac scitance in Faradaic reaction ce and double layer ns 10 p1484 N68-19911 Separation of trace amounts of plutonium from macro amounts of platinum by coprecipitation with ferric iron followed by ion exchange on inorganic exchange materials
[LA-3149]
10 p1485 N68-19967 20 p3496 N68-32555 n and palledium pure ratures 20 p3498 N68-32673 Heat resistance of pla metals and alloys at high to eters tested and evalu-easurement 10 p1531 N68-20324 ated in cryogenic temperate [NASA-TN-D-4499] influence of structural o perties of cobalt-platinum a on on magnetic pro-20 p3501 N68-32963 Flow of conducting liquid high fields on surface charge its study of silicon solar cells n annular gap, effects of distributions, and materi-PLATINUM COMPOUNDS e and kinetics of Nuclear magnetic re platinum complexes 11 p1746 N68-21037 Kinetics and mechanisms associated with interaction of molecular oxygen and platinum ribbon studied under conditions similar to that of upper atmosphere [NASA-CR-94083] 11 p1690 Nol-21318 13 p2016 N68-23777 ing characteristics of al-22 p3820 N68-34888 Single crystal structure analysis on transition metal complexes by complete matrix least squares method 12 p1832 N68-22005 of triffuorophosphine and platinum 23 p4005 N6E-36173 Preparation and react emplexes of nickel, palls Iron free spectrometer s ties of electron binding PLATINUM ISOTOPES energies in pla (UUIP-553) Lande splitting factor for first atomic energy level ex-citation of platinum 196 [LYCEN-6785] 14 p2312 N68-25070 12 p1928 N68-22434 Effects of platinum electrode preparation, pretreat-nent, and solution variables on hydrogen adsorption and electrode potential PLAYBACKS 13 p2009 N68-23133 Recording and playback procedures for digital mag-etic tape units used with Mercury and Deuce compu-Photoemission and optical properties of cobalt, pal-ladium, platinum, and gadolinum [SU-SEL-67-045] 13 n2137 Mas 2244 [RAE-TR-67081, PT. 1] 03 p0328 N68-12801 Decrease in oxidation rate electrode under steady state or [NRL-6639] tion rate of hydrogen on platinum Tape recording and playback of reduced bandwidth levision transmission signals 13 p2019 N68-23950 contings to prevent nitrogen 18 p3035 N68-29885 Palladium and platin agression and embrittle (NASA-TM-X-52324) Rapid reduction method of rhythm and rate informa-tion in large scale electrocardiogram monitoring [NASA-TN-D-4751] 19 p3218 N68-32100 16 p2681 N68-27693 Heat and mass transfer interactions with exothermic wall reaction measured in platinum tube and carbon monoxide flow PLENUM CHAMBERS Flight-prototype ammonia-propellant storage and feed system using tilanium tank with stainlass steel plenum chamber [NASA-CR-91278] 04 p0564 N68-13235 17 p2988 N68-29549 Nuclear magnetic resonance studies of platinum in latinum-molybdenum and platinum-iridium alloya 18 p3020 N68-29864 Montique technique for studying nuclear hyperfine interactions in platinum 195, tungsten 182, and tungsten 183 PLETHYSMOGRAPHY
NT ELECTROPLETHYSMOGRAPHY Electrodermal and plethyamographic studies of un-orditioned and conditioned stimulus TR-21) 06 p0778 N68-15695 19 p3326 N68-31152 TR-21 Heated platinum wire used in sealed carbon dioxide laser system to increase output power [SRL-TR-11605] 20 p3493 N68-32584 PLEXIGLASS (TRADEMARK)
U POLYMETHYL METHACRYLATE PLOTTERS NT X-Y PLOTTERS etic argon beams by heated Scattering of mon platinum targets [T-68-1] Automatic multipurpose system for plotting digital nuclear data [INP-560/PS] 02 p0186 N68-11633 20 p3543 N68-32609 Hydrogen overpotential and electrode kinetics for latinum in HCl solutions over large range of associate activation over large range of associate activation and activation activation and activation activation and activation activation activation and activation activ g for Calcomp digital incre-Computer programmental plotter
[EUR-3634.E] 21 p3653 N68-34503 Far infrared spectra and stru-latinum 2 complexes and vill rganophosphorus compounds cture of palladium 2 and ational spectra of some Computer program for producing inked graphs from subroutines defining functions - Calcomp plants:
[UCRL-30250] 05 p0634 N68-14984 22 p3821 N68-35015 Mercury Autocoder programs 320 and 321 for for atomatic plotting of root locus diagrams on incremen-Oxydative plati 22 p3822 N68-35092 RAE-TR-672471 06 p0804 N68-15177 Photoemission and optical reflectivity measurements on cobalt, palladium, platinum, and gadolinium 23 p4148 N68-36125 Automatic pletting of Nyquist diagrams (RAE-TR-67246) 08 p1194 N68-18028

to ca

DP-N

(EUR

plutos LA-3

Soh [LA-3

Plut

TOWN

Crit

(AHSI

Plut (EUR

Ana

fuel (BNW

The

UCRI

Heat um and

Prog muclea trolytic and plu (ANL-

Anal

Photo modern (JAER

Ignit

Pu a

ARH-

tivity,

QR-16

Elect

Single metal b

Gene

Self-i

percent

Speci nin for to (EUR-3

Pluto

kFK-6

Neut

(IN-113

nuclear

Deter solvent n-butyle [ARH-S

Stand of plutor [LA-384

modyna IORNL

fuel perf

selected [LA-395

Phase

and nits

PLOTTING CALCOMP 570 plotter for stereoscopic drawing of hree dimensional lines and curves - computer pro-NOLTR-68-48] 19 p3247 N68-31388 FORTRAN 4 program for plotting curves on digital S-183-R65] 20 p3441 N68-32348 PLOTTING. Computer programs for plotting pollen diagrams [NASA-CR-89979] 01 p0054 N68-10065 Computer programs to plot curves and/or solve non-linear algebraic equations
[KAPL-M-6709] 01 p0084 N68-10473 Geometrical techniques for mechanized plotting of condurder curves on lofts 04 p0517 N68-13860 PORTRAN 4 computer program for multichannel pulse height analyzer spectra, calculated photon number, and energy spectra plotting [NASA-CR-93211] 08 p1151 N68-17554 Effectivenem of line printer directed by DOT-PLOT computer program 13 p2036 N68-24105 FORTRAN subroutines for plotting and drawing of three dimensional solid surfaces [NASA-TM-X-1598] 16 p2699 N68-28240 IGRAPH-A FORTRAN subroutines for isometric [PA-TR-3679] 18 p3102 N68-29818 Digital computer program calculating and plotting root loci of eigenvectors [BRL-MR-1924] 18 p3106 N68-30514 18 p3106 N68-30514 CALCOMP 570 plotter for stereoscopic drawing of tree dimensional lines and curves - computer prothree dimensional grams included [NOLTR-68-48] 19 p3247 N68-31388

U PLOTTERS PLUG NOZZLES

Base bleed effects on plug nozzi [ARC-R&M-3466] o3 p0411 N68-12655 Performance evaluation of annu-sion-deflection nuzzles including at transcoic Mach numbers [NASA-TN-D-4462] annular plug and expan-ding external flow effects

10 p1456 N68-20330 Cold flow tests of serodynamic characteristics of plug nozzle configuration for turbojet engines operat-ing at supersonic speeds [NASA-7M-X-1619] 18 p3157 N68-29953

18 p3157 N68-29953 etry on performance of col-h numbers from 0 to 2.0 23 p3983 N68-36132 Effects of shroud geometry lapsible plug nozzle at Mach no [NASA-TM-X-1657]

PLUGGING Off-gas filter plugging in primary reactor of fluidized at fluorine volatility process plant IMI-X-490] 12 p1841 N68-22931 bed fluorine ve [BMI-X-490]

Dynamic characteristics of sodium oxide plugging in-[LA-DC-9423] 16 p2665 N68-28142

PLUM BROOK REACTOR

Computer methods for calculating radiation shield design for Plum Brook reactor HB-6 heamhole facility [NASA-TM-X-1461] 01 p0089 N68-10133

Fast and thermal neutrus flux measurements in test cavity outside HB-6 beam port in Plum Brook reactor using sulfur pellets and gold folls (NASA-TM-X-1497) 06 p0875 N68-13643

Plum Brook reactor support calculations - mathematical model for fuel utilization, power distribution in fuel loading, and approximate predictions of xenon region translated.

NASA-TM-X-1496] 06 p0877 N68-16056

U LEAD COMPOUNDS U METAL HYDRIDES

PLUMES NT ROCKET EXHAUST

Variation of concentration in plumes and building (BNWL-SA-1400) 02 p0232 N68-11506 Oscillating air stream characteristics by vane echanism and computer model for oscillating strady mechanism and e-wind plume [NYO-3673-2] 08 p1180 N68-17226

Conference papers on rocket base heating problems, and behavior of liquid rocket propellant jet plumes [NASA-TM-X-53711] 08 p1238 N68-18082 Rocket vehicle base heating problem, and liquid rocket propellant plume characteristics

teristics 08 p1258 N68-18083

Computer programs for predicting radiative heat transfer for Saturn exhaust plumes 08 p1259 N68-18092

Spectral emission and radia rocket propellant plumes ance calculations for solid 08 p1259 N68-18093

Inversion techniques for measuring temperature and pressure distribution in liquid rocket propellant plumes

08 p1259 N68-18100 Accuracy of radiative heat transfer and flow field solutions in rocket plume calculations

08 p1260 N68-18111 Linear and nonlinear temperature inversion methods for rocket plume technology, and vertical temperature profile determinations

08 p1260 N68-18112 Base heating model test facilities, and methods of ob-taining design numbers for full scale plume radiation 08 p1260 N68-18113

Engineering analysis of shroad, temperature control, and plume heating in recommended Voyager spacecraft configuration [NASA-CR-93325] 09 p1437 N68-19161

Research on buoyant plumes [NYO-3685-13]

12 p1869 N68-22841 Approximation of ramjet exhaust plume effects on external pressure of nozzle extension of X-15 aircraft [NASA-TM-X-1571] 14 p2336 N68-24614

Meteorological and particle studies related to health physics - plume rise, site evaluation and calculation, diffusion and transport spectra economies there n and transport, spectra, scavenging, theory,

and air pollution (AECL-2787) 24 p4284 N68-38375 Validity of popular plume rise formulas applicable to tall chimneys

24 p4255 N68-38376 Effect of wake flow on variation of concentration in plumes and building wakes 24 p4255 N68-38383

Plume rise and dispersion near shoreline of large lake with flow patterns dominated by lake breeze 24 p4285 N68-38389

Plume diffusion measurer from continuous point source ets at medium range

24 p4285 N68-38392 Summary of climatological measurements applicable to radon, wind profile, plume rise, and smoke diffusion

24 p4287 N68-38401 Total plume depletion by ground surface absorption calculated via one dimensional parabolic diffusion equation 24 p4290 N68-38422

PLUTO [PLANET]

Tabulations of trajectory data for one way trips from Earth to Saturn, Pluto, Uranus, and Neptune via Jupiter swingby [NASA-CR-61186] 05 p0737 N68-14508 Minimum energy trajectory data for Jupiter, Saturn, Uranus, Neptune, and Pluto [NASA-CR-93783] 10 p1591 N68-19907 PLUTONIUM

Plutonium content and i plutonium nitrate solutions [NBL-239] tent and isotopic assay analyses for 01 p0024 N68-10755 Phase diagrams and lattice parameters of cubic and pseudo cubic phases of Pu-O compared with those of Ce-O, Pt-O and Tb-O [EUR-3563.E] 01 p0025 N68-10783

Behavior of plutonium metal under atmospheric ox-

01 p0078 N68-10908 [AWRE-0-4/62] Neutron spectra evaluates moderated plutonic on of experimental data on water moderated plutonium lattices [RT/FI/67/15] 02 p0238 N68-11538

Schematic diagrams of decay chains for fission roducts of uranium and plutonium along with half life f nuclides, branching fractions and literature (USNRDL-TR-67-3) 02 p0247 N68-11543

Spectrophotometric determination of laurylamine eaction constants with cyclohexane for plutonium pu-(CEA-R-3118) 03 p0318 N68-12725

Computer codes for neutron flux spectra of plutonium-water lattices
[GA-7562] 03 p0380 N68-12726 03 p0380 N68-12726

Nitrate solution, amion exchange technique for purification and concentration of photonium [LA-3499] 03 p0319 N68-12791

utonium use as fuel for pressurized water reactor and breeder reacto (EURAEC-1884) 05 p0691 N68-14001

Removal of silicon dioxide from plutonium processing anion exchange resin by sodium hydroxide RFP-1037] 05 p0617 N68-14029

Design requirements and operating characteristics of plutonium fuel assembly of fast flux test facility [BNWL-SA-1434] 03 p0692 N68-14129

Fully transistorized phitonium-alpha air monitor ased on surface barrier detectors and single channel pulse height analyzers [UCRL-50228] 06 p0844 N68-15478

Surface defects in rolled uranium rods, drop tests of cast uranium base dilute binary alloys, and alpha spectrometric determination of neptunium and plutonium in uranium process solutions [NLCO-996]

07 p1007 N68-16329

Alpha spectrometric determination of neptunium and plutonium in uranium process solutions 07 p0955 N68-16330

Potentiometric titration of free acid and plutonium in nitric acid plutonium solutions [KFK-622] 07 p0956 N68-16430 Plutonium /4/ oxidized into plutonium /6/ by means of manganese dioxide in nitric acid medium [KFK-621] 07 p0956 N68-16445

Diffusion coefficients for various intermetallic plu-tonium-zirconium systems [CEA-R-3275] 07 p1010 N68-17006

Mass spectrometry neodymium determinations in irradiated uranium and plutonium as measure of burnup [GEAP-5354] 07 p0960 N68-17076

Procedure for determining plutonium in plutonium metal using absorption spectrop [PG-290/W/] 09 p1294 N68-18728 Electronic control of plutonium retention in extrac-

[CEA-R-3224] 09 p1276 N68-18934

Rapid spectrometric determination of plutonium in itric acid solutions by reduction of plutonium ions and neasurement of resultant color at 567 am 09 p1296 N68-18950

Use of plutonium fuel rods in nuclear reactors [EURAEC-1929] 09 p1377 N68-19044 Critical experiments of experimental boiling water reactor plutonium recycle [ANL-7368] 09 p1378 N68-19066

macro amounts of platinum by coprecipitation with fer-ric zron followed by ion exchange on inorganic exchange materials (LA-3/49)

A-3149]
Equation for calculating distribution coefficients of ranium and plutonium between metal nitrate nitric cid and tributyl phosphate systems
KFK-671]
12 p1837 N68-22623 [KFK-671]

(EFA-R-3168) 12 p1840 N68-22904 Kinetic study of hexavalent plutonium reduction by hydrogen peroxide in acid solutions [CEA-R-3168] 12 p1840 N68-22904

Preparation of neptunium and photonium in seven valent state [ANL-TRANS-574] 12 p1840 N68-22917 Experimental results of criticality studies with homogeneous plutonium solution [CEA-R-3367] 12 p1913 N68-23017

Photonium as fuel in nuclear reactors, fuel rod reparation, Panther code modification, and critical facility adaptation (EURAEC-1885) 13 p2106 N68-23265

Purification of photonium with ion exchange resins [EURAEC-1639] 13 p2013 N68-23544 Fuel cost program for use of plutonium in thermal

reactors (EUR-3890.I) 13 p2107 N68-23663 lon exchange and surface adsorption analysis of

atpha emitting plutonium in urine [AERE-R-5637] 13 p2016 N68-23696

Computer program for calculating photonium en-riched cores [EUR-3891.I] 13 p2108 N68-23892 13 p2108 N68-23892

Stoichiometry of disproportionation of tetravalent plutonium corrected for pentavalent state [MLM-1482] 14 p2208 N68-24351 Computerized method u

ng combined codes for hermal reactors 14 p2291 N68-24779 neutron spectra evaluati [NASA-TT-F-11671] tion in the

Thermochemical as it of plutonium-oxygen and uranium plutonium oxygen systems [STI/DOC-10/79] 14 p2371 N68-24821 EX

dor 100

ide

029

sof

129

nei

178

of

129

130

130

44

du-

06

ir

176

28

34

in

50

44

ter

66

er-

67

23

by

04

17

inh

17

od sal

65

al

63

of

96

92

51

Reactor cross section measurements for plutonius to californium chain from plutonium concentration measurements [DP-MS-67-111] 14 p2292 N68-24901 Oxidation of plutonium /4/ to plutonium /6/ using manganese dioxide in nitric acid medium [EURFNR-417] 14 p2218 N68-25253 lodate and citrate method for measuring free acid in plutonium solutions [LA-3876] 15 p2403 N68-25655 Solubility of chromium in hquid plutonium [LA-3850] 15 p2404 N68-25670 ide ceramic nuclear fuel BAW-3714-5) 15 p2404 N68-25701 Criticality data handbook for h uranium 235 and plutonium reacto [AHSB/S/-HANDBOOK-5, PT. 2] for hydrogen moderated 15 p2500 N68-25977 Plutonium fuel rods for nuclear reactors [EURAEC-1937] 15 p2502 N68-26439 Analysis and testing of p um as nuclear reactor (BNWL-475) 15 p2502 N68-26461 Thermal vacuum ev technique of preparing ft X ray spectroscopy 15 n2523 N68-26829 pure plutonium thin layers for [UCRL-TRANS-10232] Heat of solution of plu m and rare earth ions and entropy of plutoni-17 p2835 N68-28342 Progress in thermodynar nuclear fuel finsion, cross se trolytic cells, reactor safety, and plutonium are reported [ANL-7375] nics, chemical analysis, ctions, and burnup, elec-and studies on uranium 17 p2845 N68-29355 Analysis of free acidity in pi (EUR-3934.E) onium solutions 18 p3026 N68-30284 Plutonium fuel use in pr soderated re tube type heavy water (JAERI-11541 18 p3118 N68-30590 Ignition and burning characteristics of zero power plutonium reactor U-Pu fuel alloy [ARH-471] 18 p3119 N68-30712 Pu and U oxides, Zircaloy 2, tivity, and neutron physics in fission products, reac-nuclear fuel element (OR-16) 18 p3121 N68-30850 tonium in nitric acid 19 p3231 N68-31899 [RFP-1136] Single unit process for rapid production of plutonium metal by reduction of its oxides [UCRL-50403] 19 p3233 N68-31955 on of gases by alpha radiolysis of plutonium 20 p3421 N68-32685 Self-irradiation effects in cerium alloy containing 15 percent plutonium 20 p3569 N68-32865 Spectroscopic irradiated nuclear fuel element analysis für transuranium isotopes and burnup percentage [EUR-3949.E] 21 p3725 N68-34381 clear fuel elements by um extract d centrifugal extractors KFK-652] 21 p3725 N68-34403 Neutron total and al on cross sections of plu-[EN-1132] 21 p3745 N68-34701 overy of plutonium and Solvent extraction and recove nuclear fuels for Rapsodie nuclear [ANL-TRANS-619] ar reactor 22 p3828 N68-35713 n 241 in plutonium by counting and di-n-butyl-Determination of arrelvent extraction using (ARH-SA-I) 23 p4010 N68-36757 fate solution for titration of philomius [LA-3841] 23 p4011 N68-36763 Review and analysis of ph modynamic properties of pluto [ORNL-TM-2106] se behavior and therum-nitrogen system 23 p4189 N68-36876 m carbide nuclear lated uran fuel performance eva (CONF-671005-7) 23 p4103 N68-36909 Relative partial molar has selected solutes in liquid plu [LA-3951] tion calculated for ts of solu 24 p4211 N68-37562

Phase equilibrium diagrams of trilaurylamine, odecane, nitric soid, and tetravalent plutonium

24 p4216 N68-37790

ICEA-R-3478)

Extraction apparatus fi tonium and observing de plutonium [RT/CHI/68/11] for flow sheet testing with plu-decontamination of uranium by 24 p4216 N68-37928 PLUTONIUM ALLOYS Experimental results for work on effects of extended contact between trace-irradiated photonium fuels and 300 to 700 deg C sodium [LA-3745] 02 m0218 N64 1 Preparation and si alloy neutron sources (BARC-294) of plutonium-beryllium 03 p0372 N68-12217 Experimental devices for measurements on irradiated (EUR-3619.F) note controlled physical tomism fuels 03 p0334 N68-12768 Annual report on re or foch and materials MLM-1402] 07 p1033 N68-17145 n gases from fiquid plu-Feasibility of venting fit tonium alloy fuels to sodius [LA-3766-MS] 08 p1202 N68-17264 Spectrophoton LA-38431 12 p1836 N68-22457 Technical research and di (ANL-7403) 12 p1905 N68-22527 d for determination of plu-13 p2011 N68-23308 Nuclear fuel materials, on plutonium alloys, and ra ds, characteristics of urunium ad radiation effects on materials 14 p2290 N68-24609 mperature testing for lium alloys 15 p2485 N68-26718 Creep effect on high (BNWL-682) Criticality data taces moderated transium and plutonium cores (AHSB/S/-HANDBOOK-5, PT. 1) 15 p2504 N68-26793 for unmoderated and Plutonium and uranium e for Fast Flux Test Facility /FI [BNWL-514] hed alloy driver fuels /reactor 17 p2916 N68-29022 Thermal irradiation of nuclear fuels [LA-3832] liquid plutonium-alloy 20 p3530 N68-32953 Performance calculations is with uranium-plutonium cycle [JUL-542-RG] for pebble bed reactor 22 p3910 N68-35614 LUTONIUM COMPOUNDS of nitrides and carbide Preparation as [LA-TR-67-24] plutonium 01 p0025 N68-10790 Phase relationship sub-atoichiometric or [EURFNR-286] tion, and properties of ir fuel 01 p0096 N68-10949 Kinetic study of flu nd plutonium comp n reactions of uranium vith elementry fluorine [ANL-TRANS-515] 03 p0310 N68-11981 of uranium plutonium technique 03 p0373 N68-12424 Research and dev CAP-3791-4] Numerical analysis of with homogeneous pluto [BNWL-SA-780] om clean experiments cled assemblies 03 p0374 N68-12464 Stabilized uranism-plus liquid metal-cooled fast be (WCAP-3791-8) carbide solid fuel for reactor 04 p0542 N68-13896 Thermal conductivity of a nuclear fuels [LA-DC-9039] ium phitonium carbide 05 p0755 N68-14544 Uranium nitride-plutoni setal fast breeder reactors nitride fuels for liquid 06 p0871 N68-15012 Uranium and plutonium austenitic stainless stocks at 1050 deg C [CEA-R-3353] carbide reactions with added between 650 and 12 pl893 N68-23019 Production of uranisa ets for irradiation test cs WARD-3791-12] ım carbide fuel pel-15 p2505 N68-26798 Mixed urunium plu thermal reactor applica (BMI-1826) carbonitride fuels for 16 p2703 N68-27225 by polarized electrode PG-832/W/1 18 µ3031 N68-30794 plutonium ceramic com-Physical properties pounds - data manual TRG-1601/R/)

Mass spectrometric analysis of gold and photonium heats of vaporization and photonium monomicride decomposition heat (LA-3902) 22 p3830 N68-35909 Contribution to study of /U., Pu/C., N system [CEA-R-3536] 23 p4014 N68-37038 PLUTONIUM FLUORIDES Chlorine fluorides for reprocessing irradiated mixed oxide feels
[EURAEC-1866] 01 p0020 N66-10404 composition rates of phasi streams
07 p0956 N68-16461
s for chemical sparation
1 from waste materials
09 p1298 N68-19265 Estimation of thermal dunium hexaftworide in proc [ANL-7347] RFP-10481 PLUTONIUM ISOTOPES Diffusion of plutonium systems at chemical and pi (LA-3534) estopes in anion exchange sical equilibrium 03 p0311 N66-12140 peration and fisels prepara-Nuclear power tion and testing [EUR-3380.F] 03 p0375 N6E-12475 mation of cesium 137 apples and fuel human 230 Mass spectrometric determination of the spectrometr 05 p0694 N68-14482 nciple and aerosol behavior odium-cooled breeder reac-09 p1376 N68-18957 Evaluated neutro on data for plutonium and curium isotopes [NAA-SR-1227]] 09 p1396 N68-19261 Nuclear data for nes for fast and [IA-1152] 15 p2522 N68-26545 system and pluto [ORO-2529-17] 16 p2769 N68-28028 Neutron and phoson one rates after chemical ergy spectra and resu eparation for high expo BNWL-SA-1644) Computer program from phytonium dioxid [MLM-1460] ne gumma done rates 19 p3312 N68-32019 Plutonium beryl calibration standar (BRL-1401) urces as M 22 p3929 N68-35452 Gamma ray spectra fro (CEA-R-3547) 23 p4126 N6B-36987 Pu 236 quantity d n of parts per million in Pu 238 [MLM-1486] 24 p4292 N68-37468 PLUTONIUM OXIDES Metallography and X ray diffraction of phytonium oxides at room temperature [EUR-3564.E] 01 p0023 N68-10687 01 p0023 N68-10687 Surface area and cryst-rate of plutonium oxide (RFP-922) 01 p0027 N68-11004 Chemical stability of ides in high temperature [AAEC/TM-352] 03 p0310 N68-12047 Uranium oxide and pluton perimental boiling water read BNWL-SA-1139/REV-A/J oxide fuel rods for ex-03 p0376 N68-12539 Cost estimates for preparation of the cost cioments [ORNL-TM-1979] 03 p0376 N64-12553 Effect on output tonium oxide powde [EURAEC-1909] ng of reprocessed ph products and alumina 03 p0316 N66-1260 Plutonium enrichod fuel un-reactor systems through design, fi sion of partial core of plusonium in Saxton reactor (WCAP-3385-12) in presentined water fabrication, and oper-m oxide uranium oxid 04 m0542 M48-13870 of past2 Nes-13870 turn and urantum tride and thormal reactors 05 p0691 Nes-13995 dioxides and nitrides, on effects on fuels and Irradiation testing of fuels for fast breeder of [NUMEC-3432-35] Uranium and plutos rramic coatings, and in claddings [BMI-1509] 06 p0871 N68-15011 Ceramie-co particles ted and pyrolytic graphite-coated fuel 06 p0872 N68-15014 21 p3649 N68-34000

Preparation, fabrication, and characterization of uranium dioxide/iplutonium dioxide fuel elements for gas-cooled fast breeder reactors

Plutonium fuel requirements for sodium cooled and steam cooled fast breeder reactors [KFK-661] 07 p1031 N68-16831

Irradiation performance of fast reactor fuels - evalua-tion of uranium and plutonium dioxide fuels [KFK-662] 07 p1032 N68-16999

06 p0872 N68-15015

07 p1032 N68-16999

SUB.

UC

PLUVI

U

PNEU

Br

[NA

Pe

device [UC

Pe [SC-

A

Pn

Fh NA:

NA:

NT

Pa

INA

(NAS

Hig stepp Nuck VA/ [NAS

RAE Pm [NAS

De

NAS

AFO

Pm [RAE

NEUM

UP

Tra

PNEUM

POCKE

POCKE

UB

Pro of cire [NAS

Sen [NAS

Nut pocks NAS

Rei radiat [NAS

PNEUN

PNEU

Synthesis, fabrication, and high temperature proper-ties of plutonium and uranium carbide and oxide sucker fuel materials [LA-3820-MS] 08 p1202 NAS-17243 Plutonium dioxide uranium dioxide fast reactor fuels development and testing [NUMEC-3524-43] 09 p1374 N68-18557 Formation of colloidal solutions of plutonium and onversion into photonium dioxide microspheres for nuclear fuels (EUR-3737.E) 09 p1296 N68-18964 EUR-3737.E.]
Microradiographic determination of pyrocarbon oating thickness on plutonium oxide spheres
LA-38141
11 p1703 N68-20963 [LA-3814] 11 p1703 N68-20963 Thermodynamic behavior of plutonia-uramia solid solutions at high temperatures [GEAP-3388] 11 p1802 N68-20998 Plutonium dioxide nuclear fuel element package of BR-5 reactor - isotopic electric power sources for radio meteorological stations [2PRS-450] 12 p1903 N69-21072 Plutonium dioxide fuel element package from BR-5 12 p1903 N68-21973 Yields of transcurium nuclides produced in plutoni-um oxide targets irradiated in high flux isotope reactor [DP-1137] 12 p1905 N68-22471 Mechanisms of plutonium oxidation, and hygroscop-ic properties of plutonium dioxide [RFP-1056] 13 p2010 N68-23198 Determination of apparent density of plutonium dioxide spheroids produced by sintering process [AEEW-M-797] 13 p2089 N68-23737 (NUMEC-3505-30) 14 p2291 N68-24755 Thermal conductivity uranium and uranium-plutoni-(GEAP-4879) 14 p2375 N68-25347 Fast flux irradiation of plutonium and uranium oxide fuel pins in Experimental Breeder Reactor 2 [GEAP-5570] 14 p2295 N68-25359 Fluoride sensitive electrode method for determina-on of fluoride in uranium and plutonium oxides lutonium oxides 15 p2405 N68-25927 [BNWL-601] Thermochemical stability of uranium and plutonium feelled graphite during irradiation [AECL-2783] Vaporisation and properties of photonium and neptunium binary compounds to aid reactor technology [UJV-1832-4] 16 p2707 N68-28120 Neutron cross sections and critical experiment analy-is for Earlico Fermi fast nuclear reactor APDA-2011 16 p2708 N68-28168 Preparation of thorium and uranium and plutonium caide gels and sols as nuclear fuel elements [ORNL-TM-2205] 17 p2840 N68-28797 Heat transfer inside nuclear fuel of compacted urani-um oxide and uranium oxide-plutonium oxide powders [EURAEC-1998] 7 p2986 N68-28971 Thermodynamics and melting point of plutonia and rania in high temperature research on ypostoichiometric mixed compositions. ositions 17 p2987 N68-29232 [GEAP-5395] Development, autoradiographic quality control, gravimetric and impurity analysis given for uranium and plutonium oxide fast reactor fue! [NUMEC-3524-47] 17 p2917 N68-29352 Preparation, thermodynamic properties, and cold traps for ceramic Pu, PuC, and PuN nuclear fuels, and breader reactor physics studies [LA-380-MS] 17 g2918 N68-29410 Thermal conductivity of mixed uranium-plutonium [CEA-R-3488] 18 p3089 N68-30048 Neutron emission and reaction kinetics in exchange of isotopically enriched O with Pu/238/O2 [MLM-1462] 18 p3029 N68-30568

Single unit process for rapid production of plutonium metal by reduction of its oxides [UCRL-50403] 19 p3233 N68-31955

Chemical and calorimetric analysis of plute [REP-1122] 19 p3234 N68-32039 Thermal behavior of ceramic uranium and plutoni-um oxide fuels under irradiation at high specific ratings [EURAEC-1999] 20 p3531 N68-33001 Critical experiments with homogeneous plutonium dioxide polystyrene at hydrogen plutonium ratio of five [BNWL-SA-1630] 21 p3724 N68-34335 Heat transfer in nuclear fuels made from uran oxide and uranium oxide-plutonium oxide compa EURAEC-1998) 21 p3724 N68-34360 Solubility of sintered uranium of breeder reactor fuel in nitric acid (KFK-673) m oxide-plutonium oxide 21 p3725 N68-34404 Thermal conductivity of mixed plutonium uranium oxide fuel rods after irradiation [EURAEC-1999] 21 p3725 N68-34460 Performance of plutonium dioxide fuel elements in BR-5 reactors [ANL-TRANS-609] 21 p3726 N68-34476 Gel-addition process for preparing mixed plutonia-(BAW-3714-6) 21 p3655 N68-34746 Computer program for calculating potential health hazards from plutonium oxide particle inhalation [SC-CR-67-2845] 22 p3813 N68-35670 Thermal diffusivity and thermal conductivity of stoichiometric uranium-plutonium oxides [BNWL-704] 22 p3979 N68-35692 olution of plutonium dioxide 23 p4005 N68-36137 [MLM-1513, PT. 2] Metallographic techniques tural integrity of plutonium dic [CONF-670533-8] es for determining struc-lioxide microspheres 23 p4069 N68-36867 Pu 236 quantity determination of parts per million in Pu 238 [MLM-1486] 24 p4292 N68-37468 Fluorination of uranium and plutonium oxide fission roduct oxide pellets with fluorine in two inch diameter 24 p4216 N68-37952 ANL-12/3/1
Time dependent behavior of plutosium dioxide, ranium dioxide, sodium aerosol produced by agorization of fast reactor core materials BNL-12757] 24 p4297 N68-38139 (BNL-12757) Particle size distribution of plutonium dioxide microspheres after impact [MLM-1499] 24 p4352 N68-38442 PLUTONIUM RECYCLE TEST REACTOR Oxide nuclear fuel irradiation and testing using plutonium recycle test reactor [BNWL-SA-1624] 15 p2502 N68-26460 Reactor fuels, reactor control elements, core lifetimes, fuel loading, and Phoenix marine reactors, Plutonium Recycle Test Reactor, and Materials Testing Reactor (BNWL-635) 23 p4102 N68-36756 **PLUTONIUM 238** Burn efficiency of uranium 232, uranium 233, ph mium 238, and curium 224 - Yankee Core Evaluatio WCAP-6083] 05 p0697 N68-14940

Subcritical neutron multiplication determine with SNAP 19C-2 heat sources containing plutonium 238 [MLM-1416/DEL-1/] 07 pl029 N68-16579

Radiation hazard in using plutonium 238 as biological power source [LA-3696] 07 p1047 N68-16647 Philonium 238 formation by neutron irradiation of uranium 235 and neptunium 237

08 p1213 N68-17539

m 238 and polonium 210 data sheets 09 p1297 N68-19055

Plutonium isotope reentry vehicle experimental design study [NASA-CR-72366] 14 p2295 N68-25283 Analysis and selection of design for plutonism 238 for Brayton cycle space powerplant [NASA-TN-D-4600] 15 p2389 N68-25829

Fission, neutron flux and capture, and prediction of lutonium 238 production using neutron cross section [DP-MS-67-118]

17 p2931 N68-28935 Plutonium 238 dioxide microspheres prepared by the sol-gel process [MLM-1450] 17 p2843 N68-29170

Research progress on gamma rays, plutonium 238, crystal growth, neodymium promethium separation,

uranium 234 recovery, X ray diffraction, fast neutron spectroscopy, and polyatomic molecules [MLM-1443] 17 p2843 N68-29171

Radioactive decay kinetics of plutonium 238, related parent and daughter nuclides, and helium generation, thermal power, and spontaneous fission [NUMEC-373] 4.5-6, PT. 1]

19 p3313 N68-32022 Optimism power for blends of plutonium for nuclear els reached at 35 percent plutonium 238 and 65 percent plutonium 241 [NUMEC-3731-4.5-7, PT. 2]

19 p3314 N68-32110 Measuring photonium 238 radioactive space debris particle density resulting from SNAP 9A satellite failure failure [TLW-6006] 21 p3744 N68-34586

PLUTONIUM 239 Plutonium content and isotopic assay analyses for plutonium nitrate solutions [NBL-239] 01 p0024 N68-10755

Liquid scintillator method for measuring prompt neutrons produced in thermal neutron induced fission of uranium and plutonium isotopes (AAEC/E-172] 03 p0389 N68-12332

Ratios of neutron reproduction constants of photonium 239 and 241 relative to uranium 235 [IN-1060] 03 p0374 N68-12446

Experimental critical data compared with theory using one dimensional neutron transport code for uranium 235, uranium 233, and plutonium 239 [LA-DC-4386] 03 p0377 No8-12595

Multigroup cross sections calculated for plutonium 239 using single level inolated line shapes with different average fusion widths [NAA-SR-12515] 05 p0706 N68-14095 Energy dependence of prompt antineutrinos for eutron-induced fission of plutomum 239 and plutoni-

m 241 [FOA-4-4318-22] 09 p1393 N68-19008 Air monitor for plutonium 239 using semiconductor

[RFP-1046] 12 p1878 N68-22853

Hyperfine structure and magnetic moment of plu-tonium 239 using atomic beam magnetic resonance techniques 16 p2713 N68-27173

Neutron total and fission resonances for plutonium 239 [BNL-TR-197] on cross sections and 16 p2704 N68-27968

Plutonium 239 determination by resin paper ion exchange separation and liquid scintillation counting [NDL-TR-97] 19 p3223 N68-31272

Physical constants test reactor integral measure-ments of phytonium 239 alpha in fast spectra [BNWL-774] 20 p3534 N68-33428

Platonium 239 evaluated for fission cross sections and applicability to channel theory of fission [JAERI-1162] 22 p3932 N68-35644

Radiative capture and fission cross sections for ranium 235 and plutonium 239 in resonance-seutron

(BNL-TR-219) 24 p4304 N68-37435

Thermal fission yields of several isotopes from Pu 239 and effective capture-to-fission ratio for Pu 239 [IN-1189] 24 p4298 N68-38444 PLUTONIUM 240

Ratios of neutron reproduction constants of plutoni-um 239 and 241 relative to uranium 235 [IN-1060] 03 p0374 N68-12446

Neutron resonance absorption with spatial distribution by plutonium 240 in heterogeneous systems [EUR-3151.E] 03 p0398 N68-12734

Angular distribution of fusion fragments of thorium 232, uranium 238, plutonium 240, and plutonium 242 [FEI-73] 07 p1041 N68-16348

PLUTONIUM 241

Plutonium content and isotopic assay analyses for plutonium nitrate solutions [NBL-239] 01 p0024 N68-10755 Isotopically pure plutonium 241 metal preparation from plutonium oxide, and recovery of plutonium from reduction residues RFP-10071 03 p0312 N68-12255

Liquid scintillator method for measuring prompt neutrons produced in thermal neutron induced fission of uranium and plutonium isotopes [AAEC/E-172] 03 p0389 N68-12332

Energy dependence of prompt antineutrinos for neutron-induced fission of plutonium 239 and plutonium 241 (FOA-4-4318-221 09 p1393 N68-19008 168-29171 38, related generation,

68-32022

ace debris satellite 68-34586 alvies for

68-10755 68-12332 f plutoni-

th theory code for 68-12595

rinos for 58-19008 onductor

58-22853 t of plu-8-27173 ons and

aper ion 8-31272 8-33428

8-35644 ions for 8-37435

from Pu a 239 8-38444 plutoni-8-12446

distribu-8-12734 thorium im 242 8-16348

yses for 8-10755 paration um from

prompt d fission 8-12332 nos for plutoni-

68-32110

68-12446

68-14095

8-27968

sections

8-12255

8-19008

Neutron scattering cross sections of uranium 233, uranium 235, and plutonium 241 from 1 to 30 eV [UCRL-70826] 14 p2315 N68-25226

Optimism power for blends of plutonium for nuclear fuels reached at 35 percent plutonium 238 and 63 per-cent plutonium 241 [NUMEC-3731-4.5-7, PT. 2]

19 p3314 N68-32110

PLUVIOGRAPHS
U RAIN GAGES
U RECORDING INSTRUMENTS PNEUMATIC CIRCUITS

Breadboard model of all-pnes natic neutron flux de tector INASA-CR-724221 19 p3278 N68-31552 PNEUMATIC CONTROL

Pneumatic actuator servo loop system and fluidic devices for SPR-6 reactor control [UCID-15204] 03 m0380 NAS 12205

ng fork evaluation 03 p0385 N68-12761 Pneumatically excited to [SC-TM-67-712] el minimax controllers and roller with broad throttling range (FTD-HT-66-773) 07 p0980 N68-17163

ller with broad throttling 07 e0980 N68-17164

ency converter for Fluidic analog to pulse in pneumatic reactor control dru [NASA-TN-D-4497] actuator system 11 p1633 N68-21835 Performance testing of NERVA XE-1 control drum tustor to determine its ability to function in closed

NASA-TM-X-324651 18 p3114 N68-29973 PNEUMATIC EQUIPMENT NT GAS VALVES

Pneumatic hold-down cylinder for Atlas/Centaur launcher modified to reduce transient loads [NASA-TM-X-52352] 02 p0196 N68-11900

Pneumatic gimbal ac [NASA-CR-61565] 08 pl119 N68-17496 dboard flueric circuitry used to drive pneumatic

stepping motors [NASA-TN-D-4495] 11 p1631 N68-21651 matic-input fluidic Design and perform

[NASA-CR-72388] 13 p1995 N68-23602 High speed flueric logic circuitry for pneumatic tepping motor actuator control system for use in luclear Engine for Rocket Vehicle Application /NER-

VA/ [NASA-TM-X-59868] 16 p2592 N68-27449

Inflatable lifting canopy transporting 8-ton load over [RAE-TR-67190] with buoyancy tube for smooth surface and water 16 p2639 N68-28158 Pneumatic cylinde [NASA-CR-96543] 21 p3697 N68-34263

Design, constructi gyroscope with wide [NASA-CR-66675] sts of all-pneumatic free bearing supports 22 p3878 N68-35590

Pneumatic and ele devices for shock wave AFOSR-68-1772) 23 p4047 N68-36396 Pneumatic piston type a [RAE-TR-68027] rs for prosthetics 23 p4070 N68-37115

PNEUMOGRAPHS U PNEUMOGRAPHY PNEUMOGRAPHY

Tracings of forced expirate on rate determined by 14 p2200 N68-24884

POCKELS EFFECT U BIREFRINGENCE POCKET MICE

NASA-CR-93832]

Prototype space flight experiment package for study of circadian periodicity in pocket mice [NASA-CR-91062] 03 p0306 N68-12342 ent package for study Semipurified diet effect on adult pocket mice [NASA-CR-92835] 07 p0945 N68-16617 Nutritional requirements and breeding behavior of

NASA-CR-92980) 07 p0948 N68-17148 Relationships between cell population kinetics and radiation resistance in pocket mice [NASA-CR-69434] 09 p1283 N68-18954 Physiology of pocket mice and suitability for ex-biology research in biosatellites

10 pi463 N68-20016

PODS [EXTERNAL STORES]

Low modulus flutter model for strut-foll-pod con-[TR-459-2] 08 p1253 N68-17785

POIKILOTHERMIA U FROGS U SNAKES

POINCARE PROBLEM

Matrix elements of translation generators of Poin-care algebra with respect to Lorentz-basis [NP-16860] 01 p0112 N68-10699

ntz invariant expansions of relativistic amplitu (JINR-E2-3553) 09 p1382 N68-18600 Development of equations of form equivalent to forms of Dela [NASA-TN-D-4478] s of motion in canonical Delaunay and Poincare 14 p2341 N68-24371

O Raifcartaighs theorem and existence of element commuting with Lorentz generators in Lie group hav-ing Poincare as subalgebra [NP-17452] 18 p3105 N68-30329

Space time localization operators for unphysical representation of Poincare groups in field theory [CNAEM-53] 23 p4124 N68-36944

POINCARE SPHERES

Poincare sphere properties and representation of irefringent behavior of materials, and two and three limensional photoelastic techniques. 21 p3786 N68-33807

POINT DEFECTS NT FRENKEL DEFECTS
NT VACANCIES (CRYSTAL DEFECTS)

ns used for formation of point ARL 67-0147 02 p0174 N68-11132

Forces acting on impurity of metal subjected to tem-NASA-TT-F-11409] 06 p0894 N68-15537 Point defects studied for effects on physical and opti-cal properties of NiAl, CoAl, NiGa, and CoGa com-pounds

AFOSR-67-2790] 07 p1071 N68-17209 studies on point defects in m oxide single crystals 10 p1579 N68-20150

Dynamic collision focusing me nealing of point defects in diamon [NP-TR-1612] d for radia 12 p1937 N68-22791 Interaction between point defects and inclusions in

13 p2139 N68-24220 Interatomic potentials for point defect model calcu-tions for niobium, molybdenum, tungsten, and tan

(BNL-11594) 18 p3155 N68-30552 due to irradiation in iron at low to [CEA-R-3280] es and point defects emperature 19 p3345 N68-30879

20 p3423 N68-32837 Equilibria, point defect no stems of rare earths and di or

sture, and kinetics in tetravalent oxides 20 p3424 N68-32845 Annealing kinetics of supersaturation of point de-fects introduced in chromium by plastic deformation 22 p3887 N68-34850

Electrical resistivity studies of point defect recovery electron irradiated for metals in electron irradiate [CONF-670924-3] 23 p4151 N68-36480 Localized vibrati s of lithium and lithium-24 p4331 N68-37728

POINT MATCHING METHOD [MATHEMATICS]
U BOUNDARY VALUE PROBLEMS

POINT SOURCES

Wind velocity profiles and turbulent regimes in low 300 meter layer of atmosphere with respect to imput ties deposited from point sources [FTD-MT-54-561] 01 p0054 N68-10052 purities deposited from Atmospheric diffusion int sources in lower atm 01 p0054 N68-10053

Diffusion of helium gas from instantaneous point source within neutral boundary layer to simulate lower atmospheric conditions [CERO7-45SC7] 01 p0031 N68-10566

Analysis of poi on on boundary of two 02 p0285 N68-11571

racteristics of point source radiator Statistical chara-field placed in pla-dom heterogeneity [JPRS-43564]

06 p0882 N68-16039

Point source method arying density with sp e calculation in modia of ference to beta particles [AERE-R-5679] 13 p2001 N68-23801

Point source tec [CAL-YM-1783-V-1] 15 p2449 N68-25875

Transient ground wave propagation, electric field, ave fronts, and Green function for Sommerfeld waves

16 p2655 N68-27664

17 p2883 N68-28761 measurements of scat-ce near earth surface 17 p2939 N68-29282 na ray ape tered photons from a por (USNRDL-TR-67-124) on from point explosio

Strong shock wave pro into cold inhomogeneous (PUBL.-68-3) phere 20 p3471 N68-32819 ing period point source 24 p4284 N68-38380

and instantaneous point tary boundary layer as ob-

24 p4285 N68-38391 sets at medium range 24 p4285 N68-38392

POINT TO POINT COMMUNICATIONS

sications system net-Global point-to-point cowork ground station reliabil [NASA-TM-X-60567] nalyses 01 #0030 N68-10675 Parallel system analysis, pons, input-output schemes, int to point communica and organizational operation of spaceborne m [NASA-CR-93431] 09 p1308 N68-18536 Distribution calculations for observable meteor trails in forward scatter communications

24 p4340 N68-37581

POINTS [MATHEMATICS] NT INFLECTION POINTS Point-free carrier space topology for com anach algebra 02 p0230 N68-11838

Generalized root loci from a dinate lines of C-planes into S-p [DLR-FB-67-68] mapping of polar coor-04 p0531 N68-13495

mechanized plotting of 04 p0517 N68-13860

Algorithms for graph point m [SC-RR-67-742] 05 p0684 N68-14860

Hill differential equation for separating open sets of mints of stability into connected regions 06 p0866 N68-16028 Asymptotic properties of sequences of points in

06 p0867 N68-16032 eration and blocking of al factorials Computer programs for ges experimental points for fractio (BNWL-336) 07 p1014 N68-16642

th profiles through nu-molitions by use of arcs, and integral-graphical 09 p1362 N68-18680

Functional analysis of root is [NASA-TT-F-11516] i properties 10 p1508 N68-19790 Local structure of hype [NASA-CR-94098] points in Bunech space 11 p1733 N68-21729 interpolation between Multivariable formula given data points in n-dime [AFCRL-68-0284] p3513 N68-32325 al four bar linkage to Synthesis of three merate space curve

POISEUILLE PLOW

POISONING (REACTION INHIBITION)

(CEA-R-3274) 14 p2295 N68-25319

24 p4274 N68-37489

SUI

ice [Cl

POL

pol Al Lion coh

ibi

RE

(NA

[NA

R mici (AF

Call (NA

POLA

POLA

INA

Cylin (T-3

POLA

POLA

Observations over polar caps of low energy protons and alpha particles emitted during solar flare of 28 Aug. 1966
[TR-0158/3260/20/8]
23 p4161 N68 3666 Design of water moderated, water cooled reactor Resolution of instrument e recording at Bratislava, Poland nable poison (FEI-88) 14 p2296 N68-25403 04 p0578 N68-13663 Digital computer program for calculating neutron flux and poison atom burnup in nuclear fuels [EUR-3930.E] 18 p3115 N68-30184 Annual latitude variations at Borowiec, Poland 04 p0578 N68-13664 POLAR COORDINATES Polar coordinate system based on spherical geometry for double theodolite pibal evaluation Latitude variati ents and instrume on me Neutronic calculations of fuel and poison drum con-trol of refractory metal, fast spectrum space power error reduction at Warsaw, Poland 13 p2099 N68-23741 04 p0578 N68-13665 Stability of new radio flash code based on Maxwell equations for axially symmetric problem in polar coordinates Program to reduce observation time for latitude termination for parallel of Irkutsk and Borowiec, Po-[NASA-TN-D-4709] 18 p3120 N68-30750 U TOXIC DISEASES dinates (LA-3864-MS) 04 p0578 N68-13666 15 p2506 N68-25661 Systems analysis research - proposed Venus coor-nate system Calculating experimental cores on critical assembly of Polish Maryla-2 reactor [REPT.-878/XXI/PR] 18 p3120 N68-30778 NT CURARE NT INSECTICIDES 23 p4174 N68-37399 18 p3120 N68-30778 NT STRYCHNINE NT URETHANES Second Bulgarian artificial satellite tracking station /description/, and trends in development of inorganic, organic, and physical chemistry in Poland [JPRS-4640] 24 94358 N68-38325 POLAR GASES Approximate methods for predicting viscosities of gas mixtures involving both polar and nonpolar gases [NASA-TN-D-4496] 11 p1687 N68-21724 Refrigeration and constricting band for early treat-ment of pit viper snakebite [NASA-TM-X-58019] 17 p2820 N68-28686 Trends in development of inoganic, organic, and physical chemistry in Poland Intermolecular interaction for polar and nonpo-olecules correlated with thermodynamic and tran POISSON DENSITY FUNCTIONS Computer program to obtain optimal strategy in class of non-randomized stationary strategies for con-trolling Poisson production process under costly sur-24 p4220 N68-38327 port properties of gases 13 p2165 N68-23070 POLAR AURORAS U AURORAS POLAR IONOSPHERE BEACON U BEACON SATELLITES POLAR CAP ABSORPTION [FSU-M125] 03 p0359 N68-12071 POLAR METEOROLOGY Spectrum analysis of radio frequency emissiom from Dullois-Reymond theorem for generalized integrals and trigonometric series summable by Abel-Poisson Wind and temperature measurements in Antarctic NASA-CR-65996) 09 p1333 N68-18824 regions [REPT.-2466] solar flares, type 4 bursts, 06 p0862 N68-15429 Tables on outstandi polar cap absorption, and geom [NASA-TM-X-63120] gnetic storms 09 p1417 N68-19450 Climatological and meteorological research news and abstracts of Soviet-bloc literature Iterative solution for estimating parameters of eneralized Poisson distributions TR-112] 14 p2283 N68-24532 07 pt015 N68-17013 Observation of polar go geomagnetic disturbance ap absorptions of slow or Photographic observations and interpretations of ice breakup on Meade River, Alaska [CRREL-SR-118] 15 p2461 N68-26339 rd on Poisson functions 15 p2423 N68-25852 [NASA-TN-D-4572] [NASA-TM-X-63140] 10 p1589 N68-20498 tricity, signal to noise process 15 p2426 N68-26231 Optical radiation, photoelectricit ratios and photometers related to Po Polar cap absorption events, geomagnetic storms shortwave fadeouts, and microwave radio bursts in Northern and Southern Hemispheres POLAR ORBITS Aeronomy experiment satelli analysis, and control simulation [NASA-CR-90219] ent satellite polar orbit, control Poisson distribution of data on uranium isotopes, and 11 p1780 N68-21771 02 p0264 N68-11012 other statistical problems in mass spectrometry [BNWL-SA-1717] 15 p2418 N68-26719 Data tables and related com nputations for polar cap between February 1963 Proportional counter, and spectrometer analysis of solar X-ray spectrum during satellite polar orbit [TR-0158/9260-02/-1] Optical communications - maximum likelihood de-ection of M-ary Poisson processes in background of felizion Poisson poisson 11 p1695 N68-21830 additive Poisson noise [NASA-TN-D-4623] Tabulated data on polar up tions for July - September 1966 er atmospheric condi-17 p2855 N68-29528 Error probabilities for maximum signal detection in presence of Poisson noise [NASA-TN-D-4721] 23 p4017 N68-36105 12 p1864 N68-21866 pheric condition data December 1966 12 p1864 N68-21871 POISSON EQUATION HEOS B spacecraft [DTA/3-NO.30/9591] Solutions of one dimensional Vlasov-Poisson equa-tions for harmonic time dependence and external osphere condition data ane 1966 12 p1864 N68-21872 rulated polar upper atmo ted at Kiruna for April - Ju AFOSR-68-02261 09 p1400 N68-18407 Data analysis of RF and solar events to determin-tolar conditions that predict flares followed by polar Shock like solution [NASA-CR-94137] s of electrostatic Vlasov equation 11 p1765 N68-21832 Assembly code and method for solving Po analysis cap absorption event [NASA-CR-62067] 13 p2146 N68-23538 uage implementations of equation using Fourier (AD-672848) Polar cap absorption events observed at Swedish ophysical station during 1965 and 1966 14 p2244 N68-24453 POLAR REGIONS NT ANTARCTIC REGIONS NT ARCTIC REGIONS 13 n2035 N68-23756 es of asymptotics of wake of Polar cap absorption study of solar cycle variation in olar proton emissions from sun body moving in rarefied plasma [FTD-MT-67-44] Interferometer positioning techniques for determinenth polar region 15 p2530 N68-26309 (NASA-TN-D-4473) 15 p2549 N68-25880 Solutions to Poisson equation and applicability to problems of electrical breakdown due to low pressure Polar cap absorption correlative solar regions, and associate d with RF profiles ac-Comparative study of empapproaches to obtain density pressive strength of polar snow [CRREL-SR-115] 9 p3361 N68-31352 (NASA-CR-92210) 15 p2448 N68-26911 ESRO sounding rocket experiments for auroral parti-cle and solar and stellar radiation measurements 21 p3765 N68-34062 Vlasov-Poisson equations to determine nonlinear behavior of longitudinal plasma oscillations oscillations 21 p3748 N68-33973 Auroral particle measurements at Kiruna Observato-ry by sounding rockets and satellite experiments, and polar cap absorption studies 21 0.324 NAS 34064 Source function and balance equation for elec-imechanical material continuum derived from Pois-in and Maxwell equations [CRREL-SR-119] 21 p3761 N68-34064 23 p4105 N68-36161 POLAR CAPS Developing theory of canonical equations of analyti-cal mechanics, and Poisson theorem applied to Hamil-tonian canonical structures

08 p1234 N68-18040 ELDO launch vehicle for communication satellite launchings into polar orbits 17 p2978 N68-29511 ELDO project of interplanetary exploration with 21 p3778 N68-34196 Spheroidal method for calculating polar orbits of ar-tificial satellites [NASA-CR-96714] 21 p3772 N68-34508 Coordinated ground based and polar orbited eteorological satellite observation of auroral activi-22 p3869 N68-35327 ng, calibration, and measur-mining star coordinates in 02 p0194 N68-11010 empirical and mathematical usity, temperature and com-02 p0208 N68-11768 Philberth probe for penetrating through polar ice 03 p0342 N68-12016 Articles on arctic ice phenomens, and summaries ad meteorological charts for Germany and Northern emisphere during September 1967 08 p1195 N68-17343 Dynamic model of diurnal magnetic intensity at polar caps Magnetometer, and tape recorder system for polar geomagnetic pulse registration, and correlation with bremsstrahlung measurements 05 p0650 N68-14068 Venus data obtained by Mariner 5 and Venus 4 obes interpreted as evidence for polar ice caps (ASA-CR-93741) 10 p1591 N68-19846 09 p1334 N68-18976 probes interpreted at [NASA-CR-93741] Polar magnetic disturbances and data on charged particles in ionosphere evaluated to prove regularity of Topography of Antarctic polar cap and subplacial bed determined by geodesic and airplane radio barometric surveys [NIC-TRANS-2561] 14 p2245 N68-24479 NASA-CR-937941 10 p1522 N68-20059 Ice cap strain rate effects on engineering structures Control of arctic climate through melting of polar ice caps by forcing warm Atlantic water across arctic basin of polar regions (CRREL-TR-202) 11 p1792 N68-20721 High latitude outer zone bo or equal to 40 keV electrons of undary for greater than bserved by Injun 3 satel [T-498-R] 16 p2655 N68-27653 Attenuation effects resulting from bombardment of polar D region by high energy protons generated by solar flares - effects on non-inverse frequency squared absorption events [NASA-CR-94535] 13 p2145 N68-23254 High latitude magnetol phenomena observed at conjuga [RLTM-ESL-6] hydrodynamic wave ite locations 13 p2058 N68-23291 17 p2879 N68-29098

Warsaw, Poland

POLAND

POISSON PROCESS
U STOCHASTIC PROCESSES

Poisson ratio of simple alkali silicate glames 11 p1717 N68-20788

Temperature and porosity dependence of modulus of rigidity and Poisson ratio of beryllia [AAEC/TM-402] 14 p2277 N68-24715

Astronomical telescope errors and latitude measure-ents for Poland - conference

POISSON RATIO

24 p4300 N68-37793

04 p0578 N68-13661

04 µ0578 N68-13662

rements and annual variations at

DEX

of 28

36880

23741

25661

coor-

37399

ties of

21724

23070

arctic

12816

news

24532

of ice

26339

11012

rsis of

18040

tellite

29511

4196

of ar-

4508

rbited activi-

15327

es in

1010

atical com-

1768

r ice

2016

7343

8976

arged ity of

0059

0721

than satel-

3254

wave

3291

POLARISCOPES

POLABITY

Polariscopic v cylindrical cavity [T-3/7]

visualization of wave diffraction in

Improved polarity coincidence detector [R-367] 03 p0342 N68-12028

18 p3124 N68-30394

Satellite meteorology research on polar energy dget, atmospherics detection, and Mars atmospheric [NASA-CR-94772] ... 14 p2285 N68-25466 High frequency radio com nunication problems in AGARDOGRAPH-104] 17 p2855 N68-29502 Winter anomalies, au polar upper atmosphere [NASA-TM-X-63280] d noctifucent clouds in 18 p3066 N68-29770 Proton effect on hydrogen [FTD-MT-65-478] glow in polar auroras 18 p3068 N68-30101 Annual variations of po sea ice related to at-[P-3831] 20 p3471 N68-32773 Chemical heating above p mation of helium bulge duris [NASA-CR-96815] thermosphere and for-21 p3686 N68-34493 Self-contained, surface-con or carrying instrumentation faciers and geophysical studie ont by remote measurements. rolled thermal probes packages into polar and long term observations by remote me (CRREL-TR-210) 21 p3694 N68-34545 Bibliography and abstracts of research on snow and e conditions in polar regions (CRREL-12) 22 p3868 N68-35240 Special features of atmoshomogeneous circulation period range weather forecasts of polar [M-7398] ospheric processes in ods used to predict long regions 22 p3907 N68-35621 Background circulation, symemiapheric influences that precasts in polar regions of moptic processes, and determine weather during October and November [M-7408] 22 p3908 N68-36006 POLARIMETERS Astronomical photoelectric measurements and polarimetry of the star W Serpentis over 33 nights [AD-659202] 01 p0135 N68-10651 Large scale polarimeter for determining depolariza-tion characteristics of complex surfaces illuminated by [RM-408J] 10 p1537 N68-20146 Portable, olarimeter/p electronic, photometer fo large scale nonimaging for terrestrial, airborne, and (RM-4101) 11 p1696 N68-20925 Systems analysis of photopolarimeter for measuring stensity and polarization of light emerging from earth [NASA-CR-65952] 13 p2059 N68-23527 of extreme UV ecting polarimeter 19 p3328 N68-31255 **Polarization** synchrotron rac (DESY-68/12) igh energy resolution 19 p3280 N68-31815 Neutron polarim [REPT.-897/L/PL] POLARIMETRY Polarimetric, photometric, and spectrophotometric measurements of Mars, and visible and near infrared studies of Martian surface composition (NASA-CR-90495) 02 p0266 N68-11594 02 p0266 N68-11594 Martian surface photometry and polarimetry analysis INASA-CR-925801 06 p0910 N68-15508 [NASA-CR-65953] 13 p2174 N68-23524 Folarimetry of ulti [NASA-CR-950321 ds on Venus 15 p2558 N68-25884 drocarbons and confor-16 p2607 N68-27235 Radio interferometry, polar antennas for radio netry, and sources, and [AFOSR-68-0530] 18 p3167 N68-30726 Five color photometry and polarimetry of the zodia-cal light [NASA-CR-83189] 21 p3685 N68-34232 21 p3685 N68-34232 POLARIS AJ MISSILE Lagrange equations for impact shock prediction dur-ing ship loading of Polaris A3 missile 14 p2361 N68-25481 POLARIS MISSILES Evaluation of rewrapped solderless wrapped electric wire connections for Polaris missile [NAFI-TR-1092] 18 p3007 N68-30716

Electric dipole polarity measures nts of metastable 11 p1749 N68-20648 Effect of structure and solvent polarity on ultraviolet peorption spectra of carboxylate derivatives 21 p3648 N68-33814 POLARIZATION rization gradient in clastic dielectrics
06 p0895 N68-16058 Polar Laser light scattering from vttrium-iron garnet [NASA-CR-92719] 07 p1064 N68-16112 Vestibular excitation occ anodically polarized labyrin [T-490-R] ng from cuthodically or 08 p1127 N68-17545 Dynamic polarization of protom by solid state effect seasured on Er-doped and Nd-doped Y ethyl sulfates 10 p1487 N68-20038 rticles by light acuttering 14 p2299 N68-25034 Geomagnetic asymmetric response as function of polarity pattern of interplanetary magnetic field [NASA-CR-97262] 23 p4060 N68-37390 OLARIZATION [CHARGE SEPARATION] NT DIELECTRIC POLARIZATION NT ELECTROLYTIC POLARIZATION oretical curves for induced g applications in terms of Li ced polarization effect in f Laplace equation 01 p0056 N68-10335 T-476-R for measuring and stabilizing magnetic field (BMWF-FBK-67-03) 05 ±0702 N68-14707 06 p0794 N68-15962 on reaction mechanisms at low energy and stributions of /d.p/ reactions on aluminum angular distributed and magnesium [CEA-R-3078] 07 p1044 N68-16500 Statistical theory of electric polarization, and theo-ies of static dielectric constant and dynamic dielectric [ANL-7381] 09 p1382 N68-18901 Longitudinal polarization of beta rays from cesium 137, scandium 46, and thallium 204 [INR-798/I/PL] 09 p1393 N68-19034 Non-quantum mechanical di plarization-magnetization to vation of macroscopic or from system of [NOLTR-67-190] 11 p1752 N68-20938 easuring polarization and neutron charge proton target 12 p1878 N68-22877 Electronic device arameter in pion, [CEA-R-3357] d, allowing for dipole and by solution of differential NP-TR-16131 14 p2309 N68-24899 Polarization in pion proto sergy levels n scattering at various 15 p2514 N68-25947 Polarization experiments of T and CPT invariance at in nucleon-nucleon and nucleon-antinucleon scattering 16 p2726 N68-27954 dar molecules in nom Separation of pola niform electric field 19 p3218 N68-30878 Electrical and photoelectrical lar crystals determined from is molecules, electron affinities d properties of molecu-ionization energies of of molecules, and AFOSR-68-1344) 19 p3229 N68-31795 Cathode polarization in elecwition of chro [RTS-4585] 20 p3415 N68-32317 differential capacity and is at polarized mercury Voltage sweep mer charge density mean solution interface 21 p3648 N68-33874 POLARIZATION [SPIN ALIGNMENT] Polarization of resonances in simple peripheral SU(6/W model [NP-16936] rosarization anisotropy corare gas adsorption in graphite [NRL-6547] d in calculating Mice 02 p0174 N68-11125 K sigma N parity determ polarized protons as targe [UCRL-17230] using crystal containing

03 p0392 N68-12517

tropic liquid phase of

04 p0544 N68-13273

Spin effects, elementary particle reactions, and clarized proton targets Nadiofrequency spin filter theory and assection of metastable hydrogen, deuterium, or tritium atoms with [LA-3725] fferential cross sections leon/reaction 10 p1567 N68-19878 Spin dependent effects on di tred electrons, and spin ed in collisional ioniza-le deuterium atoms 10 p1570 N68-20204 ed source of highly position of electrons ej calculation of neutron p cal potential with average p [LA-3788] na using local opti-12 p1930 N68-22561 Theory for triaxial and time-of-flight polarization spectrometer for thermal neutrons [EUR-3910.D] 14 p2254 N68-2446 14 p2234 N68-24487 Polarization in solids be between nuclear spin systems [CEA-R-3290] sed on thermal mixing 14 p2317 N68-25320 ic atoms for lead, calci-cleon interactions 15 p2520 N68-26457 um, and uranium by nucle [PUC-937-291] use used to measure tering near 26 MeV 16 p2722 N68-27607 Double scattering tech polarization in He 3 - He 4 s [NASA-TM-X-59045] on reaction amplitu amplitudes after p elated to vector meson ation of spin 16 p2732 N68-28177 reaction ampli [DESY-68/4] ing nuclei, and use of ar interactions in iron to 17 p2953 N68-28437 Dynamic suclear spi hy optical pumping 19 p3315 N68-31049 20 p3422 N68-32787 ties of sodium, potassium, Electric dipole polarizabi (COO-1112-164) 20 p3539 N68-33317 Polarization of protons polarized protons on helium [UCRL-18137] elastic scattering of 21 p3743 N68-34516 ts and optical pumping for educing nuclear spin dif-[CERN-68-32] 23 p4111 N68-36015 in-related po effect in Compton scatter-23 p4115 N68-36337 Residual polariza negative mu mosons in hydrocarbons (JINR-P14-3809) 23 p4124 N68-36935 Phase shift analysi ing cross sections and 23 p4131 N68-37137 CEA-R-33921 Vector meson d e model and positive-pion of and linearly polarized DESY-68/331 23 p4132 N68-37168 Temperature depe polarization in water [JINR-P14-3832] 23 p4132 N68-37178 Residual interactions in mass 15 and 17 nuclei 24 p4308 N68-37548 Left-right asymmetry and differential cross section in inelastic scattering of 40 MeV polarized protons 24 p4311 N68-37667 Study of polarization of lands hyperon for reaction segutive kaon neutron yields negative pion lambda par-24 p4315 N68-37864 [HEPL-532] low energy scattering 24 p4318 N68-38165 OLARIZATION (WAVES)
NT CIRCULAR POLARIZATION
NT ELLIPTICAL POLARIZATION
NT OPTICAL POLARIZATION Scattering and depo waves by rough surfaces [NASA-CR-59984] 01 p0027 N68-10004 Airborne polypolarized radar data for terrain analy-[NASA-CR-91472] 04 p0479 N68-13437 04 p0580 N68-13862

Radiometric measurement of microwave emission from earth surface and atmosphere, and interpretation of polarization components of brightness temperature at 1.33 and 1.90 cm wavelengths [DAC-6693] 07 p0989 N68-16140 Propagation of circularly polarized waves in mag-etoactive plasma in neighborhood of cyclotron frequency (IPPCZ-74) 07 p1059 N68-16455 Polarization of coherent bremsstrahlung by extreme-hy relativistically polarized electrons [NP-17173] 07 p1052 N68-16997 of icocapherically propagated waves 911 08 p1147 N68-17836 (SU-SEL-67-091) unic model for charge relaxation effects on elec-chanical polarization surface waves of electric [NASA-CR-93332] 08 p1210 N68-17947 Crossed dipole antennas for continuous measure-sent of Faraday effect on radio signals from beacon stellins [KGO-677] 12 p1842 N68-21870 Relation between periods of Faraday rotation ob-served by rotating antenna and fixed antenna [KGO-678] 12 p1866 N68-22117 Extremum principles for linear anisotropic elas-dynamics related to polarization tensors on tensors 12 p1977 N68-22390 [DOC.-675D277] Polarization dependent transmittance, reflectance, d photoeffect of Al films using synchrotron radiation 12 p1889 N68-22636 Systems analysis of photopolarimeter for measuring stensity and polarization of light emerging from earth almosphere [NASA-CR-65952] 13 p2059 N68-23527 Circularly polarized microwave propagation parallel magnetic field in laboratory plasma NP-17341] 14 p2324 N68-24897 to magnetic f [NP-17341] Equivalent circuit response and polarized sphere odel to explain negative induced polarization anoma-[NASA-CR-87684] 15 p2456 N68-25678 Model for distribution of interplanetary dust to ac-count for brightness and polarization of zodiacal light 16 p2755 N68-27145 Potential effectiveness of tapered aperture horn an-tenna measured in polarization diversity reception system (CDP-TR-9) 16 p2619 N68-27210 Five-color observation of brightness and state of polarization of night sky radiation 16 p2759 N68-27485 Polarization of zodiacal light in night sky 16 p2760 N68-27487 ce observed color dis-Heliocentric models to productribution, polarization, and bright tness in zodiacal light 16 p2763 N68-27508 Submicron particles in interplanetary space and polarization of zodiacal light related to light scattering of such particles 16 p2764 N68-27512 Correlation pattern between Goddard Range And Range Rate /GRARR/ system optimum antenna polarization and IMP orbit position [NASA-TM-X-43265] 17 p2850 N68-29077 Atmospheric aerosol er light scattering rements by polarized 18 p3082 N68-29789 en two elementary dipoles vertical polarization 18 p3035 N68-29971 Transmission calculated for he [ECOM-2940] Photographic method for m starlight using polaroid filter easuring polarization of 18 p3167 N68-30454 Induced polarization in prospecting soil covered ore fields [RTS-4310] 20 p3467 N68-32292 Scene pola photometry on measurements by photographic 20 p3410 N68-32573 solution for Dirac equation developed for case of usoidal field and external field consisting of NASA-TT-F-11899]

21 p3731 N68-34185

(UCRL-17683) [IAE-1241] [AFIT-TR-67-6] [MTP-52] (RM-4083) [JPRS-46240] [JINR-P14-3809] [JINR-P2-3851] signals and no radar targets (JPRS-46624) POLARIZATION CHARTS U GRAPHS (CHARTS) laverse edge backscattering problem - new approach Automatic electronic method for tracking and accurately measuring polarization orientation angle of linearly polarized aguals, transmitted from spacecraft or other airborne vehicles [NASA-TM-X-55904] 02 p0180 N68-11266 22 p3834 N68-35314 olarization, and phase variations of low frequency radio wave ionospheric

on effects on polarization of scattered sky luminosit (FTD-MT-24-279-67) 24 p4251 N68-37970 POLARIZATION CHARACTERISTICS Polarization characteristics in pion-proton elastic 02 p0244 N68-11438 Matrix form Nonrelativistic impulse approximation to calculate polarization parameters for normal total experiment on quasi proton-proton scattering [JINK-P1-3215] 03 p0394 N68-12592 (MTR-543) 03 p0394 N68-12592 Procession of polarized sigmas in magnetic fields of hydrogen bubble chambers [UCRL-17746] 05 p0709 N68-14280 Polarization effects in reactions induced by high nergy neutrinos 05 p0711 N68-14351 Round robin potentiostatic anodic polarization test program for pure nickel in hydrogen saturated sulfuric 08 p1187 N68-17906 tion properties of parabo 09 p1301 N68-18332 Large scale polarimeter for determining depolariza-on characteristics of complex surfaces illuminated by 10 p1537 N68-20146 Correlation of orthogonal components of electromagnetic field vectors of scattered waves and polarization effects of nonuniform phase distribution of scintillating signals [KOG-682] 12 p1842 N68-21880 12 p1842 N68-21880 Lasers as light sources for separate determination of tresses in polarized optics 12 p1884 N68-22263 Nucleon-nucleon scattering at intermediate energies and polarization characteristics [UCRL-17408, REV.] 12 p1927 N68-22386 olecular orbital models rizabilities of polyenes 12 p1842 N68-23042 Free electron and Huckel-mo for calculating longitudinal pola [ONR-TR-99] Polarization of lambda hyperons in neutrino reacti with protons 15 p2527 N68-26952 Development of polarized desteron source for synchrocyclotron, and polarization characteristics in C/d.d/C elastic scattering [LYCEN-6802] 17 p2933 N68-29026 Scattering cross sections plarization effects of neodym and amplitudes, and ium elastic scattering in 17 p2935 N68-29164 Polarization parameter in elastic scattering of nega-tive pions by protons from 600 to 300 MeV/c 19 p3328 N68-31273 Polarization analyses for various parts of Arend-Ro-19 p3370 N68-32061 Polarization and cross section measurements for proton scattering from beryllium target 20 p3541 N68-32329 Polarization characteristics of parabolic dish anten-20 p3439 N68-33222 Interaction of ferroelectric polarization fields with ermanium and tellurium semiconductor films 21 p3752 N68-33714 m correlation of two photons Linear polarization c nitted in atomic cascade 23 p4119 N68-36685 Residual polarization of negative mu mesons in (IPP-3/71) 23 p4124 N68-36935 ion theorem for observables 24 p4317 N68-37974 Statistical properties of partially polarized radar mals and noise, and polarization characteristics of Coordi 24 p4228 N68-38217 (UCRL-17841) Radar polarization characteristics shapes, terrain, and hydrometeors 24 p4228 N68-38219 trons by photoioniza [YALE-2726-501] POLARIZED ELECTROMAGNETIC BADIATION NT SYNCHROTRON RADIATION

SUBJECT INDEX Polarization effects in microwave backscattering from sinusoidal capillary waves on water 07 p1037 N68-16937 Mathematical model for efficie of circularly polarized wave upon rotating half-wave dipole in waveguide [NRL-6608] 09 p1380 N68-18324 slation of bistatic electromagnetic scat-16 p2712 N68-27083 Scattering of quant charged particles by electromagnetic plane wave field [JINR-P2-3753] 16 p2727 N68-27979 Polarization follower system for recording Faraday tation of satellite beacon signals 17 p2879 N68-29095 Light transmission, polarization, reflection, and scat-tering in spectral distribution of sky radiation [ISR-6] 18 p3068 N68-30384 n effect and polariz d vibrational spectrum of 24 p4329 N68-37544 Radiance and polarization of multiple scattered light from haze and clouds [NASA-CR-91139] 03 p0338 N68-12030 Transformations of two-dimensional vibration com-ponents applied to derive methods for expressing changes to polarized light in inhomogeneous stress field [NSF-G-20259/2] 04 p0586 N68-13053 Internal reflection spectroscopy of powdered quartz [NASA-CR-92572] 06 p0796 N68-16097 Intensity and polariza traviolent day airglow [NASA-TM-X-63108] easurements of far ul-08 p1166 N68-17332 Optical absorption of gamma ray induced center ands in sapphire and ruby using plane polarized light 09 p1409 N68-19106 Optical and photoelectric properties, including plarization effects, of gold and aluminum in extreme ultraviolet region [NASA-CR-93971] 11 p1772 N68-21212 Fluorescent light polar oriented rubber elasticity [ONR-TR-102] orization for calculating axially 14 p2276 N68-24583 Nonzodiscal light sources of polarization in nightglow, and polarization due to airglow line emis-[NASA-CR-87730] 15 p2558 N68-25872 Polarized light studies on optical anomalies caused corundum inhomogeneities 16 p2688 N68-27375 Night sky brightness and polarization of zodiscal light measured by OSO-2 satellite and balloons 16 p2758 N68-27477 Zodiacal light intensity and polarization readings in three colors observed by light weight balloon borne telescope equipped with telemetry 16 p2759 N68-27483 Surface brightness, color index, and polarized state of zodiacal light measured from Aerobee 150 sounding rocket 16 p2759 N68-27484 Stress-strain, network topology, and optical coeffi-cients of crosslinked polyvinyl alcohol gel, and depolarization of light by birefringent polymeric materials. 18 p3098 N68-30035 olarized light and small plasma gradients for in-used light transmission in Fabry-Perot interferome-20 p3477 N68-32493 eric turbulence effects on linearly polarized 20 p3494 N68-33394 linate system in ellipsometry for analyzing el-larization 23 p4109 N68-36924 NOLARIZED RADIATION NT SYNCHROTRON RADIATION Atomic beam system for producing polarized elec-cus by photoionization of polarized lithium 6 beam YALE-2726-501] 05 p0644 N68-14602 Proceedings of 1967 CERN School of Physics dealing with beam optics, kaon decay, and use of polarized targets in particle physics (CERN-67-24, V. 4] 06 p0885 N68-15801

Spin effects, element polarized proton targets

tary particle reactions, and 06 p0885 N68-15804 SUBJ

Pro

Lo

from inotog (REF

NAS

Tes

[ANL

Ela

Des

AD-

Dec

Q.

TR-5

Flip (KR-1

Eta

fect or

POLAR

POLAR

Pok

AER

Mic sis, po cal mi [NBS-

Elec

Ana accura and ap

Pol

Pola as uras [NIM-

Pole

OXYGE!

POLAR

POLICII

Teci

science tion - p

AC-0

Sep. 1: by fedi [NAS/

Cak

energy energy [NAS

Con

[MTR-482]

24 p4225 N68-37829

DEX

ttering

16937

18324

c scat-

27083

elec-

27979

eraday

29095

f scut-

30384

um of

37544

i light

2030 com

field

3053

wartz

6097

ar ul-

7332

enter ght 9106

1212

cially

4583

i in

5872

used 7375

iacal

7477

7483

state

7484

and

0035

r in-

194

ized

394

g el-

924

602 leal-ized

801

SUBJECT INDEX son from nuclear reactions 07 p1049 N68-16703 (JINR-P13-3504) Longitudinal electron pola from beta decay of scandium larization measurements m. cesium, and thallium [REPT_798/1/PL] 07 p1035 N68-17127 ted beam of ground rization predic ns crossed by dc electron beam 08 p1213 N68-17622 state hydrogen atomi [NASA-CR-93254] ns in Penning discharge 09 p1401 N68-18562 Slow neutron transmiss with incoherent scattering [BNL-TR-139] on through polarized crystal 12 p1934 N68-22671 Tensor polarizations of deuterons elastically acat-tered from carbon arcs [ANU-P/406] 16 p2722 N68-27539 Elastic scattering of polarized neutrons by inter-nediate and heavy nuclei 17 p2927 N68-28638 Angular distribution of polarized proton beams scat-tered from oxygen cyclotron target 18 p3127 N68-29734 Design and operation of X band polarization radar antennas compatible with pulse Doppler radar [AD-669670] 18 p3034 No8-29839

Decay spectrum of polarized muons in particle in-[NP-174511 18 p3136 N68-30649 Q switched lasers and reflected polarized harmonic radiation and generations [TR-563] 18 p3085 N68-30799

Flipper-chopper for polarized slow neutrons [KR-125] 21 p3739 N68-34145 Eta meson lifetime determination using Primakoff ef-fect on spinicas auclei with polarized photons [JINR-P2-3845] 22 p3933 N68-35743

POLAROGRAPHS U POLAROGRAPHY POLAROGRAPHY

Polarographic determination of copper compounds [AERDL-1910] 02 p0175 N68-11219

Microchemical analysis review including gas analysis, polarography, potentiometry, coulometry, chemical microcopy, and classical microchemical analysis (RBS-TN-425) 05 p0618 N63-14036

Adsorption of electroactive species in stationary electrode polarography in electrochemical system 16 p2610 N68-27731

Electron structure influence on polarographic half wave potential, and magnetic and spectral behavior of transition metal complexes

16 p2617 N68-28325 Analog differential readout methods for improving accuracy of data on voltametric behavior of systems, and applications to stationary electrode polarography 17 p2837 No8-28445

Polarographic study of complexes of selected metal ions and p-Tosyl derivatives of amino acids 19 p3221 N68-30946

Polographic study of corrosion preventive oils [RIA-68-1210] 19 p3297 N68-31060

Polarographic determination of bexavalent uranium aranyl fluoride in uranous fluoride oride 19 p3223 N68-31110 Polarographic cell for qui stitative determination of

oxygen in various solutions (RTS-4688) 22 p3819 N68-34871

Construction and operation of electrochemical in-strument, design of digital data acquisition system, and stability and accuracy of three amplifier potentiostat 22 p3873 N68-34896

POLABONS

by federal agencies (NASA-CR-86739)

Calculation of polaron properties in anisotropic energy bands, and results for electron on apheroidal energy surface interacting with optical phonous [NASA-CR-93001] 07 p1042 N85-16370 POLICIES

Technology assessment procedure for integrating clence and engineering into public policy and legislation - proceedings hefore Congressional committee 06 p0931 N68-16020

FAA study of near mid-air collisions - reporting AC-00-23] 08 pHIS N68-18242 Implications of President Johnsons memoranda of Sep. 13 and 14, 1965, for funding of academic research

14 n2376 N68-24640

Public policy and overall environmental quality and chnological, economic, social, legal, institutional, d political problems related to environment manage-

16 p2800 N68-27744 ride inventory control mining policies 19 p3389 N68-31996 Computer program to prov manager with statistics for deter [ALRAND-59]

POLISHED METALS U METAL POLISHING

POLISHING NT ELECTROPOLISHING NT METAL POLISHING

Polishing and grinding of ceramic materials for transmission electron and optical microscopy
[BNWL-652]

18 p3094 N68-30580

Jet chemical polishing apparatus for preparation of licon thin samples for observation by transmission (ESRO-TM-112) 19 p3283 N68-31192

Electromechanical polishing of refractory carbides containing graphite [LA-DC-9602] 21 p3698 N68-34370 POLITICS

Science and technology effects on social, political, and economic sectors - conference proceedings [NASA-CR-91046] 03 p0429 N68-12081

Conceptual model of metropolitan police departments as command-control posts with objectives defined in broad behavioral terms [NASA-CR-93160] 07 p1103 N64-17189 POLLEN

Computer programs for plotting pollen diagrams [NASA-CR-89979] 01 p0034 N68-10063

POLLUTANTS U CONTAMINANTS

NT AIR POLLUTION

Pollution free hybrid fossil nuclear fueled mag-netohydrodynamic power cycle [BNL-12319] 15 p2501 N68-26381 POLONIUM

Data tables on thermodynamic and physical proper ties of sulfur, selenium, tellurium, polonium, and their compounds, based on comprehensive literature survey [PB-175628] of p0791 N68-15734

POLONIUM ISOTOPES

Polonium and astatine isotope yields in fission frag-ments when bombarding uranium 238 with neon 20 and argon 40 ions [JINR-P7-3710] 15 p2519 N68-26390

POLONIUM 210 Possible European production of polonium 210 using bismuth irradiation in graphite-gas power reactor [ELDO/SP/67/17] 04 p0540 N68-13648

Plutonium 238 and polonium 210 da [MLM-1441] 09 pl 210 data sheets 09 p1297 N68-19055 MLM-1441] 09 p1297 N68-19055 Safety hazards of polonium 210 during launch pad

[SC-CR-67-2801] 19 p3312 N68-32020

POLYACRYLATES U ACRYLIC RESINS POLYAMIDE RESINS

Calculation methods and Fortran 4 program for pre-dicting chemical equilibrium composition of degrada-tion products from phenolic resunnyl ablative heat shields [NASA-CR-90496] 02 p0285 N68-11599

NOW THE REST MANAGEMENT

Conductive heat transfer mechanisms in low density phenolic-nylon chars [NASA-CR-966] 03 p0355 N68-11978

ent effects on static fatigue of Gaseous environment e nyion, and of polystyrene fi (ERDE-7/R/66) 04 p0525 N68-13108

Materials tests of oil impregnated porous nylon half saring retainers REPT.-24771 06 p0849 N68-15173

Polyamide fiber material tested for use as protective clothing in industrial hazardous thermal environment [LD-17-67] 09 p1287 N68-18477

Preparation, and evaluation of polyimide suffore rains, graphite-silica reinforced polyamide resists, and rain resistance to FLOX-methane, and fluorinehydrogen fuels 09 p1355 N68-18535

Theoretical analysis of saterials with various percenterials with various percenterials and silica five composite ablation entages of phonolic resin, 10 p1541 N68-19710 Nylon laminate flight helmet for incremed crash pro-tection of military flight crews 11 p1639 Nea-21014 11 p1639 N68-21018

action rate analys is applied to mechanical proper-11 p1719 N68-21326

INADC-AC-6809) 13 p2006 N68-23969 Calculated ablative quanti-eat shielding materials of hyp ties for nylon phenolic orbolic reentry vehicles 14 p2372 N68-24989 heat shielding mater [NASA-CR-73225]

Service life of aged and used sylon parachutes ITR-68-45-CM] 16 p2689 N68-27394

Crystal morphologies of nylon 6 19 p3298 N68-31341

Preparation of bifunctional tr [PUBL,-233] ptycene polymer films 19 p3228 N68-31646

ectrical properties, ther-echanical properties of M-7061] 20 p3513 N68-33601

POLYATOMIC GASES
NT. DIATOMIC GASES

Transport properties of polyatomic fluids 10 p1518 N68-20517

POLYATOMIC MOLECULES
NT DIATOMIC MOLECULES
NT TRIATOMIC MOLECULES

Thermal dissociation of distorsic and polyatomic molecules, gas ionization, charge transfer, atomic excitation and energy levels in cold plasmas [FTD-MT-45-523] 01 p0118 N66-10604 01 p0118 N68-10604

Method and appro-for electronic energi-tahedral polyatomic m [R68SD3] s of computer program wave functions of oc-08 p1212 N68-17347

Kinetics of physical pro-lasers - method for calcula-tional levels of polyatemic in [NASA-TT-F-[1667] ses in carbon dioxide g populations in vibra-13 p2079 N68-23325

Vibrational spectra of bound polar molecules 14 p2215 N68-24905 n borollydride salts for

Synthesis of polyar neutron moderators [RMD-3097-F] 14 p2217 N68-25141 Transfer of vibrati eray in excited electronic

15 p2408 N68-26079

Research progress on gamma rays, phitonium 238, crystal growth, neodynamium promettisms separations, uranium 234 recovery, X ray diffraction, fast neutron spectroscopy, and polyatomic molecules [MLM-145] 17 p2843 N66-29171

Total energy estimation olecule by using orbital, se proclation energies of beryllium hydride if consistent fields, and 18 a3129 N68-29904

Stimulated emission in polyat [UTEC-MD-68-015] omic molecules 19 p3225 N68-31297 Molecular force field and the of simple polyatomic molecules rmodynamic properties 22 p3822 N68-35142

23 p4113 N68-36122

POLVBENZIMIDAZOLE

DLYBERGENSTONE
Carbonne polybenzimidazole preparation
[SCL-CR-66-72]
01 p0020 N68-10376
Polybenzimidazole synthesis, ablative screening sests, and char formation in PBI composites
(NASA-TM-X-61092)
13 p2083 N69-23397

POLYBUTADIENE Aliphatic ionene synthesis, strain rate in deformation of clastemers, polymerization and structure of nitroso rubber, crystallinity in polybutadients, and ther-moplastic rubber binders

03 p0312 N68-12316 Solution properties of polybutadiene and polystyrene block copolymers [NASA-CR-92545] 06 p0839 N68-16091

Hypergolic ignition of polymeric fuels with oxygen [NASA-CR-96715] 21 p3795 N68-34287

Rheo-optics of high speed di polyethylene and polybutene-graphic light scattering method [ONR-TR-109] eformation - analysis of -1 films using photo-22 p3895 |968-35381

POLYCARDONATES NT. LEXAN (TRADEMARK)

Infrared and ultraviolet analysis of polycarbonale photodegradation [TIL/T-5731] 02 p0178 N68-11590

23 p4085 N68-37249

Voltage and temperature values of the vertical values of the vertical values of vertical polycarbonate capac [NASA-CR-72297] ts on high temperature polycarbonate pyrolytic products
[NASA-CR-91659] 05 p0682 N68-15002 sectiles in aluminium and Penetration of porous p plastic targets [NASA-TN-D-4505] 11 p1796 N68-21293 ation of stress strain rare in cyclic testing 11 p1720 N68-21674 Photomicrographic de behavior of dry polycarbs [REPT.-67-C-374] Radiation accelerated creep in polycarbonate (UCRL-13328) 14 p2277 N68-24793 measurements for sand-ce, quartz, and polycarbonate resin [NASA-CR-73230] 17 p2877 N68-28631 Fracture mechanics applied to evaluate effects of cracks on fracture strength of notched glassy plastics and vinyl compo [UCRL-1791]] 17 p2904 N68-29464 Polycarbonate resin used as hot melt adhesive in ceramic, metal, and resin bonding [LA-3890] 21 p3709 N68-34378 POLYCRYSTALS. Mathematical models for elastic properties of anisotropic beterogeneous materials [NASA-CR-89975] 01 p0141 N68-10091 01 p0141 N68-10091 Yield point and strain-hardening coefficient of high purity polycrystalline zirconium [ITTRI-578-P27-22] 01 p0074 N68-10140 Analytical and experimental investigations of defor-mation properties of reactive and high temperature metals and alloys 01 p0078 N68-10890 Thermal conductivity and electrical resistivity mea-trements of polycrystalline graphite TRG-1437/C/] 01 p0153 N68-10943 (TRG-1437/C/) Mechanical behavior of tantals nesium oxide polycrystalline ceran [NASA-CR-90511] 0 m carbide and mag-02 p0225 N68-11625 Atomic structure and chemical composition in-uence on grain boundaries effect on mechanical illure in polycrystalline ceramics failure in polycrystalli [NASA-CR-91074] 03 p0355 N68-11944 Inelastic neutron scattering cross sections for WANL-TME-1640] 04 p0551 N68-13837 Formation of grain boundary cracks in anisometric polycrystalline materials
[AERE-R-5603] 06 p0857 N68-15374 ittered and sputtered high Angular distribution of scatte energy particles on polycrystalli [SGAE-PH-62/1967] ne targets 09 pl391 N68-18858 rization of electrochemi-X ray diffraction of Identification and character cal reaction products by polycrystalline solids 10 p1483 N68-19811 Electron microscopy of electron beam irrad amorphous silicon, germanium, and cadmium supplicated films semiconductor films [NASA-TN-D-4522] 10 p1580 N68-20295 Work functions of monocrystalline and polycrystal-12 p1955 N68-22269 al conductivity of polycrystal zinc m21 14 p2335 N68-25587 [CNEA-202] Internal friction in polycrystalline iron alloys as a on of plastic defo 15 p2484 N68-26426 Effect of strong shock waves on polycrystalline ickel - Rydberg series calculation of high pressure astic constants for nickel 17 p2898 N68-28378 Grain size effects on electrical transport in thin rated polycrystalline bi uth films 17 p2953 N68-28406 th of single and polycrystal low saturation garnets for use in mic (\$3-220-4526-41 18 p3154 N68-30333 saled alpha-brase polycrystals trical free flight impact and uion tests 19 p3289 N68-30942 iths for cesium thermionic sten electrodes 19 p3341 N68-31640 diodes with polycrystal [NASA-TN-D-4744] ncy dependence of magnetic susceptibilities

ents of tensile deform slyethylene teresile. Spudering of polycrysta [ANL-TRANS-627] olids by argon ions 21 p3755 N68-34483 Ematic constant of polycrysta [NYO-3360-12] line HoZn mib 2 22 p3892 N68-35657 POLYETHYLENES
NT POLYETHYLENE TEREPHTHALATE ns in polycrystalline ferrite nagnetic resonance 22 p3952 N68-35891 Nonlinear power loss materials other than gyro ritched ruby laser refle single and polycrystallic (SAMSO-TR-68-283) nductors 22 p3952 N68-35955 Polymonotri (AD-656319) Monitoring stresses and detailed path by crack propagating in polycrystalline cerumic [NASA-CR-97204] 23 p4083 N68-36660 POLYESTER RESINS Surface treatment effects on bonding to polyethylene with epoxy, polyester, and thermoplastic resins [PA-TM-1797] 02 p0224 N68-11270 Casting flare illuminator with polyester epoxy binder TWP-0267-9101 07 p1012 N68-16787 and cables [AD-659412] Oxirane-polyester resin system evaluation for use in exterior, air drying, gloss enamels [CCL-248] Water-Extended Polyester /WEP/ resin for rapid repair of damaged runways 16 p2683 N68-27944 Chemical analysis of curi ng conditions effect on crosslinking of polyester resin (COA-NOTE-MAT-20) 18 p3100 N68-30816 [NCL-67-35R] Permeation, diffusion, and solubility of helium, water vapor, hydrogen, nitrogen, and carbon dioxide is amorphous and crystalline polypropylene and polyeste [TRANS-1537] 22 p3896 N68-35527 Modified polyester resina, molecular weights as slaxation times of polystyrenes, hazards of comme al plastics, and polymer blending to increase plast roperties - conference 23 p4082 N68-36532 RPI-328-102] Crack propagation resistance of rubber modified objecter resists and fatigue cracking resistance of 181-lass cloth laminated rubber modified polyester 23 p4083 N68-36537 POLVESTERS ESD-TR-67-548) Compressive and shear properties of polyester and olyimide film honeycomb core FPL-75] 03 p0357 N68-12516 Fatigue life tests of polyester film tape recorder belts [NASA-CR-92519] 06 p0850 N68-15504 Gamma ray effect on synthesis of organo-tin stabil-izers and catalysts for vinyl chloride plastics and (ONK-TR-93) 07 p0959 N68-16791 Radiation induced graft copolymerization of styrene with polyester foil and cord [INR-841/XVII/C] 09 p1356 N68-19272 Molecular structure of polyester and polyether type TR-67-77-CM] 13 p2087 N68-23333 ce of rubber modified acking resistance of 181-Crack propagation resistant polyester resins and fatigue cra glam cloth laminated rubber mo of low density poly [RAE-TR-66262] lified polyester 23 p4083 N68-36537 Stress and de POLYETHER RESINS Molecular structure of polyester and polyether type TR-67-77-CM) 13 p2087 N68-23333 POLYETHYLENE TEREPHTRALATE Solid state polymerization technology for synthesis of ultrahigh molecular weight polyethylene terephtha-[COO-1614-1] (NASA-TN-D-4335) 221 05 p0618 N68-14093 Flight test of capacitance tector of aluminum polyeth inflatable paraglider [NASA-TN-D-4530] ce type meteoroid impact de ethylene terephthalate using 12 p1872 N68-22290 lyethylene terephthalate nethods of preparation 14 p2278 N68-25367 Mechanical properties of p under selected conditions and [NASA-CR-94780] Fabrication and testing of Pageos 1 [NASA-TN-D-4596] 15 p2563 N68-25820 Cracking of polyethylene radiation in vacuum and air [FTD-MT-24-184-67] hthalate by ultraviolet

15 p2488 N68-26346

16 p2785 N68-27930

red crystallization of

18 p3098 N68-29793

Axial slit effects on residual tensile strengths of polyethylene terephthalate film and fabric cylindrical

[L-5483]

20 p3571 N68-32887

Linear polyethylenes for communication and power cable coatings [AD-656509] 01 p0080 N68-19075 lene insulated wire 01 p0036 N68-10148 Temperature deper ce of cross-linked amorphous tic properties 01 p0081 N68-10494 polyethylene photoelastic COA-NOTE-MAT-11] Neutron flux density a neasurement and effective various neutron shielding materials - polyethylene [UCRL-TRANS-10128] 01 p0114 N68-10816 ne retardant crosslinked og and jacketing electric wires 01 p0082 N68-10817 Surface treatment effects on bonding to polyethylene with epoxy, polyester, and thermoplastic resins [PA-TM-1797] 02 p0224 N68-11270 Extrusion of cellular polyethylene is (AD-660094) tene insulation 02 p0217 N68-11433 Quasi-de photoconductance measurements in polyethylene and polystyrene during steady state cobalt 60 irradiation 03 p0408 N68-12576 Energy response of neutro loaded polyethylene spheres [LA-3595] on detector using cadmium 04 p0507 N68-13012 Irradiated and nonirradiated polyethylene and cel-lophane permeability to gases, vapors, and liquids [NASA-TT-F-11325] 04 p0526 N68-13352 scattering by 07 p1050 N68-16736 Reactivity effect of polyethylene in fast reactor [AE-305] 07 p1032 N68-16881 Low-aithouette X-band circularly polarized airborne ntenna with polyethylene cylindrical lens and circular olarization transducer 09 p1301 N68-18344 Crystallization and orientation mechanisms in polyethylene 10 p1542 N68-19897 of amorphous orientation 10 p1491 N68-20243 Dynamic X ray diffraction fro [ONR-TR-97] m polyethylene 10 p1560 N68-20268 Third degree functional polynomial representation of constitutive equation of nonlinear viscoelastic polyethylene 11 p1791 N68-20626 Reactive species produced in polyethylene and styrene by ionizing radiation and hydrogen atoms 11 p1651 N68-21105 Elastic relaxation to e for high speed drawing 11 p1707 N68-21284 analysis of failure locate 11 p1799 N68-21503 mechanisms in polyethylene t (NYU-AA-67-105) Chemical reactions in polyethylenes and vinyl polymers during and after irradiation with ionizing radiation 12 p1894 N68-22541 ected critical experiments on Reflected and unreflect ixtures of enriched ura polyethylene, or Teffon [ORNL-TM-2082] 12 p1939 N68-22863 Molecular forces an polyethylene single crystals 13 p2089 N68-23748 Kinetic interpretation peratures of alkane liqui [REPT.-67-C-091] s transition - glass tem-polyethylene 14 p2276 N68-24504 X ray diffraction analysis of time dependent molecular deformation process in polyethylene [ONR-TR-96] 14 p2276 N68-24585 Transition metal catalysts for polyethylene encapsu-14 p2217 N68-25123 nificant structures theory of liquid molecular are of polyethylene 19 p3296 N68-30907 on and melting of polyethylene under 19 p3297 N68-31293

PO

PO

03 p0356 N68-12200

NDEX nurements of X ray orientation and birefring linear and branched polyethylese (PUBL-247) Pyrolysis of tetrafluoroethylene [PUBL-68-1] 8-37249 d power and nitric acid (BNWL-751) 1-10075 Weatherability of polyolefins [PLASTEC-32] L-10148 orphous of polyetl [TR-15] Rhoo-optics of high speed deformation - analysis of polyethylene and polybutene-1 films using photographic light scattering method (ONR-TR-109) 22 p.3895 N68-35381 -10494 ffective -10816 Investigating upper trop polyethylene transosondes [JPRS-46505] ulinked ic wires -10817 IN-11511 thylene High density polyethylene mechanically acceptable for use on plastic nose cones having stress cracking -11270 -11433 [HDL-TR-1396] nts in Chlorinated polyethylene and fitions to thermoplastic polymer -12576 POLYGONS
U HEXAGONS
U RECTANGLES
U TRAPEZOIDS
U TRIANGLES dmium -13012 ind cel--13352 POLYHEDRONS
NT CUBES (MATHEMATICS)
NT OCTAHEDRONS
NT PARALLELEPIPEDS g by -16736 NT TETRAHEDRONS Projections of convex polyhedral sets with linear pro-amming applications 16881 ORC-67-29 irborne Hidden line problem and visual perception of com-puter-drawn polyhodron edges using algorithms [NASA-CR-91339] 04 p0331 N68-13830 -18344 ıms in -19897 ments associated with tions [NASA-CR-93206] Existence of closed convex polyhedrons with given curvatures of vertices in n-dimensional Euclidean -20243 20268 Theorems for constructing bounded polyhedron (LA-DC-9167) 12 p1899 N68-22695 Reconstructing polyhedrons from perspective pro--20626 [NASA-CR-94932] 15 p2491 N68-25943 e und -21105 polyhedra [D1-82-0714] inswing Generation of large number of faces for polyhedrons associated with cyclic groups in integer programming [AD-673405]

23 p4087 N68-36409 -21284 failure POLYIMIDES -21503 Compressive and shear properties of polyester and olyimide film honeycomb core vinyl onizing Mechanical properties of polyimidazopyrrolones, and radiation resistance of polymeric films [NASA-TM-X-59873] 16 p2691 N68-27814 -22541 nts on xiglas, Synthesis and molecular structure of thermostable 22863 [NASA-TT-F-11768] ts of Effects of nucleation on mechanical properties of thermosetting polymides [AD-671093] 19 p3297 N68-31115 23748 m tem-Effect of temperature, pressure, time on shear flex-ure strengths of polyimide-glass fiber laminates [NASA-TM-X-61212] 21 p3708 N68-34299 24504 **POLYISOBUTYLENE** 24585 сарви-

25123

lecular

30907

under

31293

19 p3298 N68-31648 19 p3231 N68-31921 Generation of gases by alpha radiolysis of plutonium 20 p3421 N68-32685 21 p3709 N68-34410 Morphology and growth of extended chain crystals (polyethylene 22 p3895 N68-35339 here wind flow using 22 p3870 N68-35531 sections of oriented 22 p3932 N68-35680 23 p4179 N68-36186 nd polyvinyl chloride ad-ser blends 23 p4082 N68-36534 01 p0085 N68-10590 Stiffness matrices derived for triangular shell ele-sents associated with polyhedral deflection distribu-08 p1245 N68-17384 09 p1362 N68-18637 Mathematical model for lifting projections of convex 20 p3515 N68-33102 03 p0357 N68-12516 18 p3025 N68-30213 Experimental study of constitutive equations for viscoelastic fluids 13 p2054 N68-24113 Thermodynamic properties of polymer solutions 24 p4271 N68-37550 POLYMER CHEMISTRY

Dry spinning equipment for conversion of polymers [AFML-TR-67-173, PT. 1] Survey of radiophysical investigations of mosphere, research trends in Soviet aviation, and other on semiconductors and polymers 03 p0340 N68-12622 Decomposition of polyoxymethylene and polyoxymethylene diacetate in phenol solutions.

[TIL/T-5474] 04 p0467 N68-13421 Solid state polymerization technology for synthesis of ultrahigh molecular weight polyethylene terephtha-[NASA-TN-D-4335] Preparation and testing object bonders in the control of the contr for liquid oxygen con (NASA-CR-77315) Fluorinated, chlorinated, a shesives prepared and tests [NASA-CR-61528] Thin film transport in polymer dielectrics, fabrica-tion of semiconfactor devices having digital or disco-tinacon responses, and chemical vapor deposition of scotic dielectric films (NASA-CR-93543) 09 p1342 N68-18931 Flux determined steady state solution for growth inetics, and purity of crystals formed by sequential Relative stiffness of macromolecules in polymer colla-nins evaluated by rate of change of polymer colla-ith changing second virial coefficient. Mass spectrometric analysis of pyrolysis products from heating in vacuum of polymeric materials [UCRL-13332] 12 p1835 N68-22419 [UCRL-13332] 12 p1835 N68-22419 Polydimethylationanes modified by introduction of discopentylene phosphonate groups [RAE-TR-67073] 12 p1838 N68-22630 Injection moldable polymers suitable for use in heat sterilizable battery cases [NASA-CR-94353] 12 p1895 N68-22707 Characterization of polymer networks using branch oint determination procedures point determination proce [REPT.-67-C-291] Soviet articles on m geophysics, thermodynar [FTD-MT-64-358] laraeli research in hink cal, and physical sciences Statistical mechanics, molecular spectroscopy and rheology, irreversible thermodynamics, surface chemistry, electrochemistry, ultracentrifugation, and light acattering studies on polymers Polymer chemistry and to benzimidazole aromatic (NASA-TM-X-59061) Equilibrium melting of polymers [NASA-CR-75474] 16 p2608 N68-27308

Ultrahigh molecular v late/ synthesis with gas c [NASA-TM-X-60501]

Constitutive equativiscoelastic polymer solu

Optically active polymeric is on solvolysis of esters stereospecificity of enzyme cut

Viscosity of low molec

Chemical compositions, p mechanical properties of st materials based on polymeric [NASA-CR-96156]

of various concentrati (ONR-TR-RLT-108)

AD-674642)

ce studies of ir-

Electron paramagnetic resonance studies of ir-radiated poly-3,3-bis/chloromethyl/oxetane [TIL/T-5733] 02 p0178 N68-11629

05 p0618 N68-14093 of adhesive polyurethanes righy halogenated polymers ity [MI-6099] 25088 SI Friction and pre flow with polymer a (USL-881) 07 p0960 N68-17051 I, and halogenated polymer ested for compatibility with of polyment in oxygen a 07 p1012 N68-17101 Transmission channel equalities, of surveys of studies on mathematic echanics, and polymers in U.S.S.R. light scattering by liquid crystals (ONR-TR-103) 09 p1297 N68-19134 (FTD-MT-63-(61) 10 p1488 N68-20095 POLYMERIC FILMS
NT MYLAR [TRADEMARK] 13 p2008 N68-23701 iclear and solid state physics, mics, and chemistry 13 p2020 N68-24058 cal, chemical, mathemati-14 p2297 N68-24697 ers 14 p2213 N68-24704 thermal stability of polymers 16 p2607 NSB-27171 Wettability of athyltric ysilane films formed at or [NRL-6644] ht poly/ethylene terephthagraph apparatus 16 p2689 N68-27407 Swelling, birefringence, a layered structure of solid puly [ONR-TR-RLT-103] for son-Newtonian, d melts 16 p2691 N68-27828 initiazole and in effects for explanation of alyzed reactions 17 p2837 N68-28455 Dynamic X my diffractions (ONR-TR-97) ificant structures theory of liquid molecular re of polyethylene 19 p3296 N68-30907 423 deg F (NASA-TM-X-1555) eight polymer solutions Polymeric films de from hydrocarbona (NASA-CR-94310) 19 p3226 N68-31365 ropellant permeability, and torable propellant bladder ic chemical structure 19 p3299 N68-31896 NASA-CR-943[2] Crystallization of trans-1-4-polyisoprene 20 p3419 N68-32529 Polymer film bi light scattering put (ONR-TR-101) Critical behavior of systems undergoing discenting-us phase transitions and polymer chain configuration 14 p2276 MAR-34584 15 p2490 N68-26874 24 p4333 N68-38106

51

F

POL

10 (C

10

[PIBMRI-1385-67]

Polymeric ablators with low irradiation and particle nintvity used as protective coatings for space vehicles

Mechanical anisotropy and sonic pulse detection of molecular orientation in polymeric films [NASA-TM-X-59874] 16 p2690 N68-27432

Environmental testing of whisker like flexible reinforced composite fiber for spacecraft window [NASA-TM-X-60137] 16 p2690 N68-27526

Mechanical properties of polyimic

16 p2687 N68-27241

or spacecraft window 16 p2690 N68-27526

neric films 16 p2691 N68-27814 and radiation resistance [NASA-TM-X-59873] Photographic recordi moplastic media [FTD-MT-66-75] techniques with ther-18 p3075 N68-30176 Process parameters for fabricating flexible Teflon films, crystallinity determinations, and techniques for electroplating Teflon films with lead [NASA-CR-95992] 19 p3284 N68-31337 on of hift Preparation nal triptycene polymer films 19 p3228-N68-31646 g for calculating permea tility of polymeric films [TR-0158/9250-01/-5] 20 p3510 N68-32660 Effects of stretch and heat-set temperatures and time on cryogenic mechanical properties of poly/ethyl terephthalate/ film [NASA-TN-D-4762] 20 p3511 N68-33034 Ultraviolet light effect on strength of stressed olymeric fibers and films polymeric fibers and fi FTD-HT-23-822-671 20 p3511 N68-33100 Polymer positive exp bladders for liquid ox-NASA-CR-724181 20 p3579 N68-33321 Semiconducting polymer film preparation and use in contaminant detector for space cabin atmosphere [NASA-CR-86047] 22 p3815 N68-34881 Ultrafine polymeric fiber filtering materials for tomic installations and research facilities requiring air purification cos JPRS-464191 22 p3815 N68-34929 Fabricability, mechanical properties, and structural efficiency potentials of boron-polymer film layer com-22 p3893 N68-35100 NASA-CR-11141 Rheo-optics of high solyethylene and poly rmation - analysis of films using photographic light scatter ONR-TR-1091 22 p3895 N68-35381 myl chloride films and polymeric films [RAPRA-TRANS-1521/5] Tear growth and propagation from cracks in plastic 22 p3896 N68-35519 [TRANS-1531] Wear inhibitor properties of polymer powders used as dry film lubricant in friction tests of steel balls [FTD-HT-23-502-67] 22 p3892 N68-35932 Analysis of dielectric bre akdowns induced by electron irradiation in polymeric fil [NASA-TN-D-48 [0] 23 p4112 N68-36070 characterization of selected metals, niconductors, and organic com-ectronic properties 24 p4218 N68-38103 Preparation and chatermetallics, semic AFCRL-68-0151] POLYMERIZATION
NT COPOLYMERIZATION
NT DIMERIZATION
NT VINYL COPOLYMERS Preparation of si-heterocyclic, b-heterocyclic and apiro type ladded polymers [AROD-4474-1-C] 01 p0022 N68-10555 Ligand-containing p materials in sterilizable [NASA-CR-90329] rs for use as separator 02 p0161 N68-11134 sum complexes -Alkylaluminum and ary olymerization reactions TR-41 02 p0174 N68-11196 [AFOSR-67-2386] 02 p0175 N68-11205 Metallo semi-inorganic p high thermal and hydrolytic (AD-660367) mer synthesis to obtain 02 p0177 N68-11426 Chemical reaction a radiation of various res with polymerizable NP-16645) 02 p0177 N68-11524 effects on synthesis of 03 p0312 N68-12277 A-954

Solid state polymerization technology for synthesis of ultrahigh molecular weight polyethylene terephtha-[NASA-TN-D-4335] 05 p0618 N68-14093 Joule heating and la for measuring molybdi (AFOSR-67-2800) rature jump equip 05 p0671 N68-14796 ocarbon compounds 06 p0790 N68-15626 Synthesis of unsaturated ff [C&OM-33] d related monomers in-rbonium salt initiators Polymerization of styrene and itlated by perchloric acid and car [AD-663844] 08 p1142 N68-17923 analysis of polymeric PA-TR-35861 08 n1143 N68-17960 og p1356 N68-19173 Controlled polymerizat [COO-1580-3] Physical and chemical invested effects of chromium oxide tigation of composition catalysts in polymeriza-09 p1299 N68-19371 Irolytic polymerizatio attering study of hy m in aqueous perchic ate media 10 p1487 N68-20040 Characterization of polyr networks using branch REPT.-67-C-291) 13 p2088 N68-23701 Surface photopolymerization monomers by ultraviolet irradii [REPT.-67-C-290] n of vinyl and diene 13 p2089 N68-23704 Polymerization of anion complexes in aqueous solu-13 p2020 N68-24068 Cromatographic analyspolymerization reactions of thermal styrene 14 p2209 N68-24430 Polymerization of vinyl mo tion at low temperatures mers by gamma radia-14 p2275 N68-24431 Spectrum analyses of anionic polymerization 14 p2215 N68-24842 lmide group copolymers prepared by solution NASA-TM-X-60445] 15 p2419 N68-26735 Development and opt [NASA-CR-66542] n of pyrrone polymers 16 p2686 N68-27067 Synthesis of epoxy polymers containing siloxane linkage [NASA-TM-X-53698] 16 p2686 N68-27086 Comparison between ra in and chemically in-[TID-24281] f styrene 16 p2613 N68-28081 Reaction kinetics and ar irradiation to initiate polym [BNL-12334] yais in use of gamma ray tion reactions 16 p2614 N68-28108 Nucleation and polycondensation kinetics and oligomer production is aminocaproic acid to polycrystal sta tion to study reacti n in polymerization 17 p2838 N68-28546 Molecular structure, reactio isomers in epoxy-amine polyme [NRL-6690] izations 18 p3099 N68-30444 Additive effect on rad polymerization of trioxane [NSJ-TR-108] induced solid state 18 p3030 N68-30619 Oligopeptide and polyper prebiological conditions, and terization of synthetic polymen de formation under eduction and charac-19 p3213 N68-32146 Direct synthesis of in polymerization of selected [NASA-CR-95969] enzylidene polymers by 19 p3235 N68-32189 Effects of radiati merization of polymers on TS-44581 20 p3417 N68-32473 Gel effect, chain transfer re clated to bulk polymerizatio igh degrees of conversion action, and other studies in of vinyl monomers at high degrees [RTS-4462] 20 p3510 N68-32680 Formulation of rapid curing polymeric foam material with large volume increase, resistance to solvents, and good strength MLM-13971 22 p3897 N68-35759 Effect of time of heating on thermal polymerization of L lysine [NASA-TM-X-62002] 22 p3813 N68-35769 ha-phenylethyl isocyunide and Polymerization of alphidentification of product 24 p4213 N68-37670 POLYMERS Preparation of si-heterocyclic, b-heterocyclic and spiro type ladded polymers [AROD-4474-1-C] 01 p0022 N68-10555

Research studies on metals and alloys, polymers, glass, and pyrolytic materials, and techniques for treating and investigating them [NASA-CR-90231] 02 p0223 N68-11013 02 p0223 N68-11013 ms and equa ple tras dymer syst s for glass otion phenomena 04 p0526 N68-13201 (NASA-CR-91277) Electron paramagn free radical formations [NASA-CR-91804] etry of ce spectro ors under tensile stress 05 p0680 N68-14257 Ultraviolet optical properties of polymers in terms of onformational properties of oligonucleotides for pre-icting optical properties of ribonucleic acids 05 p0610 N68-14611 Materials science research on inorganic nonmetallic aterials, metallic solids, polymers, and solid state NASA-CR-91779] 06 p0893 N68-15143 Heat capacities of linear polymers at low tempera-06 p0928 N68-15958 m on chain scis-Effect of gas sion and cross linking in polymer fil [NASA-TM-X-60858] 07 07 p1011 N68-16474 nce and velocity similarity laws of Frictional resists drag reducing dilu [NSRDC-2502] 07 p0989 N68-17107 Mathematical model for polymer molecules in which oscillators consisting of ing is due to hindered internal IONR-TR-RLT-1011 08 p1142 N68-17922 Time dependence of stress, strain, and displacement istributions in viscoelastic and plastic solids under dif-[NASA-CR-93354] 08 p1254 N68-18129 Interdisciplinary materials research in inorganic non-tetallic materials, metallic solids, polymers, and solid state physics (NASA-CR-93718) 10 p1538 N68-19692 Nuclear radiation effects on polymer material pro-perties in accelerator environment [AEC-TR-6920] 10 p1542 N68-19839 10 p154Z N68-19839 Optical characterization of orientation of amorphous polymers and amorphous parts of crystalline polymers ONR-TR-94] 10 p1577 N68-19884 er viscosity in terms of shear rate 4] 11 p1793 N68-20779 Shock wave-bubble interactions and reflection holo-ram recording of long chain polymers in cavitation 11 p1683 N68-20833 [E-115-A.1] Problems, properties, and tials of synthetic and 11 p1742 N68-21335 [SGAE-CH-50/1968] Calculating yield stress of glassy polymer as function temperature and strain rate (REPT.-67-C-353) 11 p1719 N68-21424 Electrical and photoelectrical semiconducting polymers with ele conductivity modes [JPRS-45060] al properties of organic electronic, but not ionic 11 p1776 N68-21822 Polymeric cryogenic | filled with liquid hydrogen [NASA-CR-72115] ve expulsion bladders 12 p1881 N68-21916 Flow properties of Cyanamer P280 polyacrylamide and sodium carboxymethyl cellulose in aqueous solu-tions predicted by rheology 13 p2087 N68-23264 Calculating primary primary primary primary printed primary pr ct quantum yields for d glassy polymers 13 p2012 N68-23398 Thermally stable polymers and mechanism of pyridoin condensation 13 p2014 N68-23568 lel of solid state, long chain polymers 13 p2135 N68-23670 Molecular model [REPT.-67-C-238] Dielectric theory and electrical property survey for REPT.-67-C-2571 13 p2089 N68-23880 Synthesis of spiro polymerythritol with large and a ers by condensation of pen-mall ring diketones 13 p2023 N68-24277 [NASA-CR-75474] 16 p2608 N68-27308 Relationship of polymer mec ean molecular weight and polyn echanical properties to lymolecularity 17 p2903 N68-28438 [TIL/T-5656] Monomers and polymers of vinyl cyclopropase, 1,1-dichloro-2-vinyl cyclopropase, and cyclopropyl acetylese

18 p3020 N68-29862

X

13

ion 01

11

43

13-

58

07

22

29

92

39

o-

33

14

12

rs

0

inte and glassy polystyre [TR-68-7-CM]

Physical properties measurement of model ERDE-26/R/67) 18 p3100 N68-30534 Strength, service life, and mechanism of failure of elastomers and polymers - problems of strength of highly elastic materials [FTD-MT-66-10] 19 p3378 N68-31566 High thermal conduction apacecraft electronic equip [NASA-CR-96151] ivity polymeric materials for 19 p3299 N68-32037 Effects of radiation polyr pigments and fiflers [RTS-4458] rrization of polymers on 20 p3417 N68-32473 Structures and motion of polymers using n methacrylate monomers ar magnetic resonance 20 p3423 N68-32807 Thermal degradation of alyzed by combined mass polymeric materials spectrometric and thermagravimetric technique [NASA-TM-X-61159] 20 p3512 N68-33303 Char yields of syntlazomethines [NASA-CR-96367] inked polymeric 20 p3433 N68-33515 Crystallization, crosslinks tanges during crystal-liqu oriented polymeric sys [NASA-CR-96723] 21 p3709 N68-34667 Modified polyester resins relaxation times of polystyre cial plantics, and polymer bi properties - conference molecular weights and es, hazards of commer-ding to increase plastic 23 p4082 N68-36532 nd polyvinyl chloride ad-ier blends 23 p4082 N68-36534 Chlorinated polyethylene a ditions to thermoplastic polym Review of solubility, p bility, and diffusivity in polymer diluent syste [NASA-CR-97218] 23 p4083 N68-36640 Solid state reactions, strucharacterizations of polymers (NASA-CR-97202) tural properties, and d other materials 23 p4084 N68-36830 Reaction mech polyacrylonitrile pyrolysis of 24 p4214 N68-37680 Prediction method for diffu ns on polymeric solutions ion coefficient calcula-24 p4271 N68-37764 Heat treatment effects on mechanical properties of polyacrylonitrile fibers and fabrics [RAE-LIB-TRANS-1306] 24 p4272 N68-37963 POLYMETHYL METHACRYLATE Short duration shocks indu pact of thin Plexiglas plates 03 p0357 N68-12400 ultrasonic sound wave select material for ultrasonic lens (SCL-DR-67-110) 05 p0681 N68-14601 Energy transfer in poly nall amounts of p-terpheny atic molecules or sinks lymethyl methacrylate with nyl and nonluminescent aro-[COO-1224-14] 07 p0954 N68-16269 el tests of Plexiglas and nylo imperature, stresses and abis 07 p1089 N68-16414 BAL-939] Energy transfer and radiation polymethyl methacrylate n protection in radiolysis te stereoisomers and [COO-1224-15] 07 p0961 N68-17199 Ligand containing polymers for use as heat steriliza-ble separators for silver zinc battery [NASA-CR-93176] 08 p1118 N68-17232 Ligand con for use as heat sterilies Energy loss of protons in Be, Al, Si, lucite, sapphire, 09 p1410 N68-19194

Single impact gun for rain erosion studies, and analysis of experimental rain impact damage data 09 p1324 N68-19412 Liquid shock impact effects on polymethyl sethacrylate, and aluminum copper alloys 09 p1446 N68-19419 Brittle, and ductile failure of polymethyl methacry-late at elevated temperatures 10 p1541 N68-19610 sy polymethyl methacry-10 p1543 N68-20215 Reflected and unreflected critical experiments on mixtures of exriched uranium metal with Plexiglas, polyethylene, or Teffon [ORNL-TM-2082] 12 p1939 N68-22863

Integral and differential equations for solution of rariety of problems in mathematics, mechanics, and sa-COppolyment [NASA-CR-94533] [FTD-MT-65-03] 06 p0880 N68-15601 13 p2010 N68-23201 Norms of linear Sturm-L urs in connection with prol ion of continuous functions ce of extinction angle 13 p2020 N68-24064 of extinction angle in thyl methacrylate frac-13 p2021 N68-24078 06 p0867 N68-16031 of differentiation using Data reduction by morthogonal polynomials [BRL-1380] stant of Plexiglas radome (TR-0158/3230-46/-101 07 p1014 N68-16420 13 p2030 N68-24155 General equations for standard deviation of he applied to Apollo trackin [NASA-TN-D-4121] ic explosion effects on inum sheets 14 p2252 N68-25376 rd deviation, and rms res fitted polynomials Dynamic model for seis restressed plexiglass and als 07 p0977 N68-16749 Shock wave generated them hydrocarbons, organic compou-other alloys and mixtures [UCRL-50108, V. 2, SUP. 1] mials for mathematical les for horizontal wind [NASA-CR-61195] 09 p1332 N68-18486 15 p2565 N68-25693 Third degree func-constitutive equi nal polynomial representation Fracture toughness in plastics based on fracture sur-face appearance, especially for polymethyl methacry-11 p1791 N68-20626 16 p2687 N68-27315 INRL-MEMO-18631 Variation convergence for Bernstein polynoreal functions Plexiglas for inexpensive dosimetry of global irradi-12 p1896 N68-21886 (PB-177734) 19 n3280 N68-31790 Linear graphing technique ding polynomial Alkali effect on vi ric titration of methacrylic TOOLS TDOC:-67SD269A1 12 p1899 N68-22515 acid copolymens [RTS-4378] 20 p3418 N68-32492 tion formulas 12 p1899 N68-22809 for caloric variables of General Lagrangian (NASA-TN-D-4424) Flow model for three dimensions boundary layers of ablatic Approximation p state of various gase [DLR-FB-68-19] INASA-TM-X-611881 21 p3795 N68-34435 13 p2173 N68-24190 Linear viscoelastic wave propagation and attention in polymethyl methacrylate rods Numerical determination of functions of zero roots of power se nomials from transforma e and annuins of conver 22 p3970 N68-35030 Q-switched laser and co to study effect of laser radi [FTD-MT-24-214-67] olled output power used n on Piexiglas 14 p2282 N68-25616 22 p3894 N68-35282 recting codes u um quadruti ials and perm escence of aromatic Flurorescence and p R-3751 15 p2429 N68-26745 hydrocarbons in polymethy (TRW-07126-6004-R000) processes, and com-omial equations 16 p2693 N68-27033 22 p3824 N68-35302 olet radi and temperature ef-Scientific studies in ma tronomy in U.S.S.R. [FTD-MT-64-357] fects on polymethyl m [MINTECH-T-5766] ics, mechanics, and as 24 p4273 N68-38352 16 p2713 N68-27244 netical prop rties of polynomial values 16 p2694 N68-27247 Phase transitions in rare earth metal oxi earth metal fluorides, and in manganese i duced by shock waves from explosives Methodol-gy and general runs for synthesis and us olynomial discriminant fund purpose FORTRAN 4 proosives 03 p0423 N68-12519 Shock-induced polymorphic plane transitions in iron DAC-622031 16 p2634 N68-27751 FORTRAN 4 programs for syntholynomial discriminant functions 03 p0423 N68-12614 nis of multivariable Correlation of glass transition temperatures with chemical structures of polychloroscryfates, polymethacrylates, and other polyacrylates [RAE-TR-67298] Representation of simp rs by poly 16 p2698 N68-27772 Nucleation and growth of iron and vanadium thin lms to observe polymorphic transformation using hastic approx 18 p3102 N68-29915 (NASA-CR-86084) 18 p3153 N68-30196 Polymorphism of copper sulfides in chalcosine and digenite systems (NASA-TT-F-11766) 18 p3032 N68-30830 Chebyshev polys [CEA-R-3427] 18 p3103 N68-29981 POLYNOMIALS NT BINOMIALS algorithm to three Bes-NT DYADICS NT HERMITIAN POLYNOMIAL (EUR.3926.F1 18 p3105 N68-30278 Selected problems of numerical analysis performed in electronic deak calculator for solving problems in 20 p3513 N68-32235 ph order algebraic equavolving polynomials [APCRL-67-0392, PT. 1] Analog computer to at tions with real coefficient (FTD-HT-67-418) 03 p0327 N68-12781 Systems of Laguerre poly actions for solving neutron to 20 p3445 N68-33475 is and as rmalization problems 04 ±0536 N68-12842 Polynomial approximative heat trans [ECOM-6034] atmospheric model of ation of Fredholm integral equations of one class 04 p0530 N68-13339 21 p3718 N68-34300 Formation of polynogramming routine for the [FTD-HT-23-1396-67] terpreting system, pro-rest computer 21 p3665 N68-34572 Legendre, Chebyshev, and half-range polynomial ap-roximations for calculating differential energy spectra Computer propolynomials REPT.-68-35) [HASL-185] 05 p0706 N68-14116 21 p3665 N68-346 dem in Hilbert space ciples 03 p0684 N68-14967 21 p3715 N68-34686

5

PO

PO

Pi

C

oş

POP

20

POLYOT SATELLITES Three-stage variable-shift iteration for polynomial eros and its relation to generalized Rayleigh iteration CS-107] 23 p4087 N68-36290 [CS-107] POLYOT SATELLITES Equatorial coordinate observations during October 1964 for Soviet artificial satellites in Elektron, Cosmos, Polyot, and Voskhod series 05 p0736 N68-14170 Horizontal coordinates for Polyot, Elektron, and Cosmos series Soviet artificial satellites during Sep-tember and October 1964 05 p0736 N68-14174 Equatorial and horizontal coordinates for Soviet Polyot, Elektron, and Cosmos series artificial satellites during December 1964 05 p0736 N68-14180 Astronomical observations for eleven Soviet artifi-cial satellites in Cosmos, Polyot, and Elektron series -November 1964 05 p0737 N68-14440 Astronomical observations for fifteen artificial satel-lites in Cosmos, Polyot, and Elektron series - January 1965 05 p0737 N68-14470 Introductory work on orbital calculation at Ear-lyburn satellite tracking station [ROE-STS-51] 17 p2968 N68-28767 POLYPHENVL ETHER High temperature tests to determine fatigue life of 120mm bore ball bearings with fluorocarbon, polyphonyl ether, and synthetic base parafflit base labricants [NASA-TN-D-4830] 23 p4066 N68-36075 POLYPHENYLS tial scanning calorimetry for melting, transi-es and specific heat of polyphenyls 02 p0173 N68-11032 Differential sc [AI-CE-58] interaction of Attapulgus clay and polyphenylic reactor coolants [EUR-2646.E, PT. 2] 07 p0956 N68-16434 07 p0956 N68-16434 Statistical thermodynamics o capacities in critical phase trans cs of polyphenyls and heat tion regions 11 p1645 N68-20707

Mass spectroscopic analysis of volatile products from probysis of polyphenyla (CONF-660553-6) 15 p2419 N68-26724 Chemical analysis technique for determination of polyphenyla anal alkylinaphthalenes in working environ-

ments
[EUR-3924.I]
18 p3025 N68-30202
Ultrasonic frequency degradation and thermal aging
of polychlorophene rubber solution in benzene
[NASA-TT-F-11801]
18 p3099 N68-30352

Evaluation of composite materials for use as gaskets in high pressure and high temperature environments (AFCRL-67-0592) 11 p1718 N68-20828 Reaction rate analysis applied to mechanical proper-

ties of polymers [PA-TR-36] Permeation, diffusion, and solubility of helium, water vapor, hydrogen, nitrogen, and carbon dioxide in amorphous and crystalline polypropyiene and polyester

[TRANS-1537] 22 p3896 N68-35527 Epoxide effects on stability of polypropylene polymer containing titaminum residues [TRANS-1508] 22 p3827 N68-35559 DLYMACYLABIDES

POLYSACCHARIDES
NT CELLULOSE
NT DEXTRANS
NT GLYCOGENS

Thin layer chromatographic methods for analyses of sugars, higher polysaccharides, and sugar derivatives [SGAE-BL-20/1967] 01 p0021 N68-10455 POLYSTYRENE

Quasi-dc photoconductance measurements in polyethylene and polystyrene during steady state cobalt 60 irradiation (NCL-67-35R) 03 p0408 N68-12576 Gaseous environment effects on static fatigue of nylon, and of polystyrene filaments p0525 N68-13108 (ERDE-78/766) 04 p0525 N68-13108

[ERDE-7/R/96] 04 p0525 N68-13108 Attenuation of longitudinal, ultrasonic sound waves in various plastics studied to select material for ultrasonic lens (SCL-DR-67-10) 05 p0681 N68-14601 Solution properties of polybutadisms and polystyrene

block copolymers
[NASA-CR-92345]

O6 p0859 N68-16091
Free radicals in photodegradation of polystyrene and its homologs
(NRL-663)

O9 p1292 N68-18379

Optical absorption spectra of transient excited states and charge carriers produced by radiolyses of styrene plastics [TR-0158/3250-20/-1]

Yielding phenomena in glassy polymethyl methacrylate and glassy polystyrene [TR-68-7-CM] 10 p1543 N68-20215 Experimental study of constitutive equations for

vincoelastic fluids
13 p2054 N68-24113

Influence of grafting on characteristics of unsaturated polyester-styrene copolymers [ONERA-TP-538] 19 p3296 N68-30880 Ultrasonic sound transmission in aqueous dextran solution and polystyrene suspension 19 p3296 N68-30966

Evaluation of antistatic coatings for polystyrene containers [NAD-CR-RDTR-111] 19 p3298 N68-31385 Critical experiments with homogeneous plutonium dioxide polystyrene at hydrogen plutonium ratio of five

(BNWL-8A-1630) 21 p3724 N68-34335 Dielectric study of low temperature molecular motions in polystyrenes and polychlorostyrenes

22 p3821 N68-34974

Modified polyester resims, molecular weights and relaxation times of polystyrenes, hazards of commercial plastics, and polymer blending to increase plastic properties - conference

23 p4082 N68-36532 Molecular weight distribution, shear rate dependent viscosity, and melt stress relaxation behavior of polystyrenes 23 p4082 N68-36536

Adsorption of nitrogen and argon on highly dispersed polystyrene 24 p4213 N68-37649

POLYSULFIDES

Nonsteady creep of polysulfide elastomers investigated for atmospheric temperatures 23 p4081 N68-36147

POLYTETRAFLUOROETHYLENE

Friction and wear in cryogenic liquids for phenolic and polytetrafluoroethylene composites of various particle sizes and concentrations [NASA-TN-D-4565] 13 p2077 N68-24142

[NASA-TN-D-4565] 13 p2077 N68-24142 Quantitative measurements of electron apin resonance spectra of free radicals produced in irradiated polytetrafluoroethylene [SAMSO-TR-68-140] 15 p2415 N68-26313

Polytetrafluoroethylene film morphology and light scattering diffraction patterns [ONR-TR-108] 22 p3917 N68-35325

Heat treatment and cold stretching effects on polytetrafluoroethylene structure [TRANS-1535] 22 p3896 N68-35526 POLYTROPES

Steady state model for solar wind in equatorial plane 23 p4162 N68-36374

POLYURETHANE FOAM

Composite polyurethane foam and multilayer Mylar foil insulation for liquid propellant tank 01 p0138 N68-10328

Measuring instrument for determining moisture content in rigid polyurethane foams (SC-DR-67-696) 03 p0357 N68-12642 Performance test evaluation of foam thermal insulation materials (PEPT 470) 06 p0857 N68-15459

[REPT.-470] 06 p0857 N68-15459 Ferrocene polyurethane foams [SC-DC-67-2060] 08 p1190 N68-17642

Gold epoxy projectiles accelerated into lead, hard and soft aluminum, and rigid polyurethane foams to determine crater formation [NASA-CR-93294] 08 p1253 N68-17787

Penetration of porous projectiles in aluminium and plastic targets
[NASA-TN-0-4505]
11 p1796 N68-21293
Construction materials, fabrication, and structural

Construction materials, fabrication, and atructural design of plastic foam shelter for satellite geophysics observation stations [PMR-TM-68-1] 13 p2076 N68-23963

Rigid, open cell polyurethane foam as cryogenic multibayer insulation component for long term storage of cryogenic propellants [NASA-TM-X-52332] 15 p2488 N68-26274

Mathematical method for determining diffusion havior of gases in rigid polymeric foams
15 p2446 N68-26902

Polyurethane foam escapsulation techniques for maintaining constant atmosphere and providing mechanical protection against high voltage breakomin in spacecraft ion propulsion systems 15 p2446 N68-26904

Buildings in barrels concept for on-site fabrication expandable structures using aluminum or plastic clad solywrethane core materials

Improved techniques for manufacturing polyurethane foams 18 p3080 N68-29832

Test methods and procedures to determine thermal conductivity of polyurethane foam and aluminized Mylar [NASA-CR-61915] 19 p.3385 N68-31508

Preparing PETN-impregnated polyurethane foams capable of iniation by gaseous detonation waves [NRC-10168] 19 p3299 N68-31841

Chemical properties of polyurethanes and viscoelastic behavior of ionomers 20 p3509 N68-32576

Air Force experiences with reticulated foam and other means of inerting, suppressing, or purging fuel system fires 23 p3988 N68-36272

Vent holes for reduced carbon dioxide pressure generation during feaming of polyurethane resin [GEPP-11] 23 p4068 N68-36732

Buoyance blocks of balsa and polyurethane four tested for strength against damage in underwater explosions [TL-1968-8] 23 p4085 N68-37252 Evaluation of gas chromatographic determination of

Evaluation of gas chromatographic determination of trichlorofluoromethane in polyol component of polyurethane foam [NASA-TM-X-53792] 24 p4216 N68-37890

POLYURETHANE RESINS

Structure-property study of polyurethane, epoxy, polyisocyaniarate, and polyoxazolidone adhesives [NASA-CR-90034] 01 p0080 N68-10128

Preparation of si-heterocyclic, b-heterocyclic and spiro type ladder polymers [SC-RR-67-478] 01 p0081 N68-10556

Shear modulus determined for polyurethane rubber containing biescodal mixture of coarse and fine sodium chloride particles (ONR-1R-7) 04 p0526 N68-13499

Silane coupling agents used as primers, and additives for polyurethane bonding [NASA-TM-X-53676] 04 p0326 N68-13510

Torsion tests to determine effect of filler content on glass transition temperature and glassy modulus of polyurethane rubber [WRE-TN-CPD-113] 08 p1189 N68-17312

Polyurethane coatings for subsonic rain erosion pretection of metallic, and plastic laminates 09 p1356 N68-19411

Molecular structure of polyester and polyether type polyurethanes

polyurethanes [TR.67-77-CM] 13 p2087 N68-23333 Bond line thickness, adherend etchant, and adherend primer effects on lap shear strength of polyurethane ad-

[NASA-CR-61808] 15 p2488 N68-26291 Polyurethane plastic coatings for rain impact erosion protection

protection [AFML-TR-67-355] 16 p2687 N68-27327

POLYVINYL ALCOHOL

Stress-strain, network topology, and optical coefficients of crosslinked polyvinyl alcohol gel, and depolarization of light by birefringent polymeric materials 18 p3098 N68-30035

POLYVINYL CHLORIDE

Simulation of water immersion resistivity of polyvinyl chloride electrical insulating compounds [AD-656404] 01 p0080 N68-10157

Tensile properties of plasticized polyvinyl chloride as function of processing variables and environmental exposure [AD-661402] 04 p0526 N68-13440

[AD-661402] 04 p0526 N68-13440 Infrared dichroism data on dehydrochlorinated polyvinyl chloride [ONR-TR-95] 10 p1490 N68-20129

Dichroism and birefringence theory for polyvinyl chloride containing oriented polyene segments [ONR-TR-92] Photodegradation of polyvinyl chloride exposed to

ultraviolet radiation (NASA-TM-X-59805) 15 p2487 N68-26106

09 w1329 N68-19072

SUBJECT INDEX Deformation and creep properties of fiber glass Color-change and conductivity measurement methods of determining heat resistance of polyvinyl chloride [NASA-TT-F-11758] 17 p2903 N68-28425 Irradiation effects on polyvinyl chlo Relationship between molecular structure of polyvi-myl chloride and thermal decomposition product [NASA-TT-F-11733] 18 p3032 N68-30855 Manufacture, testing, and calculation of composite constructions of glass fiber reinforced plastics and ther-IM-73521 Biaxial penetration tests on impact resistant polyvi-nyl chloride films and polymeric films [RAPRA-TRANS-1521/3] Stabilization methods to prevent thermal degrada-tion of polyvinyl chloride polymers [TRANS-1526] 22 p3827 N68-35518 Extrusion method for manufacturing rigid polyvinyl (TRANS-1534) Chlorinated polyethylene and polyvinyl chloride ad-itions to thermoplastic polymer blends 23 p4082 N68-36534 PONDEROMOTIVE FORCES Ponderomotive forces acting upon conductive odies in traveling magnetic field of cylindrical induc-r, and effect on magnetohydrodynamic generator Plasma waveguides for linear accelerators, pon-deromotive instrument for measuring laser output, and classifying Cosmon satellites missions by orbital ele-ment analysis. nents for measuring laser out-Ponderomotive instru PONTRYAGIN PRINCIPLE analysis [NASA-CR-1006] NASA-CR-1014]

16 p2690 N68-27585

17 p2903 N68-28425

l chloride plasticizers 18 p3028 N68-30479

21 p3707 N68-33615

22 u3895 N68-35517

22 p3883 N68-35615

07 p1058 N68-16292

10 p1615 N68-19649

10 p1528 N68-19651

DEX

riding down

on of

7949

olyu-

9832

rmal

1508

oams

1841

and

2576 and fuel

6272

6732

foam tplo-

2252

on of olyu-

7890

юху.

0128

and

0556

1499

tives

3510

i on

7312

pro

1144

type

1333 rend ad-

1291

1327

and

035

lyvi-

1157

le as

440

ated

129

rimyl

527

d to

106

Optimal control problem analyzed using Pontryagin aximum principle 04 p0488 N68-13330 Control theory elements applied to nonlinear problems - matrix representation of linear systems - optimal and predictive control 08 p1155 N68-17421 Method for solving optimus Pontryagin maximum principl control problems using 09 p1321 N68-19253 Maxima-minima theory, Pontryagin principle, and alculus of variations for optimal trajectory and control 10 p1593 N68-20084 Regret function derived for variational methods of Pontryagin and Bellman, and its application in representation of known optimal control policies. [NASA-CR-93737] 10 p1511 N68-20291 Pontryagin maximum principle, calculus of varia-tions, and dynamic programming optimization techniques applied to trajectory and guidance 11 p1782 N68-21231 Sequential state and parameter estimation in non-linear systems and application to reactor control [TR-0158/3306/-1] 15 p2441 N68-26385 Minimum fuel transfers between coplanar and non-oplanar orbits 15 p2560 N68-26394 Nuclear reactor operating condition optimization using Pontryagin principle and qualitative solution of Hamiltonian of control equations (FTEF-539) 15 p2503 N68-26507 Pontryagin maximum principle applied to trajectory optimization for required guidance method 16 p2715 N68-27764 Theoretical and computational aspects of optimal [RAE-TR-67320] 18 p3030 N68-29865 POPULATION INVERSION Properties of inverse arc maps, and space decom-position into connected continua 10 p1544 N68-19600 Kinetics of physical processes in carbon dioxide lasers - method for calculating populations in vibra-tional levels of polyatomic molecules [NASA-TT-F-11667] 13 p2079 N68-23525 13 p2079 N68-23525

Oscillation mechanism and processes producing population inversion in carbon dioxide lasers [NASA-TT-F-11884] 20 p3494 N68-33573 **POPULATIONS** Selection, and ranking procedures for restricted families of probability distributions [AD-664474] 09 p1359 N68-18538 Relationships between cell population kinetics and radiation resistance in pocket mice [NASA-CR-69454] 09 p1283 N68-18954 Time variation of spectral line intensities for molecular and atomic hydrogen in pulsed discharges in terms (CEA-R-3185) [NASA-TN-D-4403] populations [NASA-TN-D-4403] proparisons with control for variances of acomal populations. TR-421 16 p2693 N68-27153 Single stage procedures for ranking multiply clas-sified variances of normal populations [TR-41] 16 p2695 N68-27309 Theory of population of excitation of etoms and ions and application to electron temperature and density determinations (REPT.-859/XVIII/PP) 19 p3343 N68-31819 Theory of population of atomic and ionic excited levels and its application to C-4, N-5, and O-6 ions [INR-859] 24 p4306 N68-37491 U POROSITY POROSTTY NT MICROPOROSITY Fortran 4 computer program for calculating and lotting surface area and pore size distribution data ob-sined by gas adsorption tained by gas adsorption [NASA-TM-X-63061] 04 p0345 N68-13519 Porosity-polarization rel applicable to lunar surface (RM-390J) ship of powdered basalt 04 p0580 N68-13862 Microstructure of porous m erials in earth crust 06 p0835 N68-15385 Microscopic, X ray diffraction, porosity, and pore size distribution data for heat sterilizable Ni-Cd battery [NASA-CR-94315] 12 p1819 N68-22235 Temperature and porosity depending in the rigidity and Poisson ratio of beryllia [AAEC/TM-402] dence of modulus of 14 p2277 N68-24715 Corrosion and porosity of electrodeposited metal protective coatings by hydrogen sorption measure-[RIA-68-717] 16 p2675 N68-27223 alloy produced by are melting an [USBM-RC-1274] ity, and fractures of rheniu d power metallurgy 16 p2684 N68-28106 Effects of organic carbohydrate additives on porosity and density of irradiated U and Pu powder fuel for Experimental Breeder Reactor 2 |
NUMEC-3524-39| 17 p2917 N68-29365 Correlating lunar surface materials thermal conduc-tivity with its porosity and shear strength in high 18 p3067 N68-29927 Effect of porosity for sintered uranium dioxide on inetics of grain growth 19 p3227 N68-31441 through ro (M-7387) Magnetic field strength measurements of small sun-spots and pores [RTS-4241] 20 p3588 N68-32929 20 p3588 N68-32929 Pocosimetry data interpretation using statistical model for particle size analysis [LA-3938] 21 p3733 N68-34647 Metallographic examination tungsten, carbon foam, and cera (Y-1625) n of porous beryllium, 24 p4263 N68-38366 POROUS BOUNDARY LAYER CONTROL Influence of mass injection rough surfaces, on turbulent jet development [TWF/R/3] tion, through smooth and at boundary layer and wall

10 p1516 N68-19987

ed for porous solids in

07 p1092 N68-17062

in porous media and in-rground water level 07 p0993 N68-17201

OROUS MATERIALS

NT POLYURETHANE FOAM

Equation of state determ

reactor containment s

Porous trailing edge of field in moving air streat [NASA-CR-66565] 10 plass Nag-19791 a diffusion in porous e range 10 p)517 N68-20255 ture of porous solids using me [CEA-R-3204] ry porosimeter 12 p1879 N68-22929 Design of experi ratus to study heat transfer to wette (ORO-3411-9) 13 p2166 N68-23098 heights of water in Falling capillary equi corous medium under ac-cions at atmospheric pres Q-3411-101 13 p2166 N68-23099 Heat generating porous tub actions at high temperature reactor for studying fast 13 p2024 N68-24295 w of hydrocarbon liquid 14 p2242 N68-25023 materials using nuclear a and three phase rela-15 p2416 N68-26424 Shock front propagation and nonlinearity of poros sorbers in interaction of air flow and sound in dis-oundary layer measured with schlieren photography boundary layer measured v [AMRL-TR-67-120, V. 11] 15 p2510 N68-26451 Thermal behaviour of fib 17 p2986 N64-28756 Design and operating chara-heat transfer through porous m [ORO-3411-11] tics of heat pipe in dia study 17 p2986 N68-28934 lysis of porous solids ucting fluid 19 p3383 N68-30930 Continuum mechanical saturated by transient heat of Effective thermal terstitial materials un n characteristics of in-pression loads and vary-NASA-CR-73244) 19 p3386 N68-31671 Plate-gap model of porou reduced density projectile in [NASA-CR-1140] s solid and application to 19 p3381 N68-31912 Poroeity effects on mechanical properties of sintered 20 p3497 N6E-32572 es in many-phased flows in porous media. 2) 20 p3460 P68-32587 REPT.-48-2) n of Mars porous surface est gas co soils by unmanned spacecraft [NASA-CR-96286] 20 p3585 N68-32604 Porous chromium-nickel stee turing methods, properties, an veyor-bed technology, filter tecl safety devices el compacts - manufi ad applications in co Imology, and flash-bu 20 p3504 N68-33340 Adsorption of gases on internal surfaces of porous aterials 21 n3679 N68-33773 Size of droplets formed di rough rotating porous solids ing spraying of liquids 22 p3882 N68-35258 us materials for ther-(GA-8574) 22 p3809 N68-35962 Experimental desconflicient for system density and viscosity of transverse disper niscible fluids of o 23 p4106 N68-36329 Reaction mode effects on pore structure develop-ment observed on active carbon in gaseous carbon distributions 24 p4271 N68-37504 Pressure effects on ionic di als with aqueous electrolytic so [TR-37] lusion in porous materi-24 p4219 N68-38229 POROUS PLATES Mass transfer cooling on porous flat plate in carbon dioxide and sir streams [NASA-CR-90404] 02 p0283 N68-11504 n of state for solids besed on poreist plate INASA-CR-916751 .. 05 p0745 N68-13965

SUB

POST

F

C

[JPS

Pr

G

(SN-

by L

De

[NA

Po

[AEI

Pe [NA

[NAS

[NA

Po

[NAS

Surve

for or track [NAS

Sol 990 a [NAS

Co

INAS

Fli

FO

POSTE

POST-

Underwater locator beacon detection ranges for fuselage encapsulated recorders [NA-68-7] 17 p2885 N68-29028 Transport processes of fuel oxidizer mixture when in-red through porous plate into laminar boundary Technical stand and requirements of sidereal turnta-bles for testing gyroscope and position indicator systems [BMWF-FB-W-68-47] 06 p0925 N68-15485 [FTD-HT-23-790-67] 22 p3879 N68-35706 Effectiveness of electron es of porous plates with volume ional cooling of nuclear reactors Temperature profile heat release for effusion or for heating gases POSITION SERVOS
U SERVOMOTORS (G3681.21.01C) 17 p2912 N68-29033 Localization in independent pair model of atomic structure and wave functions applied to electron correlation energy in Be atom POSITIONING 09 p1449 N68-18679 Modulation techniques for position fixing by range measurements from two or more satellites [NASA-CR-86017] 04 p0534 N68-13132 Heat and mass transfer of porous plate boundary layer reaction with ethyl alcohol in low speed wind tun-18 p3128 N68-29736 Catalog of satellite positions for October to December 1963 [NASA-CR-95872] 18 p3164 N68-30147 [NASA-TT-F-11692] 15 p2573 N68-25769 Requirements and restraints analyses on positioning ap navigation displays in military aircraft cockpits 05 p0689 N68-14838 Interferometric mes nt of mass transfer in turbulent boundary layer of po (FTD-MT-24-105-67) Stopwatch observations of satellites at Mouncastie, Ashley, Italy, and Edinburgh ground stations during March 1968 [ROE-ST3-75] 19 p3237 N68-31228 15 p2451 N68-26057 Magnet positional adjustments in synchrotrons for alignment of closed orbits [UCRL-17796] 07 p0982 N68-16925 Experimental determ ation of critical blowing parameters on porous plate [FTD-HT-66-666] Simultaneity circle model for space triangulation and todetic localization of satellites from nonsimultaness observations 19 p3265 N68-31424 Packaging three dimensional objects in apheres and ptimization of fit and position using gradient Stress wave propagation through porous and impermeable layers (SC-CR-67-2863) 16 p2672 N68-28105 22 p3969 N68-34962 19 p3368 N68-32004 POSITIONING DEVICES [MACHINERY]
NT BOOMS [EQUIPMENT]
NT CAMS POROUS WALLS Satellite ephemeris computa dicting orbiting satellite passage tation program for pre-Steady state flow of anisotropically conductive liquids between parallel porous walls 02 p0256 N68-11683 19 p3369 N68-32012 Instrument landing system Flight Inspection Posi-tioning System /FIPS/ using radio frequency inter-ferometer technique for angular position measurement [NA-68-33] 20 p3526 NoS-32811 Variable flexibility tethers for astronaut extravehicu-Wall suction effects on turbulent flow in porous cylindrical tubes [NASA-CR-65966] 08 p1137 N68-18187 05 p0649 N68-14997 Ferrimagnetic single crystal sphere orientation and-control and localization of Mathematical model for analyzing porous body at high temperatures (TN-1968-16) 23 p4063 N68-36933 21 p3658 N68-34025 14 p2371 N68-24767 POSITIVE FEEDBACK Technique for visibility calculations of aerial ob-server sighting and target recognition ranges [SIO-REF.-68-13] 21 p3693 N68-34523 PORPHINES Pulse width modulation control of servomotor with Synthetic productionew porphines and sal production and spectral characteristics of as and salt components linear feedback (UCRL-17617) 05 p0639 N68-14203 17 p2843 N68-29278 Geographical orientation /pilot awareness of naviga-tional position/ during low altitude flight under visual flight rules instrument errors, error reduction, and elements of seasurements for measurement systems with feedback NT CHLOROPHYLLS 21 p3644 N68-34541 Influence of porphyrin-type ligands on manganese in [NASA-CR-93143] 08 p1180 N68-17863 Dynamical determination of observation locations using Geos I data Frequency multiplication and division in integrated circuits - design concept for voltage controlled oscillator using voltage variable resistances in positive feedback configuration [UCRL-17853] 11 p1650 N68-21080 23 p4053 N68-36177 Model system for photophosp Extension of Burmester theory to three dimensions, and application to study of finite spatial displacement of four degree of freedom helicopter-type motion 24 p4347 N68-37600 horylation 13 p2014 N68-23596 23 p4034 N68-36118 on and spectral characteristics of Synthetic prod Active Fabry-Perot microwave resonator using new porphines and salt compo plasma impedance elements [BN-551] nts 17 p2843 N68-29278 Geodetic density criterion for gravimetric station Absorption spectra of metal-free and metallic purphyrin due to Zeeman and Stark effects 24 p4210 N68-37423 24 p4323 N68-37635 frequency along leveling lines in mountain region [ACIC-TC-1471] 24 p4253 N68-38168 POSITION ANNIHILATION Surveyor 7 post-landing tracking data analysis, and determining selenocentric location of probe and geocentric locations of tracking stations. 44444 Nos. 18255 Measurement of positron with lithium drifted germanic [USNRDL-TR-67-127] nibilation interactions PORTS IOPENINGS detector 07 p1052 N68-17016 stations 24 p4344 N68-38255 Algorithm for cascade decomposition of lossless 2-Angular correlation of two photon positron annihila-tion radiation in liquid and solid ammonia 09 p1396 N68-19231 07 p0978 N68-16987 ion laser beam for pinpointing specific loca-lunar surface by using detection sensitivity of 7 7 vidicon camera operating in integration POSITION (LOCATION) NT SOLAR POSITION tions on lunar surface by using det Surveyor 7 vidicon camera opera Data analysis methods for lifetimes of positrons in lithium - ammonia solutions and in pure ammonia 10 p1480 N68-19605 Agglomeration factors and ownership of indivisible 24 p4265 N68-38256 economic resources [NASA-CR-91058] POSITION (TITLE) Positron annihilation in condensed media, and slow pion probes for X ray measurements of molecular structure in solids 03 p0430 N68-12525 Linear programming for assignment of personnel to Simulation methods, and instrumentation to study uman reflexes to posture and position changes during AD-6683261 15 p2580 N68-26250 10 p1583 N68-20511 04 p0461 N68-13188 POSITION ERRORS Lifetime spectra of positrons annihilating in organic stulators GIER-ALGOL 3 for reduction of mean and apparent Repeatability and reliability improvements in lane identification for Omega ship navigation system [NRL-MEMO-1803] 02 p0234 N68-11126 11 p1766 N68-20598 04 m0579 N68-13670 Summary data on positron ar [AFOSR-68-0318] nihilation in metals 11 p1774 N68-21533 Geodetic position determination using method of Estimation of velocity and position errors in injection sidance into circular orbit and midcourse trajectories (AFCRL-67-0558) Angular correlation between emitted photon pairs and annihilated positrons in solid and liquid metals and emiconductors 06 p0833 N68-15340 for European space programs (ELDO-M-/66/13) 17 p2911 N68-28702 Supersonic aircraft posi-navigation satellite system [NASA-CR-92984] tion fixing based on Navy Cathode ray tube electron beam deflection error nalysis with application to deflection system design ting electronic computers 13 p2134 N68-23600 07 p1022 N68-16748 lectromagnetic radiative corrections to electron-tron annihilation into neutrino and antineutrino, neutrino scattering by electrons Onbourd range and range rate measurements of lanar beacons for position and lanar orbit estimation [NASA-TM-X-1529] 09 p1423 N68-19064 18 p3050 N68-29939 Errors in position in ESRO 1 and ESRO 2 satellite or-14 p2313 N68-25084 Determination of orbital elemerosition and velocity components [ACIC-TC-1339] ents of a satellite from bits due to tracking measu [ESRO-TM-18/ESTEC/] ent errors 23 p4022 N68-37132 Pion-pion cross section me on-positron annihilation urements during elec-12 p1964 N68-21936 POSITION INDICATORS

NT PLAN POSITION INDICATORS

NT SPACECRAFT POSITION INDICATORS [LAL-1181] 19 p3333 N68-31732 mar theory and ephemeris analyses 13 p2154 N68-24193 Conference on lun (NASA-CR-94618) Positron annihilation in single crystals of yttrium, gadolinium, terbium, dysprosium, holmium, and erbi Ephemeris of National Astronomical Observatory of Culumbia Two-dimensional position sensing semiconductor charged particle detectors [AERE-R-5393] 06 p0846 N68-15660 20 p3569 N68-32874 14 p2342 N68-24489 96 p0846 N68-15660 Charge conjugation noninvariant three photon an-hilation of electron positron states 24 p4313 N68-37717 Maximum Melihood techniques for design of op-mum star trackers that determine position and mag-Position sensitive detectors for charged particles [CEA-BIB-102] 16 p2664 N68-28019 Relaxation effects on defect energy in molecular crystals and Fermi momentum of aluminum 24 p4332 N68-37969 Spatial coordina totographic mea es of noctifucent clouds from arement of cloud details and [NASA-TN-D-4549] 13 p2103 N68-23377 cs of vibrating momentum attitude control 13 p2045 N68-23608 Operational characteristics of exchange device for satellite attit reference star position [NASA-TT-F-11521] 16 p2701 N68-28066 POSITRONIUM In-flight data recording requirements to determine innion performance of military aircraft 17 p2885 N68-29183 Trajectory map, and positio and wind data tables on oon flight over Southern Production of gamma rays from counic annihilation reactions of free electrons, positrons, and positronium [NP-17317] 14 p2340 N68-24829 Hemisphere (NCAR-TN-34, V. 9) 17 p2908 N68-28961

01 p0121 N68-10982

02 p0244 N68-11410

EX POSITRONS Solitary longitudinal waves in cold electron and electron-positron plasmat 706 Vector meson dominant model of electromagnetic steraction of hadrons for kaon decay to pion, positron, and electron (NUP-A-67-15) inge Scattering resonance below positronium thresholds in positron-hydrogen systems [NASA-TM-X-63113] 08 p1211 N68-17238 132 ning 838 for 925 105 icu-187 tion 933 with 203 s of ack 863 118 [ISS-68/20] ing 635 ons 016 ila-231 in 505 611 nic 198 133 airs and 500 132 174 117 lar

169

Total annihilation cross section of electron positron pairs into hadrons at high energies [ITEF-493] 09 p1388 N68-18605 positron-atom scattering 09 p1393 N68-19039 mining variational bounds in po (NASA-TM-X-63130) Experimental data and theoretical calculation of ef-active mass of positrons in metals 10 p1583 N68-20510 Production of gamma rays from cosmic annihilation actions of free electrons, positrons, and positronium NP-17317] 14 p2340 N68-24829 [NP-17317] Positron beam focusing in linear accelerators with lenoid field and quadrupole FODO channel ODO channel 14 p2236 N68-24985 [DESY-68/5] Cross sections for photoprodu electron positron pairs from carb roduction of high energy on 15 p2516 N68-26048 ission during electron-positron collisions 1 15 p2526 N68-26862 Photon emiss [JPRS-45594] Positrons and differential cross sections for pair production and bremsstrahlung [SLAC-PUB-330] 17 p2934 N68-29113 Dirac positron theory effect on Maxwell equations for electromagnetic field in vacuum [NASA-TT-F-11829] 18 p3131 N68-30210 18 p3131 N68-30210 Antiproton-proton annihilation into electron positron pair and antiproton-proton annihilation into two gamma rays for incident antiproton momenta of 1.50 and 2.50 GeV/c 20 p3552 N68-33557 ed experiment on elastic electron-positron 22 p3927 N68-35146 POST-BLAST NUCLEAR RADIATION Graphical information on fallout protection of struc-tures converted to equations for computer engineering [SN-255] 06 p0875 N68-15684 POSTFLIGHT ANALYSIS Postmission supporting data for photographs taken by Lunar Orbiter 5 [NASA-CR-66517] 04 p0579 N68-13760 al performance of auto-iem of weather satellite 08 p1179 N68-17687 Description, and opera Analysis of Lunar Orbiter flight problems [NASA-CR-66583] 12 p1972 N68-22641 Postflight Apollo cos simulation tests [AEDC-TR-67-238] ed module aerodynamic 13 p2154 N68-23294 Performance analysis for Lunar Orbiter 5 mission [NASA-CR-66608] 14 p2351 N68-24923 Saturn AS-204/LM-1 postflight trajectory analysis [NASA-CR-94709] 14 p2351 N68-25177 Methods and analyses systems for multistage las [NASA-CR-95059] es for flight evaluation of control 15 p2498 N68-25930 Scout vehicle ignition harness roblems encountered using con-pening low voltage circuits es postflight analysis -enector separation for 15 p2447 N68-26907 Postflight analysis data on Nimbus I solar array drive [NASA-CR-95482] 17 p2815 N68-28825 Flight performance ever Surveyor spacecraft SC-2 [NASA-TM-X-1616] en of Atlas-Centaur for 20 p3594 N68-33332 FORTRAN 4 orbit deter for estimating space vehicle tracking data for postflight at [NASA-CR-96322] mination program system trajectories from various 20 p3591 N68-33361 Solar constant and spec 990 aircraft at 38000 feet [NASA-TM-X-63324] measured from Convair 21 p3763 N68-34697 iling parachu oyment conditions in simulated planetary em [NASA-TM-X-61215] 21 p3774 N68-34772 analysis of manned six-Description and per pass orbital mission (M NASA-TN-D-4807) 22 p3964 N68-35022

Mission description and po yes of Surveyor 6 spacecraft [NASA-CR-96992] 22 p3965 N68-35254 Postflight analysis of J-2 engine p due to fuel system failure resulting in [NASA-CR-61992] 22 sture shutdo g in engine damage 22 p3955 N68-33862 Flight data analysis and engi gram to determine restart failur in S-4B stage of AS-502 vehicle [NASA-CR-61993] e verification test pro-of J-2 engine installed 22 p3955 N68-35933 Postflight tracking sys-valuation using regression ystem measurement error on analysis for Apollo Saturn [NASA-TM-X-53756] 23 p4024 N68-37384 ching of Black Bran nding rocket for (SRFB-011) 24 p4345 N68-38258 POSTULATES U AXIOMS POSTURE Effect of observer distance and posture on size per-(FTD-HT-67-162) 02 p0171 N68-11423

Classification of postural reflexes in humans and [NASA-TT-F-11616] 14 p2196 N68-24556 Mechanisms of labyrinth and receptors in control of ostural muscles 17 p2822 N68-29138 POTABLE WATER

Provisional potable water standards for aerospace applications [AMRL-TR-66-252] 05 p0614 N68-14365 Microbiological criteria for aerospace potable water AMRL-TR-67-371 09 p1286 N68-18405 Atmospheric and vacuum distillation and chemical oxidation of human urine for recovery of potable water in closed ecological systems [SAM-TR-67-110] 11 p1637 N68-21419 11 p1637 N68-21419 Vacuum distillation pyrolysis water recovery 13 p2006 N68-23808 system using radiois (DOC.-67SD81241 Automatic water recovery system forming closed ecological system for reclaiming potable water from fluid waters is described [GARD-1271] 18 p3014 N68-30107 Manned evaluation of zero gravity humidity contre-system in potable water recovery unit for simulate spacecraft cabins [NASA-CR-66640] 18 p3016 N68-3075 18 p3016 N68-30752

POTASSIUM NT LIQUID POTASSIUM Electric conductivity in argon potassium and helium potassium plasmas with elevated electron temperature in crossed electric and magnetic fields [IPP-3/59] 01 p0120 N68-10892 fields 01 p0120 N68-10892 Corrosion products of oxygen doped tantalum exposed to potassium at 1800 deg F
[NASA-TN-D-4213] 02 p0222 N68-11511 Electron sheath formation in stassium at 2200 deg K and one a n in argon seeded with oz pozss N68-11663

in potassium gas mag-

03 p0400 N68-11928

ilibrium ionization dynamic generator

(Al-67-138)

Atomic absorption cross between 580 and 1000 angstron [TR-1001/9260-01/] section of potassium 03 p0387 N68-12199 Solubilization of centigram and kilogram plant samples of some elements and isotopes
[UCLA-12-613] 03 p0313 N68-12330 [UCLA-12-613] O3 90313 N65-12330
Optical pumping of xenon flash lamps, performance
prediction for pumped continuous wave laser, and
potassium-mercury lamp for pumping neodymium yirium-aluminum garnet laser
[ECOM-02097-5] 03 p0671 N68-14774 03 p0671 N68-14774 Critical thermodynamic properties of sodium, potas-aium, lithium, and rubidium [FEI-52] 05 p0757 N68-14812 05 p0757 N68-14812 Two stage potassium vapor turbine - materials sup-port of performance and endurance tests [NASA-CR-925] 07 p0938 N68-16351

tures of 1400 to 1600 deg F 07 p0938 N68-16439 Two stage turbine s vapor at temperatures [NASA-CR-922] Mechanical design and development sest program for two-stage potsesium vapor Rankine cycle turbine [NASA-CR-923] 07 p0940 N68-17075 Optical model of resonance cattering of alpha particles on e phenomena in elast n notassium and calciu [INP-577/PL] 10 p1570 N68-20279

Neutron activation analysis of sodiam, lithium, and otassium in compact fast reactors and its effect on shielding [NASA-TM-X-1512] 10 p1556 N68-20355 na ray production cross ections for potass (GA-7829, PT. 5) 11 p1750 N68-20725 Neutron and gammar andium, chloring, m [GA-7829, PT. 1] 11 p1752 N68-20939 Partial scattering cross set thium 7, potassium, and ce eon, argon, krypton, and ar ns for thermal beams of a attenuated in helium. 13 p2116 N68-23488 Thermodynamics of system potamium/mercury malgam as function of temperature and smalgam CU-2660-34) 22170 N68-23812 Anomalous characteristics of discharges in ther-ionic diodes containing mercury and potantium 14 p2321 N68-24449 Reaction kinetics of lithium, potantium, and cesium with liquid ammonia at room temperature mia at room te 14 p2212 N68-24691 Fluidic temperature sensor [SAN-639-7] 14 p2255 N68-24713 Thermodynamic properties of sodium and potassium (UCID-152711 14 p2371 N68-24795 ts of potassium to 2170 Vapor pressure m deg R [NASA-TN-D-4535] 14 p2372 N68-25122 bility tests of niobi-Turbogenerator mat um and tantalum alloys [NASA-TM-X-59596] ng potamium 14 p2272 N68-25150 Heat transfer to boili [NASA-TM-X-59568] ium turbogenerator 14 p2193 N68-25234 n cross sections for Electron spin exchange contamium and cesium and op cal pumping 15 p2514 N68-25911 Heat transfer in film boiling of pota tal plate ium on horizon-15 p2575 N68-26325 Method to determine potassium-argon of iron 15 p2420 N68-26936 Over-ionization of pota m and sodium in late-type (NASA-TM-X-61134) 16 p2767 N68-27703 High temperature parallethermal conductivity of pote [COO-1352-28] el plate cell for measuring 16 p2665 N68-28185 crystal potassium mea-f helicon standing wave 17 p2958 N68-28815 Heat transfer during film or vapor on horizontal plate in pr of noncondensible gas [DSR-70008-52] film condensation of potsess ite in presence of small quar 17 p2988 N68-29360 Ultrasonic attenuation at low temperature in potas om and gold 19 p3347 N68-30922 Line reversal method used to measure electron tem-perature in weakly ionized argon-potasium plasma [IPP-3/69] 20 p3553 N68-32369 Utilization of nonuniform axial heat flux distribution nd four heat transfer regions in design procedure for dvanced rankine cycle space power system potassium NASA-TM-X-61162] 20 p3403 N68-33270 Electric dipole poli rubidium, and cessum [COO-1112-164] rs of sodium, potassium, 20 p3539 N68-33317 Thermal accommodation of eon, argon, krypton, and se coefficients of helium, senon on potamium and 20 p3539 N68-33421 and nuclear properties Thermodynamic, transpo of saturated liquid and vapor [NASA-CR-96741] 21 p3794 N68-34076 21 p3751 N68-34524 AEDC-TR-68-1161 a, lithium, and Twilight airglow or 22 p3866 N68-35011

sa drift waves in iono-

23 p4142 N68-36937

Cosium or potamium sphere and laboratory [ESRQ-SN-82/ESRIN/]

POTASSIUM ALLOYS

Experimental measurements of total vapor pressure of potassium analgams and electromotive force of potamium analgam concentration cells as function of temperature and analgam composition m composition 22 p3916 N68-35164

POTASSIUM BROMIDES

F center formation at 78 deg K in potassium bromide aring exposure to monochromatic X ray energies ound bromine K edge PRIC-1041 07 n1071 N68-17159 around bromine [PRNC-106] 07 p1071 N68-17159 on in potamium iodide and Far infrared absorption in potamium iodide and potamium bromide mixed crystals [NYO-2391-64] 07 p1038 N68-17186

Decay time, relative quantum yield, and emission spectra of activator luminescence in petassium bromide-thallium crystals

08 p1227 N68-18002 bromide crystals as optical data storage media [NASA-CR-86075] 18 p3041 N68-30275

Temperature deper of F center absorption in X irradiated p [AD-669494] im bromides 18 p3028 N68-30467 Electron paramagnetic re chlorides and potassium brom resonance of potassium omides doped single crystals

at low temperatur (NRC-TT-1311) 19 p3355 N68-31785

POTASSIUM CHLORIDES

Uranium chloride activity in eutectic lithium hloride-potassium chloride melt chloride-potassiu (LA-TR-67-76) 01 p0025 N68-10785 Stark effect of R center in pot (NYO-2150-34)

nsuum chioride 07 p1040 N68-16261 Effect of ultraviolet and X radiat lated emission from colored sodium sium chloride crystals

08 p1226 N68-17994 Ultraviolet light coloring of natural and artificial odium chloride and potassium chloride crystals hloride crystals 08 p1226 N68-17995

Temperature and spectrum dependencies of time of scintillation decay and quantum yield in intracenter lu-minescence of potassium chloride- lead phosphor

08 p1227 N68-18000 n, and luminescence spectra um phosphor crystals 08 p1227 N68-18001

ractions of acoustic and infrared f phonon electric field on vibronic e-dipole interaction in KCI/OH 10 p1379 N68-20096 Anharmonic into phonons - effects of phonon ele-spectra and on lattice-dipole inte

Optical and electron paramagnetic resonance of sta-dies of iodine chloride ion V-K center in potantium chloride iodine crystals [REPT-901] 11 p1775 N68-21689 11 p1775 N68-21689 Absorption and luminescent excitation spectra mea-arements for F and M centers in potassium chloride ad sodium fluoride crystals

12 p1953 N68-22092

Potential energy bands in potassium chlorides, change potentials in gadolinium, and crystalline free lectron exchange potential energy 12 p1956 N68-22544

Optical absorption and photochemical behavior of centers found in polycrystalline potassium chloride abidified from sulfur containing meht (NP-TR-1614) 12 p1841 N68-22938 ning melt 12 p1841 N68-22958

Acoustic attenuation in KCl and KCl containing Li in impurities in ultrasonic range (YO-2471-31) 13 µ2130 N68-23059 NYO-2471-311

Thermodynamic properties of solid solutions in sodi-um chloride-potamium chloride-cadmium chloride 13 p2021 N68-24072

Thermal conductivity measurements on potassium sloride single crystals after irradiation and tempera-(COO-1629-3) 14 p2329 N68-24676

Photolytic measurements on fracture surface energy after irras [COO-1052-9] on potamium chloride 14 p2330 N68-24678

Color center and V band formation and growth in al-kali halides and potassium chloride by ultraviolet ir-

15 p2412 N68-26108 ptical absorption coefficients and half-widths of F M band color centers of potassium chloride [M68-21-1] 15 p2538 N68-26300

Ultrasonic velocity and uttenuation in lithium and carbo-nitrogen doped potassium chloride
15 p2539 N68-26345

Molecular beam electric resonance spectra of lithi-um and sodium fluoride and potassium chloride 16 p2607 N68-27172

ed darkness and produc-17 p2956 N68-28600

Low temperature dielectric properties of KCI doped with Li and CN imporities 19 p3352 N68-31174

Electron paramagnetis slorides and potassium b tic resonance of potassium bromides doped single crystals at low temperatur (NRC-TT-1311) 19 p3355 N68-31785

al recombination, and and anhydrous crystals sodium hexachlorides Reduction reactions, chradiation effects in hydra [LFEN-7 /GAMMA/] 19 p3234 N68-32097

ct in sodium chloride, potani-fluoride ionic crystals 20 p3562 N68-32311 Photomechanical effe chloride, and lithium

rmine minimum energy ling lithium impurity in

22 p3948 N68-35007 al conversion of de crystals 22 p3825 N68-35410 color centers in potassii (FTD-MT-24-217-67)

Crystal field effects on F center wave functions in KCl, CrF, and MgO [COO-1197-31] 24 p4331 N68-37865

POTASSIUM CHROMATES

Potentiometric titration of urunium by potassium bichromate in phosphoric acid [CEA-TR-X-630] 14 p2215 N68-24839 14 p2215 N68-24839

POTASSIUM COMPOUNDS

Chemical potentials and activity coefficients of potamium sulfate-copper sulfate-water and ammonium sulfate-copper sulfate-water binary solid salt solutions [PA-TT-61] 01 p0027 N68-11002

Thermodynamic study of potas m chloride water system m chloride rubic [PA-TT-62] 02 p0281 N68-11415 Use of xenon diffuoride for synthesis of labeled

ANL-TRANS-5381 07 p0959 N68-16926

Electron paramagnetic resonance study of triplet center in ultraviolet irradiated potassium azide 17 p2953 N68-28458 Chemical reactions of solid potassium permaganates sposed to flash photolysis and flash heating 19 p3220 N68-30895

ressure effects on thermal decomposition of potas-m chlorate and mercuric oxide and synthesis of lithi-superoxide compounds 19 p3221 NAS.3092A

19 p3221 N68-30924 Dielectric and structural is potamium and sodium stront possessing defect structures [AD-671905] tigations of sodiu 20 p3581 N68-33033

ce of atomic displacements in 23 p4148 N68-36129

POTASSIUM HYDROXIDES

Zincate diffusivity in alk as function of potassium i e electrolyte determine oxide concentration an

[NASA-CR-92599] 06 p0769 N68-15716 Electrochemical oxida n of zinc, thermal decom-solubility determinations of droxides silver oxides in potas [NASA-CR-92546]

06 p0770 N68-15856 of silver electrode in Cyclic volt room temperature 13 p2019 N68-23853 TR-71

Electrochemical exidation of zinc and cadmium in potassium hydroxide - thermal decomposition, and deposition of silver exide on zinc anodes [NASA-CR-97353] 24 p4216 N68-37812 POTASSIUM IODIDES

eitive halogen reaction of benzotrichloride and Morotolysme with potassium indide in aqueou

04 p0468 N68-13524

04 p0469 N68-13527 um lodide and 07 p1038 N68-17186 Intracenter photoluminescence of potassium iodide-allium crystals

08 p1227 N68-18003 Activator luminescence r minescence centers in pote crystals mechanisms and lu-ptassium iodide-thallium

08 p1228 N68-18004 Intracenter luminescence of um crystals in excitoe absorption um iodide-thallice of pota 08 p1228 N68-18005

F center formation by optical absorption of ul-aviolet light in potassium iodide 10 p1576 N68-19850

ymmetry parameters from chlorine nuclear rupole resonance spectra of organic compounds, mpurity colloid in potassium iodide 10 p1493 N68-20513

Nucleation mechanism and dissolution theory of su-ercooled potassium and silver iodide mixed smoke

NAD-CR-RDTR-112] 18 p3023 N68-30170 Preparation of KI/TV in operating scintillator for samma ray spectrometry [NP-17352] 18 p3075 N68-30328

POTASSIUM ISOTOPES

Atomic energy levels of potassium 37 established by sclear reactions 15 p2516 N68-26063

Experimental and theoretical study of resonances in K-39/p_gamma/Ca-40 reaction [NP-17384] 15 p2521 N68-26525

Electron paramagnetic resonance technique for measuring spin-exchange cross sections of Cs 133, Rb 87, Rb 85, K 39, and Na 23 [REPT.-04941-4-T] 19 p3330 N68-31542

POTASSIUM NITRATES

Permeation of isolated anodic thin barrier-type zir-conium oxide films by potassium nitrate electrolyte solution

Decomposition kinetics of phosphorite in solution of RTS-4395]

POTASSIUM OXIDES

Recovery of potanium tantalate and potani monoxide to demonstrate procedure for isolation recovery of alkali-metal reaction products in unc

[NASA-TN-D-4310] 05 p0679 N68-14888 Raman spectra of lead titanium trioxide and solid slutions of sodium tantalum trioxide-potassium tan-slum trioxide and potassium niobium trioxide NASA-CR-96362] 20 p3575 N68-33454

talum trioxide and po [NASA-CR-96362] POTASSIUM PEROXIDES

diate and final products produced by reac-tassium peroxide with carbon dioxide T-F-11478] 14 p2215 N68-24933 tion of potassium pero [NASA-TT-F-11478] Portable emergency oxygen generator based on reac-tion of alkali peroxides with water vapor for self-rescue

from carbon monoxide [NASA-TT-F-11701] 17 p2828 N68-28337 POTASSIUM PHOSPHATES

Nuclear magnetic resonar ferroelectric rochelle salt [NASA-CR-94755] nce of domain switching in 14 p2331 N68-24995 Electrical conduction and ydrophosphate systems defects in potassium

14 p2332 N68-25124 ectric transition in

atron scattering near ferroe crystal monobasic potassium um phosphate 15 p2533 N68-25738 single crystal m [AECL-3084] Continuous wave voltage tanable optical parametric scillator design with monobasic potassium phosphate (UTEC-MD-68-035)

- 15 p2478 N68-26648 Thermal dehydration of dihydrogenphosphates of lithium, sodium, potassium, and ammoeium ions [NASA-TT-F-11745] 18 p3024 N68-30188

Single crystals of beta-TA205 grown from mothen potassium phosphase [TR-0158/3250-10/-15] 23 p4082 N68-36404

POTASSIUM 40

Measurement of high energy gamma radiation mitted after capture of thermal neutrons by odd-odd otassium 40, scandium 46, vanadium 52, and cobalt 60 nuclei [ZFK-PHA-24] 01 p0108 N68-10481

PO

POTATOES

Feasibility studies for potato preserving by gamma (JEN-184-SI/I-17, PT. 5) 11 p1638 N68-20600 DEX

dide-

8003

hu-

Hium

8004 halli-

8005

f ul-

9850

0513

of su-

0170

r for

0328

ed by

6063

es in

6525

for

1542

e zir-olyte

2062

on of

2509

and

4888

3454

reac-

4933

reac-

8337

ng in

4995

5124

en in

5738

etric

6648

s of

0188

ohen

6404

l-odd obalt

0481

mm

0600

[JEN-189-SI/I-18] es using gamma irradiation 23 p4000 N68-36915 POTENTIAL ENERGY
NT BIOSLECTRIC POTENTIAL
NT CONTACT POTENTIAL
NT COULDMR POTENTIAL
NT ELECTRIC POTENTIAL
NT GEOPOTENTIAL HERGHT
NT IONIZATION POTENTIAL
NT SPIKE POTENTIALS
NT SPIKE POTENTIALS
NT SPIKE POTENTIALS Proportional counter and ionization counter and ionization energy in gases 01 p0100 N68-10913 Zero energy reflection coefficients of electrons at polycrystalline silver surface determined by patches of different work functions [AFCRL-67-0378] 01 p0127 N68-10962 Energy and power relations in semiconductor materials with drifting majority carriers [AE-4, PT. 2] 02 p0258 N68-11335 Computer program for de nar gravity potential expans 03 p0415 N68-12309 mmaries on rubidium and cesium energy bands, and and tin group representations, electron gas se potential, particle interacting energies, and ce potential, r maser proces (OPR-66) 04 p0562 N68-13810 alating attractive interaction potes n-litheum atoms in ground states 07 p1051 N68-16842 m model intermolecular nental properties 07 pl053 N68-17096 Statistical correlation bet potential functions, and exp [NASA-CR-93126] Hard shell repulsion helium isotope energy po [INR-831/VII/PL] 09 p1389 N68-18622 theory and model potentials es in low density fluids 10 p1571 N68-20524 Statistical mechanical ti for simple linear molecules 11 p1752 N68-20851 Three body model for dynamic strength of lambda lambda hypernucleus in carbon 14. [IC-67-29] 12 p1923 N68-22199 exchange potentials and Born approximation 13 p2112 N68-23073 Potential and kinetic energy transfer of synoptic scale systems 14 p2284 N68-25315 Modified optical pote electron-neon scattering [NASA-CR-85630] aggreech to low energy 16 p2722 N68-27614 ong range petentials and 17 p2924 N68-28467 Rotational energy of three-p (ITF-67-49) 17 p2941 N68-29422 d lattice vibrational 18 p3184 N68-29799 Jacobi Game quadratu Klein potenial energy for d tion of wave equations resi [ORNL-TM-2167] ulations of Rydberg molecules, and solufor bound states 18 p3025 N68-30232 20 p3428 N68-32916 is for calculating 21 p3753 N68-33883 INASA-CR-968781

22 p3873 N68-34949

23 p4136 N68-37351

24 p4326 N68-38267

04 p0429 N68-13349

al in electron and ion flow

Analog computation of potential fields using restance networks, digital computation of potential

stial for nucleon

Velocity dependent raucieon scattering analyse

(FTD-HT-67-457)

POTENTIAL FIELDS

06 p0827 N68-15607 Stationary state of p potential fields [IPPCZ-66] in m 07 p1059 N68-16456 Method of solving wave o tion with additive 12 p1927 N68-22410 Computer programs and numerical solution of homes-Fermi equation for positive valence dif-NRC-ME-21] 15 p2517 N68-26155 Two body potential in three parts for breaking [IPNO/138-121] 16 p2725 N68-27976 m and classical effects of real space of elementary 17 p2929 N68-28547 uations and fields in turbu-is of air jet using hot wire 18 p3063 N68-30282 nents in topside iono-nealyzers 22 p3957 N68-35999 sphere using retarding po INASA-TM-X-633581 Helicity scuttering of pa [JINR-P2-3848] in potential fields 23 p4125 N68-36947 Crystal field effer KCI, CaF, and MgO (COQ-1197-31) center wave functions in 24 p4331 N68-37865 NT EQUIPOTENTIALS Tundem cascade solved by replacing second blade by singularities and conformal transformation of first blade by Howell method - computer program. (ARC-CP-971] 06 p0029 N48-15799 Steady transonic potential flow obtained by hodo-raph method applied to non lifting symmetrical airful NLR-TR-T-136] 07 p0934 N68-16603 flow around quasi-elliptical air-on integral transform methods 07 p0934 N68-16609 Transonic potential profiles obtaine (NLR-TR-T-172) Symmetrical nonlifting quasielliptical airfoli sections in steady subcritical and critical potential flows [NLR-TR-68016-U] 24 p4193 N68-37811 POTENTIAL GRADIENTS Rais of electrochemical gradient in determining potamium fluxes in frog striated muscles [NASA-CR-90061] 01 p0010 N68-10232 Matrix analysis of gradient perturbations in alternating synchrotron (IINL-11818) 04 p0551 N68-13775 Determining nickel electro potential after switching off p [NASA-TT-F-11672] de capacity from drop in olarizing current 13 p1994 N68-23415 Packaging three dimensional objects in ophers and ptimization of fit and position using gradient (SC-CR-67-2863) 16 p2672 N68-28105 POTENTIAL THEORY Matria elements of Hamada-Johnston potential for harmonic oscillator wave functions
[JINR-E4-3445] 05 p0713 N68-14485 livistic sum rules by class ic scattering of local 09 p1392 N68-18970 tary phase method applied to potential scatter 09 p1399 N68-19471 tical model of two-state system interacting on, neutron scattering measurements, and estial method of obtaining phonon disper-10 p1571 N68-20512 il theory for analyzing 11 p1791 N68-20625 sary and dyna 11 p1751 N68-20834 11 p1727 N68-20904 ayer, and applications to place equation 11 p1728 N68-20915

Determining first derivatives of disturbing put by Greens fundamental formula (REPT.-90) 13 p2062 N68-23920 15 p2568 N68-26185 Quantum effect of e [AFCRL-68-0127] 15 p2518 N60-26318 107-67-221 16 p2731 N88-28175 man-Enthog theory ar rry diffusion to find it ters of low density gas of 17 p2870 N68-28341 os to Born-Oppenheimer approximati separations and interatomic forces a 17 p2925 N68-28485 ring wave functions and cross sections found in R-matrix theory to potential scattering to study nuclear reactions 17 p2929 N68-28672 1 Asymptotic behavior for number of bound states of fiven potential in limit of large coupling using Schroed-REPT.-68/161 18 p3130 N68-29963 od applied to solution of three problems 19 p3381 N68-31806 Direct potential meth dimensional elastostatics [NASA-CR-66673] ellipsoidal planet [NASA-CR-96145] 19 p3369 N68-32024 pplied to pattern recognition and syst 20 p3453 N68-32751 POTENTIOMETERS. Performance test results on wire wound potentione-ters for Saturn S-2 stage and Saturn S-4B stage thrust (MR-1218) 12 p1871 N68-22089 Electrochemistry of iron over wide ranges of pH in solutions of sodium salts [ARL/MET-49] 19 p3230 N68-3185) POTENTIOMETERS [INSTRUMENTS] Performance test result Saturn S-IC thrust vector of [MR-1182] 08 p1138 N68-17262 ol servenetusior 12 p1871 N68-22047 Performance test results Saturn S-IC thrust vector cont [MR-1183] 12 p1871 N68-22048 Performance, random vibration, and temperature ats of alternate potentiometer sources for Saturn I B 12 p1874 N68-22464 tests of alternate poten 12 p1874 N68-22465 Test program for evaluating alternate potention ources for Saturn S-IC thrust vector control ser [MR-1196] 12 p1875 N68-22469 [MR-1196]
POTENTIOMETERS (RESISTORS)
Mathematical study of operating conditions of photopotentiometer of transverse conductivity
23 p4022 Nist-37302 POTENTIOMETRIC ANALYSIS 01 p0026 N68-10879 lew including gas analy-try, coulometry, cham-sicrochemical analysis 05 p0618 N68-14054 polarography, potentione microscopy, and classical a BS-TN-425] n of free acid and ple 07 p0956 N68-16430 in this layers of solution.

Anhydrous titration method for determining fatty acid adsorption on mineral surfaces
13 p2017 N68-23821 Potentiometric titration of uranium by potassium bichromate in phosphoric acid [CEA-TR-X-630] 14 p2215 N68-24839 EA-TREA-ONE;
Amperometric tilration for uranium determinance, ing ferrous sulfate as reductant.

15 p2405 N68-25808 uble layer charging as chronopotentiometry ad adsorption effects on 16 p2610 N68-27807 Temperature dependence of conduction electron scattering in gold and platinum alloy solutes using potentiometric analysis 17 p2953 N68-28435 Measurement of plutonium by polarized electrode potentiometric titration method [PG-832/W/] 18 p3031 N68-30794 POTENTIOMETRY POTENTIOMETRIC ANALYSIS POTTING COMPOUNDS Downdraft clean room for cleaning and potting of mechanical and electrical components and various plantics systems 17 p2869 N68-29335 POWDER [PARTICLES]
NT FINES
NT METAL POWDER
NT POWDERED ALUMINUM pressure density depen-am dioxide powders 01 p0071 N68-10959 Mathematical evaluation of presence for fragile, sintered uranium of Eliminating spurious thermoluminescence and tribothermoluminescence in lithium fluoride dosimetry 04 p0561 N68-13699 Combination hopper and fluidizing trough for con-trol of powder flow 08 p1182 N68-17315 Design criteria for circular variable filter spectrome-ter optical, electronic, and data handling systems for realizing particle size effects to infrared spectra [NASA-CR-93773] 10 p1531 N68-20277 Plastic powder coating of aluminum by fluidized bed and electrostatic spray techniques [PLASTEC-18] 11 p1653 N68-21332 Fine mineral particles in nature and technology, dust measuring techniques, morphology of metal oxides and pulverulent polymens, and industrial experiences with [TT-67-51408/5] 12 p1830 N68-23025 Steady state combustion model for calculating powder burning stability 16 p2794 N68-27580 Integral equations for nonstationary combustion of thin powder plates 16 p2794 N68-27605 Grinding aids for producing nickel-chromium alloys with fine particles [AWRE-O-39/68] 16 p2684 N68-28164 Heat transfer inside nuclear fuel of compacted urani-m oxide and uranium oxide-plutonium oxide powders EURAEC-1998] 17 p2986 N68-28971 um oxide and uranium oxide-plu [EURAEC-1998] e spectra of powdered solids
1) 18 p3026 N68-30353 Infrared absorption [NASA-TT-F-11798] Relations between powder properties, sintering treatments, and densification and microstructure development in uranium oxide pellets 18 p3117 N68-30474 te thermophysical model of hunar soil 29] 20 p3588 N68-33023 Wear inhibitor properties of pan dry film lubricant in friction to [FTD-HT-23-502-67] erties of polymer powders used friction tests of steel halls 22 p3892 N68-35932 POWDER METALLURGY Microstructure and chemis compacts of tantalum carbide [NASA-CR-90036] try of hot pressed powder 01 p0067 N68-10078 Production techniques for dispersion strengthened (EUR-3497.D) 01 p0074 N68-10146 Preparation of institual o ds of transition Preparation of institual compounds of transition metals for hydrogen oxygen fuel cell cathodes [NASA-CR-89953] 01 p0005 N68-10251 Creep properties of molybde num made by arc melting or by powder me [TRG-1550/C/X/] 02 p0220 N68-11135 Friction index and pressing characteristics of copper powder at various stages of oxidation and screened fractions of stanless steel powders (LA-3739) 05 p0672 N68-14022

Procurement specifications to powders developed through morphological structures [LA-3653] 05 p0672 N68-14040 Pressure dependence of tensile stress-strain behavior of recrystallized powder metallurgy tungsten at en-vironmental pressures of 11 kilobars vironmental pressure [NASA-CR-92592] 06 p0856 N68-15715 Heat transfer, and dielectric constants measurements e powders [NASA-CR-61495] 06 p0895 N68-15849 Carbon sources effects on niobium carbides, and determination of high temperature flexural strength, flexural creep, and thermal expansion up to 2550 deg C [NASA-CR-92723] 07 p1007 N68-16267 Hot press processing of niobium, tin, and carbon powders to determine effects of microstructure on su-perconductive properties of niobium stannide in niobi-um carbide matrices. [UCRL-17826] 08 p1222 N68-17285 ping of precipita rdened stainless steels by INASA-SP-50861 09 p1348 N68-19307 Compacting of metal powders [UCRL-TRANS-10186] 11 p1707 N68-21349 Powdered ura ide compounds for use as 12 p1904 N68-22327 Hydrogen release in ball milling of high purity, coarse chromium powder in water [NASA-TN-D-4569] 13 p2076 N68-23900 Powder metallurgical techniques for preparing or posites of carbon fibers in metals to increase wear [RAE-TR-67265] 13 p2077 N68-23983 U.S.S.R. powder metallurgy and cermet manufacture or atomic technology for atomic tech [JPRS-45339] 13 p2085 N68-24167 Materials science and metallurgy - annotated bibliog-[JPRS-44636] 14 p2270 N68-24749 rgy and rolling of metal powders 15 p2475 N68-26803 Powder metallu [FTD-MT-67-67] Creep, ductility, po nd fractures of rhenium alloy produced by arc melti [USBM-RC-1274] ng and power metallurgy 16 p2684 N68-28106 Powder particle size effects on physical behavior of pressed forged beryllium [AMMRC-TR-68-08] 17 p2902 N68-29267 Niobium-tin alloy phases after heat treatment for tetallographic hardness and structural rentgenography a powder metallurgy analysis in powder metallurgy analy [INR-871/XIV/PS] 17 n2902 N68-29435 Pressure, temperature, and time parameter effects on press and sintering density of metal powder [NIJS-R-526] 20 p3487 N68-32718 Powder metallurgy compaction method utilizing iso-tatic hot pressing at high temperatures and pressures an autoclave in an autock (KFK-708) 20 n3491 N68-33318 Sintered and pressed powder materials for electrical ngineering and manufacturing 20 p3453 N68-33565 Low frequency vibration for compacting metallic and nonmetallic powders, and advantages of explosive forming techniques [FTD-HT-67-127] 21 p3696 N68-33851 Low frequency vibration for consolidation of pow-ders of hard alloys 21 p3696 N68-33852 Isostatic hot pressing - new powder metallurgy com-EURFNR-473] "21 p3699 N68-34599 Fully dense /U, Ta/C alloy fabrication by powder metallurgy techn [BMI-1840] 21 p3706 N68-34654 Friction characteristics iron-phosphorus powder metallurgy alloys [FTD-MT-24-238-67] 22 p3891 N68-35444 Holmium zinc intermet owder metallurgy techni c sample preparation using NYO-3560-8] 22 p3885 N68-35859 Metallographic technique powder pressed beryllium m [RFP-1 [24] e for rolled ingut sheet and 22 p3885 N68-35911 Microplastic properties metallurgical molybdenum of arc-cast and powder

POWDERED ALUMINUM

[NASA-TM-X-52359]

Dumping in two dimer

Detonation of aium POWDERED METALS U METAL POWDER U FLUX DENSITY POWER EFFICIENCY NASA-TN-D-43021 CEA-R-33271 ECOM-28101 [NASA-CR-95704] [AFCRL-68-0231] Analog computer MAC-1/ and its amplifier, power supply, and control system [EE-TRANS-1717] 20 p3442 N68-32454 24 p4266 N68-37516 ala for determining cost-gain rela-Approximate formula for mahip in large parabolic a al hydrogen-oxygen con 02 p0261 N68-11044

Aluminum effect on chemical stability of industrial explosives 02 p0177 N68-11460 roperties of soft binder Dynamic mechanical pr materials with dispersed sm [AROD-3263-16-E] uminum particles 02 p0276 N68-11540 Aluminum oxide dihydrate preparation from pow-dered aluminum and water in prescence of sodium hydroxide 06 p0795 N68-15966 der oxygen mixtures 14 p2370 N68-24692 ressure dependence of nuclear spin-lattice and spin relaxation times in aluminum powder 15 p2535 N68-25950 POWER CONDITIONING Electrical stress analysis of microthruster power con-[NASA-TM-X-1686] 24 p4235 N68-37944 POWER CONVERSION
U ELECTRIC GENERATORS WER EFFECTION
Diffusion control and power thrust efficiency
brouded propellers operated at hovering velocity
04 p0435 N68-13347 Single helix, focused traveling wave tube for spacecraft telemetry systems and capable of delivering 25 watts power at 2.3 GHz at overall efficiency of 42.2 NASA-CR-66522] 05 p0635 N68-14202 Reduction of apparent power requirement for phase introlled parasitically loaded turboulternator by mul-ple parasitic loads 07 p0941 N68-17110 Microwave or laser energy for wireless transfer of power from manned earth orbiting station to unmanned astronomical substations [NASA-TM-X-33701] 10 p1460 N68-20045 Estimation of CC5 chamber efficiency to calculate over transfer function for boiling water reactor CEA-R-3327] [4 p2293 N68-25164 Turbine characteristic effects on pulsating gas flow 16 p2750 N68-27107 Axial power tailoring to obtain constant fuel-center-line temperature in nuclear reactor [NASA-TN-D-4658] 16 p2711 N68-28304 Partial admission operation effects on performance of single stage axial flow turbine [NASA-TN-D-4700] 18 p3005 N68-30241 Power output analysis for improved synchronous in-20 p3450 N68-32563 Comparative weight and power characteristics of life support systems for spacecraft crews
[JPRS-46173] 20 p3411 N68-32901 Static characteristics, power gain, noise figure, input dmittance, cross modulation, and radio frequency over output tests of nuvistor triode 01 p0037 N68-10517 Electron wave interaction istributed emission amplific seary for crossed field 15 p2439 N68-25996 iodic antennas coupled tivity 16 p2624 N68-27732 se power spectra, and cir-transistorized current-feed-17 p2884 N68-28925 Electron beam - electron etic wave interactions 17 p2865 N68-29024 optimization and array delobe and power gai besis for antenna arrays 18 p3032 N68-29571 Applying extraterrestrial radio sources to antenna in, efficiency, and radiation patterns for radio as-

PO

10

19 p3237 N68-31256

20 p3442 N68-32454

POWER LIMITED SPACECRAFT

Optimum motion in gravitational field of variable mass body with limited power engine, energy accumulator, and limited exhaust velocity engine (FTD-HT-67-324) 23 p4165 N68-36218 Trajectory optimization problems in mechanics of low thrust propulsion for solar sail and power limited space flights

24 p4302 N68-37806

POWER LINES

Linear polyethylenes for communication and power 01 p0080 N68-10075 Harness systems approach to flat conductor cable [AD-660956] 03 p0328 N68-12092 od for nondestructive testing

Ultrasonic pulse method high tension insulators (AERE-TRANS-1077) 05 p0668 N68-14811 cy magnetic fields near cur-Predicting low frequency rent-carrying twisted-pair ca [USL-848]

09 pl381 N68-18474 Theory and experiments on transient wave expansion n various transmission line arrangements to determine ransient voltage form in short-line faults ne taums 09 p1321 N68-19469

Voltage surges induced on overhead lines by lightn-ing strokes 12 p1851 N68-22032

Electrogeometric analysis of shielding against lightn-ing and of determining transmission line performance 21 p3731 N68-34040

Transient voltages along power lines - sources, effects on measuring circuits and equipment, and methods for minimizing 22 p3915 N68-35126

Property data of magnetic materials for use in high temperature liquid alkali-metal space power systems [NASA-SP-3043] 08 pl 185 N68-17624

Design of fuel cells, hydrogen generator, power plant for indirect hydrocarbon-air systems [PWA-3211] 11 p1627 N68-20884

Parametric analysis and system optimization of tur-omachinery performance in reactor heated Brayton cycle space power pl [NASA-CR-89172] 15 p2505 N68-26838

Low speed wind tunnel performant intake and characteristics actories project F2 erformance tests for power tics of government aircraft factories project F2 [ARL/AERO-289] 19 p3199 N68-31807

POWER REACTORS

d

d

3

4

Epithermal-to-thermal uranius rate in Agesta power reactor fuel [AE-299] m 238 neutron cuptu 02 p0238 N68-11497 Preoperational nonnuclear performance of sodium eactor experiment facility for power expansion pro-

NAA-SR-12408] Q3 pQ372 N68-12212

Nuclear power reactor operation and fuels prepara-tion and testing [EUR-3380.F] 03 p0375 N68-12475

Possible European production of polonium 210 using bismuth irradiation in graphite-gas power reactor [ELDO/SP/67/17] 04 p0540 N68-13648

Bethe-Tait analysis applied to meltdown accident in at coramic-fueled power reactor 05 p0696 N68-14740

Critical assembly for in-core checking of neutron de-tector for power reactor [BAW-3647-6] 11 p1697 N68-21075

Stability of zenon oscillations in connection with physical calculations of active zone in heavy water gas cooled natural uranium power reactor [UJV-1860] 13 p2104 N68-23066

Performance evaluation of high temperature filter 13 p2106 N68-23300

Channa thermometers and neutron counters used as channel power detectors [HPR-73]

Thermal power calibration of Enrico Fermi atomic APDA-NTS-16] 16 p2704 N68-27966

Progress reports on mathematical research, statistical analysis, computer programming, stochastic processes, power reactors and suclear fuels, genetics, and radiation dosages 17, 2007 NAS. 20530 [ORNL-4236] 17 n2907 N68-29530

Radial vane steam sep [GEAP-5636] 24 p4295 N68-37822

NT MACLAURIN SERIES NT TAYLOR SERIES

Power series representation of partial derivatives required in orbit determination [NASA-CR-92681] 07 p1013 N68-16165

Power series inverses of universal form of Kepler [NASA-TM-X-63090] 07 p1078 N68-16271

Optimized computation integration, applied to the (NASA-TM-X-63148) recursive power series 10 p1547 N68-20225 Extensions of Craig ge tion of property L 12 p1898 N68-22187

Orbit determination treated as boundary value oblem and solved by power series expansion and cursive functions BWF-FB-W-68-08] 13 p2153 N68-24119 13 p2153 N68-24119

ation of zero roots of power se-d polynomials from transforma-circle and annulus of conver-14 p2282 N68-25616

Computer program for power series expansion of variables in system of analytic functions [MRC-TSR-830] 15 p2493 N68-26419

Functional polynomials and seochastic approxima-tion procedure for identification of nonlinear systems 18 p3102 N68-29935

d representation of analytic func (RTS-3987) 20 p3513 N68-32235

Recursion formulas for power series inversions df (NASA-TM-X-63341) 23 p4168 N68-36514

POWER SPECTRA

Generalized covariances and power spectra for discrete time series
[NSRDC-2413] 01 p0084 N68-10534 Profiles and power spectra of some off-runway land-

INRC-96351 02 p0195 N68-11755 Classical driving field applied to study effect on spec-trum of apontaneous emission from simple physical

(TRG-057-1) 03 p0382 N68-11975 Computer programs for analysis of magnetotelluric

[RU-67001] 04 p0498, N68-12982 urements of water sur-ated waves 04 p0493 N68-13109

and power spectral density a of gust loads on aircraft 05 p0605 N68-14502 Atmospheric tu techniques for dete [SEG-TR-67-28]

Noise-power-ratio measurements to obtain propaga-on data for evaluating path role in intermedulation stortion of tropospheric scatter test circuit distortion of tropospheric scal [ESSA-TR-IER-41-ITSA-41]

06 p0797 N68-15300 for calculating power ar randomly frequency

RR-66-2] 07 p0964 N68-16798 ing device for recording frequency

TR-1001/2307/-17] 08 p1179 N68-17680 njugate phenomena of observed at magnetic 08 p1171 N68-17972

Measurement and interpretation of VLF and ULF whistler event power spectra recorded by ground and satellite receivers 08 p1172 N68-17977

Power spectrum analysis on band limited signals cor-upted by additive noise, multiple path, and Doppler effects (NRL-6673) 10 p1497 N68-19984

for identifying linear nity analysis 12 p1908 N68-22679 Direct harmonic me systems and power spectr [EUR-3734.1]

Stability of assumptions used to determine autocor-relation and spectral density functions of nonlinear devices or filters [RR-68-1] 14 p2231 N68-24470 14 p2231 N68-24470

nsity of low frequency 14 p2297 N68-24544

linimizing peak-to-average power ratio of radio als by proper selection of phase spectrum 14 p2222 N66-25025 tegration time reliability of Construction and long-in

TR-0158/3230-46/-13) 15 p2471 N68-26938 logical study and relation of clear air turbu-ountain lee waves in U.S.A. 17 p2907 N68-28484

Impedance, voltage, noise power spectra, and cir-itry for amplification by transistorized current-feed-ck dc electrometers

17 p2884 N68-28923 Application of correlation methods in determination of energy distribution with frequency in frequency modulated waves [RAE-TR-67079] 18 p3033 N68-29741

18 p3033 N68-29741 Representation of Van der Hoven power questra based on spectrum analysis data [ECOM-367G5-F] 18 p3067 N68-30024

Power and cross power de analog computer [EUK-3925.1] 18 p3116 N68-30377

Digital program for on-line correlation and power spectral density analysis [NRC-MK-23] 22 p3840 N68-35064

Synthesis of random variable from power spectrum for application to onboard and inflight alignment of carrier aircraft inertial navigation system platforms [FSR-AD6-04-08-1] 23 p4106 N68-36198

cephalographical tra dies [MDC-TR-67-106] 23 p4002 N68-36442

FORTRAN 4 source program listing for digital com-puter routines used in power spectral density analyses [TR-68-31] 23 p4026 N68-36570

Lunar Orbiter 5 side-looking radar experiment, and power spectral densities for binary frequency shift keyed waveforms 23 p4024 N68-37420

Higher order spectral relatio ips in linear time se-(TR-24) 24 p4229 N68-38220

POWER SUPPLIES

Fuel cell-battery hybrid power source for electric AD-662234 06 s0769 N68-15712

uits, optical package, and atomic time and frequency of spacecraft Analog and digital circu power supply of rubidium a reference system for manned NASA-CR-65942] or p0995 N68-16320

Lunar gravitation as power source
08 p1237 N68-17361

LAMPF 200 MHz RF power sources for preton [LA-DC-9452] 21 p3628 N68-34406

POWER SUPPLY CIRCUITS

d for formation of ic building blocks d power conditioning systems for as [TR-1001/2307/-6] 03 p0303 N68-12046 Magnetic core circuit for supplying power to bi-rectional stepping motors NASA-TM-X-630651 04 p0487 N68-13408

tric power module 06 p0767 N68-15230 Portable 560-wait the [AD-662770]

Pulsed power supply for electrols (UCRL-17621) 07 p0939 N68-16675

Circuitry, power supply, and operation of inverter for low temperature generator [TN-199] 10 p1461 N68-20492 10 p1461 N68-20492

reflic control centers 13 p1994 N68-23242 Reliability, performance, fail for power module for use in air (RD-67-62)

Design and performance for spacecraft power suppli-(ESRO-TM-1 [1/ESTEC])

power generation and

umplification studies [NASA-CR-94970] 15 p2436 N68-25915 esting for deep sea tric generator power

Component design and radioisotope-fueled thermock-supply system - SNAP 21 [MMM-3691-26] 15 p2506 N68-26947 Circuit development for ferrite core data sa

Protection circuitry for lie ar accelerator power am-

Electrical and physical factors and environmental of-fects on system performance of silent, multi-fueled de thermoelectric generators (ECOM-2979) 22 p3807 N66-35221

POWER TRANSMISSION

Hydraulic power transmission systems for UH-1

[USAAVLABS-TR-67-40]

03 m0301 N68-12285

POYNTING-ROBERTSON EFFECT

Differential equation of particle motion in dust near earth solved by Runge-Kutta method taking into ac-count rediation and corpuscular pressure as well as Poynting-Robertson effect 16 p2765 N68-27518

PPI [POSITION INDICATORS] PLAN POSITION INDICATORS

PPM [MODULATION]
U PULSE POSITION MODULATION

PRACTICES PROCEDURES

PRAESEPE STAR CLUSTERS

Position and location of flare stars in Pleiades and Praesepe clusters, Orion nebula through monochro-matic figuid filters, and stellar spectrophotometry in or near Orion nebula [AFCRL-66-418] 06 p0907 N68-15085

PRANDTL NUMBER

Convective heat transfer in unsteady laminar thermal oundary layer on semi-infinite plate in viscous liquid

02 p0291 N68-11750

Heat transfer and Prandtl number effects studied with incompressible viscous fluid at three dimensional tagnation point stagnation (RE-316) 07 p1095 N68-16600

Statistical theory of thermal convection at large

[NASA-TM-X-63171] 12 p1980 N68-21894

Axisymmetric viacous interaction with small surface slip and transverse curvature effects for Prandit 0.723 and for helium on unyawed cone [E-67-13] 14 n2239 N68-24206

Prandtls three main problems of airfoil theory in air-

[RAE-TR-67051] 14 p2182 N68-24951

Wall temperature and Prandtl number effects on absonic laminar and turbulent boundary layer thicke-

14 p2372 N68-25126

Boundary layer control problem for Prandtl number 20 p3464 N68-33071

PRASEODYMIUM

Contribution to optical model study by measuring reaction cross sections
[CEA-R-3091] . 03 p0396 N68-12639 Magnetic properties of praseodymium alumi

[LA-DC-8136] 03 p0409 N68-12651

Sublimation pressure and evaporation coefficient determined for praseodymium triflouride [UCRL-17804] 05 p0621 N68-14225 05 p0621 N68-14225 Fundamental investigation of alloying behavior of neodymhum, praseodymium, gadolinium, yttrium, and sumarium and related metals

11 p1714 N68-21130 Cross section for elastic scattering of fast neutrons by

CONF-680307-13] 14 p2304 N68-24650 Mass spectrometric analysis of sublimation and ther-modynamics of praseodynium and gadolinium sulfides [COO-1182-24] 17 p2843 N68-29234

Gamma ray spectroscopy of N equals 82 isotones isotones - lathanum, cesium, praseodymium, and

neodymium [COO-1112-167] 19 p3334 N68-31735 Magnetic and crystallographic characteristics of

20 p3566 N68-32829 Crystal field heat capacities of presecdymium dinickel and praseodymium bismide 20 p3570 N68-32880

PRASEODYMIUM ISOTOPES

Excitation functions for deuteron reactions with praseodymium 141 [KFK-519] 05 p0716 N68-14666 mance neutron capture plopes 15 p2519 N68-26389 Gamma ray spectra from reso in barium and praseodymium isc (JINR-P3-3696)

Data on decay chi in neodymium 138 to praseodymim 138 and ceriu IINR-P6-35411 m 138 23 p4121 N68-36778

PREAMPLIFIERS

Solid state preamplifier for beta ray thickness gage [NSJ-TR-83] 01 p0064 N68-10640

Germanium junction field effect transistor device for w noise amplification (UCRL-178(8) 07 p0973 N68-16260

Low noise pulse amplifier for germanium lithium de-cetors in pulse shaping network tectors in pulse (EUR-3659.E) 08 p1154 N68-17881

Low noise preamplifier with germanium junction field effect transistor for semiconductor radiation de-

12 p1850 N68-22574 (UCRL-18005) Pulse transformer between as and preamplifier for improved tin onductor counter me signal registration 12 p1850 N68-22630 and preamp

Silicon /lithium/ ra pliffers for high resolut electroms and X rays [JINR-P13-3718] tion detectors and pream-spectroscopy of conversion

14 p2260 N68-25397 Field effect transisto ers in low noise nucleonic charge-

15 p2435 N68-25737

Low noise preamplifier design for semiconductor radiation detectors [Al-AEC-MEMO-12706] 22 p3849 N68-35728 PRECAUTIONS

ACCIDENT PREVENTION

PRECESSION
NT LARMOR PRECESSION

Oscillations in bounded plasmas and incoherent precessing ions 15 p2529 N68-26166

on and nutation of deformable bodies - equa-tion for spheroidal deformation formation 20 p3602 N68-33007 [D1-82-0721]

E layer precession of magneti in ultrahigh vacuum Astron tank [UCID-15346] ically trapped particles 22 p3918 N68-35719

Free and forced precession of nuclear moments, nuclear spin and optical pumping generators for precession, and design of nuclear magnetometers. IPRS-464-10. r magnetometers 22 p3881 N68-35975 JPRS-46444)

PRECIPITATION

X ray diffraction studies of Al-Zn-Mg intermetallic [CNEA-198] 03 p0349 N68-11915

PRECIPITATION (CHEMISTRY)

Calcium vanadate precipitation from sodio vanadate solutions (BM-RI-7058) 02 p0173 N68-110 02 p0173 N68-11052 Prismatic cross-slip of dislocations in vicinity of

IS-TRANS-71] 05 p0698 N68-14132 Optical dislocation analyses of spherical precipita-tions in copper cobalt, and nickel silicon alloys [IS-TRANS-72] 05 p0674 N68-14429

Precipitation conditions effect on composition am-m exchange properties of zirconyl phosphate 06 p0793 N68-15959

Oriented growth of organic compounds, and tem-rature effect on oriented precipitations of crystals PRS-44895] 10 p1481 N68-19634 perature effect [JPRS-44895] separation of trace amounts of plutonium from macro amounts of platinum by coprecipitation with fer-ric iron followed by ion exchange on inorganic exchange materials [LA-3140]

[LA-3149] 10 p1485 N68-19967 Low temperature preprecipitation process in gold nickel alloy

12 p1886 N68-22209 Precipitation of thorium and uranium by ion tchange resins in nitrate solutions

(CEA-R-3222) OB 14 p2217 N68-25142 Increase in critical shear stress of alloy by precipita-tion of stressed coherent particles [IS-TRANS-75] 15 p.2484 NSR-76315

Ferric hydroxide precipitation treatment of low level

[AERE-R-5724] 17 p2836 N68-28417 Phosphorus 32 labeled lipoproteins prepared for Saccharomyces cerevisiae in 0.002 M borated buffer solution with pH factor of 8 [EUR-3919.7] 17 p2821 N68-28930

Coprecipitation of uranium/6/ with iron/3/ hydrox-

17 p2844 N68-29287 (KFK-TR-247) Nucleation mechanism and dissolution theory of su-percooled potassium and silver iodide mixed smoke NAD-CR-RDTR-1121 18 p3023 N68-30170

Low temperature precipit for removal of oxygen in liqu [LA-3936] on of carbon monoxide 19 p3229 N68-31747 Precipitation of rare earth oxides from molten salts 20 p3426 N68-32863

Physiochemical principles of precipitating lu-minophores from colloidal suspensions onto screens [ERDL-T-1928-68] 20 p3429 N68-33017

Metallographic studies of precipitation behavior of ho um and nickel-chromium-co ties of molybdenum effects on of heat resistant nickel-chromi-im-cobalt alloys 20 p3505 N68-33356

Mathematical models and experimental precipitation rates for charged particles in laminar flow 21 p3679 N68-33868

Nucleation and precipitation of li of lithium in silicon 21 p3650 N68-34029

Model for dissolution of precipitate initially in equilibrium with its depleted matrix [AMMRC-TR-68-14] 21 p3653 N68-34504 Ferromagnetic Curie temperature measurement of amma prime precipitate coarsening in binary nickelmetic Curre man precipitate coarsening in man precipitate coarsening in man precipitate coarsening in 23 p4077 N68-36866 [CALT-221-34]

RECIPITATION [METEOROLOGY]

NT DEW NT HAIL NT RAIN NT SNOW

Transmission loss from precipitation scatter inter-ference between space and earth communication

NASA-CR-901081 01 p0032 N68-10936 Meteorological charts and tables based on data col-cted in Rome

01 p0088 N68-10991 (RT/PROT/67/13)

Precipitation scavenging of submicron particles, and inertial and electric effects
[BNWL-SA-1402] 02 p0232 N68-11437 Mesoscale studies of instability patterns and winds in

ECOM-00443-F1 02 p0232 N68-11518 Precipitation effects on Omega aircraft radio naviga-tion receivers [NRL-MEMO-1810] 02 p0235 N68-11773

Markov chains used to evaluate probabilities of stochastic variations of wet and dry days [EMM-67-156] 03 p0362 N68-12018

Quantitative estimate of artificial precipitation increase during cold half of year in Ukrainian steppe [JPRS-43549] 03 p0364 N68-12271

Sub-synoptic network operations summary including evelopment of climatology and precipitation forecast [W-48] 03 p0365 N68-12599

Forecasting extratropical onshore gales at Virginia [W-50] 03 p0365 N68-12601 p

Synoptic met 1959 to 1966 [EUR-3569.I] gical observations at Ispra from 04 p0533 N68-13740

Climatological and mesosynoptic patterns of clouds and precipitation [SMRP-RP-67] 06 p0869 N68-15365

Synoptic procedures for snow forecasting in central nited States [PB-175804] 07 p1016 N68-16177

Cloud dynamics and precipitation model, natural and artificial ice nuclei, and cloud seeding [MRI66-FR-457] 07 p1017 N68-16514

Major storms in western Colorado and eastern Utah studied in relation to upper air circulation and moisture [WBTM-HYDRO-7] 07 p1018 N68-16770

Statistical prediction of precipitation probability (REPT.-7624-2681 07 p1020 N68-17012 Literature survey on can-type precipitation gage (TR-2)

07 p1021 N68-17026 Cloud structure measurements, and procupations with geographical region 09 p1338 N68-19406

Statistical techniques for verific robability precipitation forecasts tion of operational probability precipita [WBTM-WR-25] ts 09 p1370 N68-19484

Accuracy of forecasting data on temperature and WBTM/FCST-8] 10 p1551 N68-19773

Forecast performance of selected weather bureau of-lices for 1966-67 WBTM/FCST-9] 10 p1552 N68-19975 Synoptic and topographic effects on precipitation equency predictions for United States of America WB-5] 11 p1734 N68-20936 frequence [WB-5]

Radar for measuring total amount and intensity of

X

63

117

on ni-

56

on

68

29

in

04

56

er-

36

191

and

137

in

118

29-

173

of

18

in-

271

ing

199

ini

om

740

scha

365

177

iral

514 tah

770

012

026

tion

406

484 and

773

of-

975

tion

956

e of

595

Harmonic analysis of monthly precipitation over North America [ECOM-2893] 13 p2098 N68-23257 Summary of information of raindrop-size distribution and chloride particle concert [ECOM-02376-F] n on meteorological studies on, radar echo climatology, on in atmosphere 13 p2058 N68-23260 Steady precipitation research based on rain gage net-13 p2100 N68-23861 Intensification of precipitation and cloud seeding effectiveness from rain gage networks and radar observa-T-R-507] 13 p2100 N68-23863 T-R-307 Stored water in stratus and stratocumum-ver Ukraine during cold half of year 13 p2100 N68-23898 over Ukrain [T-R-555] Radar analysis of cloud and precipitation fields [T-R-537] 13 p2102 N68-24203 Quantitative analysis of radar echo strength as re-ted to precipitation intensity lated to precipitati [DLR-FB-68-20] 14 p2283 N68-25041 e of additional evaporation from reservoirs ed tracts on atmospheric precipitation influence of addit precipitation p2460 N68-26273 Hydrology, precipitation, cloud boundaries, weather forecasting, and instrumentation 17 p2909 N68-29452 Tables and maps of precipitation in Finland - 1931-1960 18 p3109 N68-30075 Error analysis to determine accuracy of precipitation tha recorded by meteorological network stations 4-7369] 20 p3519 N68-32438 [M-7369] Correlation of rain gage mean levels in regions of Soviet Union [M-7370] in data on precipitation 20 p3519 N68-32439 Precipitation anomalies for Northern Hemisphere in elation to basic atmospheric circulation types [M-7203] culation types 20 p3519 N68-32475 Statistical analysis of total liquid precipitation struc-ire and mean depth from rain gage data M-7372 Microphysical mechanism of precipitation from [EMM-66-128] 20 p3523 N68-32783 Cloud seeding theory and meteorological parameters in precipitation development 21 p3719 N68-34784 Statistical analysis of long term cloud seeding recipitation data in Missouri 21 p3720 N68-34791 Computerized comparison of seeded and not-seeded onvective cloud depths and predicted precipitation 21 p3721 N68-34794 Rainfall mean and median used for weather forecast-REPT.-82-68-1] 22 p3903 N68-35080 Precipitation static effects on aircraft reception of very low frequency signals and lane identification for hyperbolic navigation system [P&B-PUBL-979-8] 22 p3909 N68-35107 measuring dimensions and particles in clouds and Airborne instrument for oncentrations of large FTD-MT-24-246-67] 22 p3876 N68-35322 Long range forecasting of precipitation in May based a statistical analysis of data for European U.S.S.R. on statistica /1891-1965/ [M-7413] 22 p3907 N68-35674 Electrodynamic equations as or calculating absorptivity and and recursion formulas d scattering of millimeter waves in precipitation INASA-TT-F-119131 22 p3839 N68-35837 Gamma function distribution analysis for monthly recipitation in India 23 p4091 N68-36110 23 p4091 N68-36110
Selected model studies, observations, and theories on cloud formations, atmospheric circulation, precipitation, and weather forecasting.

[JPR\$-46566]

23 p4093 N48 34-34 Russian abstracts in meteoro ogy and climatology 23 p4094 N68-36552 Weather modification progr orms, fog dissipution and hail s ms for precipitation, storms, fog diss [NSF-68-21] 23 p4095 N68-36582 Quantitative monthly preation distribution analysis for United State [ESSA-TR-EDS-6] 23 p4097 N68-37389 Radar polarization characterapes, terrain, and hydrometeo ristics of symmetrical

24 p4228 N68-38219

PREDICTIONS Cosmic ray produced radionuclides as tracers of at-mospheric precipitation processes Creep strength o dispersion hard (EUR-4035.E) or nuclear technology 21 p3706 N68-34729 24 p4289 N68-38419 PRECIPITATION HARDENING FTD-HT-67-206) in molybdenum 22 p3892 N68-35869 ultiplication during strain lysis of helium gas buroun enitic alloy 23 p4074 N68-36205 Electron microscopic effect on creep ductility [GEMP-607] ng of iron 01 p0073 N68-10083 copic studies on nickel structures torium oxide strengthened with thorium of AFOSR-67-1577] strength of high strength im alloys 23 p4077 N68-36831 te lattice and dispersed ermally activated defire-02 p0221 N68-11312 precipitation has IUCRL-17872) Dispersion strengthening of tungsten by covapor Critical assessment deposition (UCRL-50209) 03 p0351 N68-12242 mation of metals (NASA-CR-97350) Dispersion strength in advanced space po [NASA-CR-72316] lum base alloys for use 24 p4267 N68-37870 PRECIPITATION PARTICLE MEASUREMENT 04 p0521 N68-13625 In-cloud drop size distrib istatic radar on precipitation harden-[P-18] 01 p0086 N68-10019 07 p1008 N68-16667 Theory for Doppler radar determination of wind and Use of surface rep and thin film electron tructures of dispersion [NASA-TN-D-4461] extraction replication, opy in study of micros-ened materials 09 p1353 N68-18999 precipitation vel [NSSL-35] 01 p0086 N68-10034 Theoretical modeling of fog modification by see with hygroscopic nuclei, climatic survey of fog freque cy in Buffalo, New York, large scale laboratory exp ments, and field tests Shaping of precip ened stainless steels by casting and powde [NASA-SP-5086] 09 p1348 N68-19307 [NASA-CR-91683] 05 p0685 N68-14212 Hard surfacing, electrop carburizing, nitriding, burn planishing, and peening o stainless steels ing, electrodeless pla ing, explosive harder precipitation-harden Radar analysis of he during 1964 [EMM-67-161] il storme over Peking /China) 09 p1367 N68-18404 (NASA-SP-5090) 09 p1349 N68-19343 static radar of in shower f drop size distribu Development of high ter-trengthened materials, co ature alloys, dispersion sites, and coatings for 09 p1368 N68-18556 aircraft gas turbine eng [NASA-TM-X-52420] mogeneous nucleation and droplet growth mea-nents in Wilson cloud chamber using laser in 10 p1539 N68-19787 Tungsten and thorium dia sersion stability in berylli-09 p1350 N68-19475 [TR-0158/3250-10/-9] nount and intensity of 10 p1539 N68-19998 (FTD-MT-24-171-67) 11 p1736 N68-21595 Thermal and mech al treatment for precipitation hardening stainless steels [NASA-SP-5089] 10 p1535 N68-20433 Effects of cobalt additive AM 350 stainless steels on precipitation hardening 12 p1835 N68-22243 of AM 350 stain (BM-RI-7121) Summary of infe of raindrop-size di and chloride partic [ECOM-02376-F] 11 p1711 N68-20824 Electron microscope pue for revealing micros-ened materials 11 p1715 N68-21431 tructures of dispersion [NASA-TM-X-1561] 13 p2058 N68-23260 stren Mechanical properties and stability of thorium dioxide particles in 2 percent thoria dispersed in nickel matrix 13 p2064 N68-24115 nest of snowfall by meteorological radar 20 p3518 N68-32293 12 p1885 N68-21852 ing of precipitation hardening on processi ment using cen stainless steels [NASA-SP-5088] Aerosol particle size ran 12 p1885 N68-21917 (SMRE-TRANS-5432) 20 p3535 N68-32457 cloud drops and on dispersion strengthened materials [RISO-48, SUP. 3] 13 p2084 N68-24015 21 p3720 N68-34793 stics of martenistic, tress corrosion tenitic, and precipi Visual study of large a bution of suspended so rbulence effect on dis-ts with respect to flow lened steels 14 p2268 N68-24402 reduction process for produc-nd cobalt base alloys 14 p2263 N68-24613 Flash drying selective r 23 p4094 N68-36428 INASA-CR-545161 binicron particles 24 p4289 N68-38416 Precipitation scavenging of s U FLECTROSTATIC PRECIPITATORS 14 p2274 N68-25388 PRECISION en concentration effects nperature of chromium 15 p2487 N68-26949 Heat treatment an Multiple precision su IBM 360 [NASA-CR-89962] outine source programs for ming effects on frac-01 p0035 N68-10665 Point measuring analyses on silicon a [NASA-CR-86032] d for precise resistance teel wire 16 p2680 N68-27657 08 p1228 N68-18067 Properties and applicati rength dispersion precip of thermally stable, high ion hardened alloys and PRECONDITIONING strength dispersion | metals [AMRA-MS-67-07] Design, manufact d type qualification tessing dation filters for NRZ pulse 18 p3087 N68-29748 of programmable pr signal conditioner [NASA-CR-92346] asbauer effect stu ase molybdenum a precipitation in binary 24 m4225 N68-37833 20 p3573 N68-33107 PREDICTIONS

NT LINEAR PREDICTION

NT PERFORMANCE PREDICTION precipitation harden bers predicted from 20 p3507 N68-33572 Fatigue life of notche Intermittent stress-relas nitrile and neoprene rubbei accelerated oven aging tests [RAE-TR-68016, PT. 2] smooth specimen fat [NAEC-ASL-1114] 01 p0143 N68-10577 Stability regions for Runge-Kutta methods and Adams predictor-corrector methods for ordinary dif-ferential equations (AFOSR-67-2329) 02 p0228 N68-11229 21 p3708 N68-34260 Grain structure model for precipitate dissolution and matrix material diffusion growth
[AMMRC-TR-68-12] 21 p3705 N68-34499 (DLR-FB-67-44) 02 p0158 N68-11576

H

PREPARATION

NT PRECONDITIONING

NT PRESTRESSING

NT PRETREATMENT Digital computers for prediction of instability in oc-ntrically stiffened cylinders under axial compression Apollo single bridgewire standard initiator RF [NASA-CR-91223] 03 p0423 N68-12456 [NASA-CR-96232] 20 p3401 N68-32455 Monte Carlo computer a alysis method for yield and grated circuits 04 p0488 N68-13231 PREFLIGHT ANALYSIS OSO-E1 prelaunch analysis and attitude control Preparation of pentabors e-11 in bench scale quan-NASA-CR-860161 [TR-14] [NASA-TM-X-63005] 02 p0176 N68-11390 Generalized predictor-corre plicit corrector truncation error SDC-SP-2901/000/00) 01 p0139 N68-10510 r-corrector methods, and ex-Preparation and properties of perchloro-p-xylylene 04 p0469 N68-13528 Methods and analyses for flight evaluation of control systems for multistage launch vehicles
[NASA-CR-95059] 15 p2498 N68-25930 04 p0529 N68-13269 Literature review on prep ties, structure, and uses of g [DCIC-68-2] on, formation, properdiction for Saturn AS-stem, S-1B-6 stage 20 p3579 N68-33418 Final flight perform 206, Mission 276, prop [NASA-CR-96473] Flow instability thresholds in closed natural circula-on loops predicted in terms of dimensionless parame-15 p2490 N68-26694 INASA-CR-915001 try, physical chem 04 p0495 N68-13374 diction for Saturn AS-tem, S-1B-7 stage 20 p3580 N68-33586 Final flight perform 207, mission 276, prop [NASA-CR-96451] try, preparation nuclear fuels an [CEA-N-616] Reliability of AN/MMQ-IB set for measuring low level incident wind, methods for predicting low level wind at time of rocket firing, and feasibility of hand anemometer as backup device. 17 p2846 N68-29437 ng solute elution and per-liquid elution chromatog-NT COUNTDOWN 04 p0502 N68-13593 Atlas Agena Applications ission, launch operations p ns Technology Satellite-Columnications, and 18 p3022 N68-30059 Prediction procedures classified for turbulent boundary layer problems - integral equations for solving partial differential equations prelaunch tests [NASA-TM-X-60905] tial differential [TWF/TN/27] 09 p1435 N68-19111 05 p0647 N68-14107 20 p3425 N68-32852 Black Arrow prela testing and launch Formation, prediction, and dispersion of fog 07 p1017 N68-16562 Gel-addition process for preparing mixed plutonia-urania fuels [BAW-3714-6] 21 p3655 N68-34746 19 p3372 N68-31123 Predicting low frequency marent-carrying twisted-pair cable [USL-848] gnetic fields near cur-Star photography during solar eclipse by fixed focus aerial cumeras aboard jet aircraft [NASA-CR-94290] 12 p1965 N68-22046 PREPOLYMERS U DIMERS 09 p1381 N68-18474 Neutron absorption rate predictions for materials with anisotropic effective macroscopic cross sections [KAPL-P-3340] 10 p1554 N68-19587 PRESERVATIVES Cryogenic fluids for food preservation, coolers perconductive devices, and spacecraft power suppl [TR-0158/3710-01/-1] REHEATERS U HEATING EQUIPMENT lites in Molniya se-Lifetime estimates for th ries in large-eccentricity orbits [RAE-TIC-67189] PREHEATING U HEATING 09 p1381 N68-18446 10 p1597 N68-20436 PRESERVING. PRILAUNCH PROBLEMS Acoustic enviro at predicted from fifty ton sur-Methods for preserving biol extended manned space flight [NASA-CR-90029] logical specimens during Early orbit and attitude deter prelaunch analysis for TOS C mete [NASA-TM-X-63007] 0 termination plan, and teorological satellite 01 p0133 N68-10106 IBRL-TN-1674] 11 p1743 N68-20590 01 p0010 N68-10277 Prediction of band-limited sign Flight performance of Atlas/Agena-24 launch vehi-cle for Lunar Orbiter 5 [NASA-TM-X-60888] 11 p1788 N68-21288 Feasibility studies for potato preserving by gamma 11 p1660 N68-20856 rays [JEN-184-51/I-17, PT. 5] Roentry predictions for Explo [NASA-TM-X-63164] rer 28 satellite 11 p1789 N68-21630 11 p1638 N68-20600 PRELAUNCH TESTS NT STATIC FIRING emparative analysis of methods of predicting un-ed rocket response to random stationary wind Preservation of p g gamma irradiation 23 p4000 N68-36915 Engineering aspects of preparing and launching two Black Brant sounding rockets in March 1966 [ERB-761] 02 p0272 N68-11805 PRESINTERING U SINTERING 12 p1902 N68-22216 Pilot/vehicle models for prediction of pilot dynamic response in manual vehicle control systems [STI-TR-164-2] 13 p2007 N68-23972 PRESSING der for Atlas/Centaur 02 p0196 N68-11900 Low frequency vibration for consolidation of pow-ders of hard alloys [NASA-TM-X-52352] Prediction of safe approach speed for aircraft on in-21 p3696 N68-33852 ecraft models, pr tests, and inst 14 p2185 N68-25284 PRESSING (FORMING) NT STAMPING satellites 04 p0582 N68-13281 tic stochastic predictor m [BCL-8-2] 16 p2635 N68-27800 Metal oxide addi Prelaunch real time im erobee 350 rocket act prediction system for ion effects on pressing and sintering of uranium dioxide [WAPD-TRANS-58] Surface defect analysis to predict failure pressure for 04 p0584 N68-13603 01 p0082 N68-10872 ductile pipe rupturing [BMI-1836] Voyager spacecraft design standards, and opera-tional support and mission-dependent equipment requirements [NASA-CR-93558] 99 p1435 N68-19105 tions and die loads calculated for nular disks with concentric circular 17 p2982 N68-29120 Pressure distributions forging of an Sharp edge delta wing drag prediction by application of leading edge suction analogy of vortex lift [NASA-TN-0-4739] 19 p3196 N68-31990 (TN-3) 09 p1435 N68-19105 02 p0216 N68-11371 Revised formulas for stress analysis of forces during pressing of pipes in dies with built-in core pins [FTD-HT-66-728] 05 p0670 N68-14900 Computer progra checkout [ELDO-TM-E-12] ng method for prelaunch Computer program for flow transient analysis of pressurized water reactor during flow constdown [WAPD-TM-428] 19 p3314 N68-32126 10 p1504 N68-20395 Utilization of digital covehicle prelaunch tests [ELDO-TM-E-19] ters for ELDO launch and metal pressing by Historical flow data and Air Traffic Control current activity as predictors of dema-obs [NA-68-20] 20 p3453 N68-32426 machine methods [FTD-MT-67-55] 10 p1504 N68-20396 15 p2474 N68-26491 ing, and support equipatatistical method for forecasting weather 20 p3518 N68-32428 Hardware, organization, testi ment for launching of Lunar Orl [NASA-TM-X-52405] f talc components 18 p3098 N68-29755 Hot pressing charact (JEN-190-DME/I-18) 11 p1680 N68-21239 time parameter effects metal powder 20 p3487 N68-32718 Mathematical model predictions and optimization study of gamma ray atmospheric density sensor [NASA-CR-66676] 20 p3479 N68-33199 Pressure, temperatur on press and sintering de [NUS-R-526] Prelaunch checkout and payload integration test quirements for combined mission flights of Apollo Methods for det ape and rate of plasti and pressing of shee NASA-CR-617841 Modified model for predicting high atmospheric pol-14 p2350 N68-24576 or prelaunch test equip-Selection consider ment system for Apol [NASA-CR-61818] 21 p3684 N68-33631 23 p4068 N68-36605 [FTD-MT-24-129-67] 14 p2237 N68-25451 Analytical method for deter plastic deformation rate in principle. Computer program for predicting lattice parameters for nuclear reactor cores [DUN-SA-70] 21 p3728 N68-34782 nining velocity field and saing through rectangu-Black Arrow prelaunch testing and launch 19 p3372 N68-31123
Metallurgical evaluation of small aircraft engine exhaust system component failure during ground test and aircraft operation
[NA-68-22] Predicting error rate in digital data transmission stems using four-phase or two-phase modulation 22 p3833 N68-35160 23 p4068 N68-36607 Pressing of blanks heated in m [FTD-HT-23-929-67] olten glass 23 p4068 N68-36701 dicting resonances and on interactions 23 p4111 N68-36036 Mathematical models for pre kinematical peaks in pion-nucle ATMOSPHERIC PRESSURE
ATMOSPHERIC PRESSURE
BASE PRESSURE
BLOOD PRESSURE
CITICAL PRESSURE
DENSIFICATION
DIFFERENTIAL PRESSURE
DYNAMIC PRESSURE
ELECTRON PRESSURE
GAS PRESSURE
HIGH ALTITUDE PRESSURE
HIGH PRESSURE
HIGH VACUUM
HYDROSTATIC PRESSURE
HYDROSTATIC PRESSURE
HYDROSTATIC PRESSURE
HYPERTENSION

PRELOADING U PRESTRESSING

PREMIXED FLAMES

Behavior of stainless steel, Hastelloy C, Haynes alloy 25 and tantaium in hydrogen-fluorine environments (SC-CR-67-2656) 05 p0628 N68-14906

Flame propagation in supersonic premitted flows of hydrogen and air ignited by coaxial, hot gas, pilot jet [NASA-TN-D-4631] 16 p2797 N68-28100

tion in premixed flames 15 p2573 N68-25770

A-966

Mathematical prediction

Components, and functions of third stage of ELDO launch vehicl [DGRR/WGLR PAPER-66-066]

(FTD-MT-24-373-67)

U PREDICTIONS PREFIRING TESTS

NT COLD FLOW TESTS of

oscillations of

24 p4252 N68-38052

as of checkout system for

06 ±0804 N68-15211

IMPACT LOADS
INLET PRESSURE
INTERNAL PRESSURE
INTRAOCULAR PRESSURE NT INTRACCULAR PRESSURE
ISOSTATIC PRESSURE
LOW PRESSURE
LOW VACUUM
LUMINANCE
LUMINOUS INTENSITY
OVERPRESSURE
OVYCEN TENSION NT **OXYGEN TENSION** OXYGEN TENSION
PARTIAL PRESSURE
RADIATION PRESSURE
SOUND PRESSURE
STAGNATION PRESSURE
STATIC PRESSURE
SUPERCRITICAL PRESSURES
ULTRANISINT PRESSURES
ULTRANISIT PRESSURES
ULTRANISINT PRESSURES
ULTRANISINT PRESSURES
ULTRANI VACUUM VAPOR PRESSURE WALL PRESSURE WATER PRESSURE WIND PRESSURE KKK Pressures and heat transfer rate predictions for rocket exhaust impingement on flat plates and curved NASA-CR-61234] 17 p2988 N68-29457 aromatic hydrocarbons Fluoroescence life under pressure [TR-13] 22 p3825 N68-35403 PRESSURE BREATHING Carbon dioxide retention during prolonged exposs to high pressure environment [SMRL-520] 21 p3637 N68-346 21 p3637 N68-34630 PRESSURE BROADENING Accuracy and spectral re-direct integration methods, sure broadening al resolution of band models and ods, and line spectra with pres-08 pl175 N68-18114 Relaxation theory of spectral line broadening in plasmas based on pressure broadening in neutral gases 13 p2126 N68-23501 Overlapping spectral line pro [NASA-TT-F-11817] 18 p3137 N68-30730 Intermolecular forces and interactions calculated from pressure broadened spectral line shapes 22 p3928 N68-35196 PRESSURE CABINS
U PRESSURIZED CABINS PRESSURE CHAMBERS
NT VACUUM CHAMBERS athematical model for one gas flow in pressure exchanger [RAE-TR-67123] 04 p0436 N68-13500 rized cylindrical shell subjected to Orthotropic pres [TR-0158/3240-30/-4] 10 p1605 N68-19943 PRESSURE COEFFICIENT
U AERODYNAMIC COEFFICIENTS PRESSURE DISTRIBUTION simulation of laminar separ plates by induced pressure fields [AE-186A] ration bubbles on flat 02 p0196 N68-11014 Linear equations for determining effects of com-ustion oscillations on jet boundary shapes and pres-tre distribution in jet engines Pressure distributions and die loads calculated for press forging of annular disks with concentric circular [TN-3] sure distributio [D1-82-0629] 02 p0281 N68-11234 Approximate solution for indentation of aloping mes in rigid plastic media in terms of mean pressure 02 p0278 N68-11679 nd serodynamic charac-sule in hypersonic flow 03 p0295 N68-11958 re distributi teristics of Nimbus B fuel cap [NASA-TM-X-1487] Digital computer program ombinations of axial load as m for determining critical and radial pressure in stiffened circular cylind [NASA-CR-91224] 03 p0422 N68-12372 Low density wind to flat plates with forward [ARC-R&M-3506] ts on pressure plotting 03 p0297 N68-12427 Surface pressure is sity flows at Mach m [ARC-R&M-3505] 03 p0297 N68-12492 Comparison of pressure drag in transonic speed ranges for sharp and blunt leading edged two dimensional airfolis [ARC-R&M-3465] 03 p0298 N68-12514

Pressure distribution of compressible and incom-pressible flows in turbulent boundary layers [ARC-CP-967] 04 p0492 N68-12967 oe using pressu scoulty on wave r id inviscid flow th Estribution an [REPT.-1236] 04 p0492 N68-12994 cally oscill rigid wings in low subsonic flow [DLR-FII-67-54] 04 p0436 N68-13460 Sting support interference on pressure distribut on rear fuselage and tailplane in subsonic wind tur 04 p0436 N68-13511 Magnetic megagauss fields use in transmitting very high transient pressures to electric conductors .04 p0546 N68-13771 ar technique for deter-04 p0592 N68-13876 ELDO launch vehicle in-flight nerodynamic charac-ristics obtained during flight F-5 NLR-G-62] 05 p0602 N68-14004 d during ELDO F-4 flight conditions and pressure (NLR-G.57) 05 p0602 N68-14015 Peak pressure of sonic booms produced by Mirage 3 aircraft measured over fixed ground range [ISL-T-30/67] 06 p0766 N68-15019 Supersonic flow and press oid surfaces ere distribe ition over ellip-06 p0920 N68-15432 ALGOL program for calculating inviscid subsor PL-AERO-NOTE-1062) 06 p0763 N68-15738 Cold air study of gas turbine for high temperature aircraft engine applica [NASA-TN-D-4389] 06 p0765 N68-15743 Measurements of wave number/phase velocity spec-trum of wall pressure beneath turbulent boundary layer [NPL-AERO-1224] 06 p0829 N68-15776 Integer relations met shock layer flow and prood of determining inviscid INASA-TN-D-43971 06 p0765 N68-15778 Wall pressure distribution in supersonic wind tunnels 06 p0823 N68-16034 Flow distribution around pyramidal centerbodies of jet engine inlets [DLR-FB-67-72] 07 p0934 N68-16781 fer and pressure distribu-ncel and free flight 07 p1099 N68-17030 Comparison of heat transf tion measurements in wind tue [PB-176096] Wind tunnel tests on pressu shapes of conical blunted boo speeds in nitrogen, or helium ([NASA-TN-D-4314] distribution, and shock es moving at supersonic 08 p1106 N68-17896 emion techniques for measuring temperature a tre distribution in liquid rocket propellant plun 08 p1259 N68-18100 Expansion technique for calculating pressure coefficients of wedges in symmetric, hypersonic, ideal at 09 p1327 N68-18683 Effect of two dimensional nations on pressure and heat tra-plate in hypersonic flow [NASA-TN-D-4437] nal multiple sine wave protru-t transfer distributions for flat 09 p1267 N68-19063 Wing surface pressure data tunnel tests of propeller driven a [NASA-TM-X-1527] re data from large scale wind driven short takeoff aircraft 09 p1271 N68-19065 Pressure distributions and disturbance region as-sociated with yawed hypersonic delta wing of diamond cross section at zero angle of attack [DAC-60715] 10 p1455 N68-19788 10 p1455 N68-19788 Radiant heat transfer in noninothermal guses with scribed distribution of temperature, pressure, and 11 p1800 N68-20585 lysis for Mach number, incidence, sideslip, and fairings during ELDO F s of i 5 flight [NLR-G.62] 11 p1788 N68-20935 Pressure distribution measur acited sweptback wing with 11 p1619 N68-21178

Low speed wind sumal measurements of pressure luctuations on twin jet aircraft wing to estimate buffeting boundary [RAE-TR-66399] 11 p1623 N68-21282 Wind tunnel investi blunted 15 deg half-co [NASA-TN-D-4494] lifting-entry body 11 p1621 N68-21681 m and wind velocity waves 12 p1866 N68-22057 ned in cyli in electrical arc co [ARC-29426] drical tube 12 p1915 N68-22127 Local premure fields as flow in jets [ARC-CP-989] ciated with turbulent shear 13 p2051 N68-23174 Pressure distributions over spherically blusted ogive computed for perfect gas, equilibrium air, and nonequilibrium inviscid outer flow fields with reacting AEDC-TR-68-31 13 p1987 N68-23267 ition of fluid flow 13 p2052 N68-23418 of Reynolds number and characteristics and sur-natural shape believe (GER-137311 13 pf993 N68-24023 Pressure distribut aerofoil at subsonic [NPL-AERO-1238] m on thick cambered 13 p1989 N68-24027 ce prestimate from observed ng conical body in suing conical body in su-otography 13 p1969 N68-24131 personic flow using t ing and pressure dis Interaction effects tribution of heteroge (NYU-AA-67-109) n duct 14 p2240 N68-24407 Pressure fields in ele I with random vibratio 14 p2298 N68-24720 Velocity and pressure d tions of diffusing jet 14 m2242 N68-24940 Heat pipe flow simulation to tribution in vapor of heat pipes [LA-3881-MS, PT.1] mine pressure dis 15 p2389 N68-25656 rical analysis of gas bearing film pre-REPT.-11) 15 p2473 N68-26365 pressure fields for tropical store [EDS-4] dictions from wind and is in Indian Ocean 15 p2497 N68-26468 Pressure profile of Ja ethods for reducing gas rocket experiment and ng gas load stigation of chordwise nd turbine airfoil 16 p2587 N68-27232 Experimental cold flow static pressure distribution a [AFAPL-TR-67-147] IDLR-FB-68-081 17 p2871 N68-28771 Flow velocity, pressure distri-chaique for laminar flow of vi-ewtonian fluid through rotating tion, and difference oue, incompressible, arbine disks g turbine disks 18 p3058 N68-29613 nozzie geometry and walls for optimization of s [FTD-HT-23-1079-67] dy of exisymmetric b [AEDC-TR-68-99] 18 p2993 N68-29683 Lifting pressure distribution trailing-edge flap control surfi-sonic flow [SUDAAR-336] on tail or wing, with 18 p2993 N68-29692 pressure on blint non personic Mach numbers 18 p2994 N68-298 cylindrical afterbod (AEDC-TR-68-82) ributions calculated for e of attack 18 p2994 N68-29855 Subcritical flow symmetrical airfoli [ARC-CP-993] 18 p2995 N68-29945 pressure distributions sonic speeds [NASA-TN-D-4686] 18 p2996 N68-29955 18 p3177 N68-29975

Hyd veloci tempe

Effe nickel elastic

The charge perate JUL-

Suri ductile [BMI-

Gas and fi discha

Turi

Tem

ARC.

power ductor [AFO

High

ARO

Pres

Lite

Pres

Mag

Tem (FTD-)

App

Pre-i proved NEL-:

Effec

Press

DLR-

Press als with [TR-37

NT B

INASA

work o

spherical radone models [ESD:TR-68-84] Pressure distribution on surface parallel to rotati disk with steady, incompressible Newtonian fluid flor ins in east.

ing in gap 18 p3062 N68-30108 Pressure distribution on co flared body at Mach 14 with flow [ARL-68-0032] on conical and cylindrical

18 p2997 N68-30112 Pressure and velocity fluctuations and fields in turbu-lent mixing and other regions of air jet using hot wire Strouhal number measurements

18 p3063 N68-30282 Spatial correlation spectrum of field of plate vibra-tions under widehand random loading 18 p3182 N68-30660

Pressure and velocity distrib ution for laminar hyper-ng toward corner 18 p3065 N68-30847 sonic boundary layer acceleration [REPT:-8416-13-T]

Atethod and results of gas pressure distribution measurements on high speed diesel engine
[RTS-4437] 20 p3577 N68-32444 ssure distribution mea-

Simple method for calculating amooth subsonic flow on thin airfoils with small angle of incidence [EE-TRANS-1684] 20 p3391 N68-32479

Descriptive material for atlas of climatological pres-ure field charts in Northern Hemisphere troposphere M-7200] 20 p3520 N68-32617

Atmospheric pressure fields and ocean currents in Guif of Finland correlated through Chebyshev polynomial series [NOO-TRANS-384] 20 p3473 N68-33232

Supersonic transport near field design concepts for plateau pressure signature to reduce sonic boom 22 p3803 N68-34911

Computer program for pressure distribution of standing wave incident on two dimensional rectangular body

22 p3799 N68-34916

Multipoles, waveforms, and atmospheric effects on pressure field distribution and sonic boom reduction 22 p3804 N68-34922

Hypersonic heat tra on apherically blunted o [NASA-TN-D-4792] are distribution ed cone

22 p3799 N68-35497 Forces, pressure distribution, shock waves from

hypersonic gun tests on caret wings [DLR-FB-68-41] 22 p3800 N68-35500

Theoretical analysis of pressure distribution, load capacity, insul angle, and friction force for single-step concentric journal bearing (NASA-TN-D-4839) 23 p4067 N68-36098

Cone-cylinder models tested in supersonic wind tun-nel to evaluate effect of wall reflected disturbances on model pressure distributions [NASA-TM-X-1655] 23 p3984 N68-36134

m of compressible turbulent Experimental investi boundary layer with [ARC-R&M-3526]

23 p4051 N68-37061 Nonlinear lift and pressure distremental Nonlinear lift and pressure distremental life and bodies with strakes at low speed alcal bodies with strakes at low speed alcal bodies with strakes at low speed alcal bodies with strakes at low speed and pressure alcal posteriors. conical bodies with [NASA-CR-1202]

Symmetrical nonlifting quasielliptical airfoil sections in steady subcritical and critical potential flows [NLR-TR-68016-U] 24 p4193 N68-37811

PRESSURE DRAG

NT SUPERSONN.
NT WAVE DRAG INTERFERENCE DRAG SUPERSONIC DRAG

Zero incidence forebody pressure drag coefficients of axisymmetric budies for measured bow shock wave [NPL-AERO-1245] 06 p0763 N68-15739

Effect of boattail juncture shape on pressure drag coefficients of isolated afterbodies of supersonic engine

nacelles [NASA-TM-X-1517] 09 p1268 N68-19237

Friction and pressure fluctuations in turbulent wall flow with polymer additive [USL-881] 13 p2051 N68-23256

Simulated wing effect on pressure drag coefficient of subsonic boattail at angle of attack. [NASA-TM-X-1662] 22 p3801 N68-35672

Interference pressure analysis for compressible sub-sonic flow around oscillating linear profiles [REPT.-67-J-03, PT. 1] 23 p4051 N68-36984 Effect of geometry of conical afterbodies on base

nd transonic speeds 23 p3986 N68-37054

PRESSURE DROP

Pressure drop, and flow distribution calculations for hydraulic pipeline network [MTB-010040] 06 p0830 NeB-15876

Mathematical model for deriving pressure drop painst flow function of counterflow boiler tube in Ran-[NASA-TN-D-4498]

10 p1613 N68-20066 Empirical method for predicting flow loss of gas or liquid in flexible hours [NASA-CR-62061] 12 p1859 N68-22097

Pressure drop analysis for thermal stability of filtered aircraft fuels 16 p2748 N68-27854

Pressure drop, mass rates, and heat transfer rates of sum condensation in horizontal channel 21 p3791 N68-33628

PRESSURE EFFECTS

Melting point-pressure potassium, and rubidium [NASA-CR-90030] re curves for lithium, apr 01 p0073 N68-10071

Light pressure effect on orbital trajectories of space vehicle interorbital flights. [NASA-TM-X-60601] 01 p0134 N68-10285

Pressure effect on high temper [UCRL-17410] 01 p0020 N68-10388 Thermal contact conductance tests in vacuum as function of pressure, and elastic deformation data plotted as function of applied loading [NASA-TM-X-60588] 01 p0151 N68-10508

ion transition of burni

Pressure triggered combu orous explosive hexogenes 02 p0285 N68-11563

Pressure test and failure analysis for reactor pressure 03 p0382 N68-12767 [WAPD-TM-640]

Absorption analysis for ultrasonic pulses in water and propanol under pressure [TR-4] 04 p0543 N68-12928 perature transformation

Pressure effects on high ten of beta to alpha silicon carbide [AFCRL-67-0436] 04 p0556 N68-13113 Temperature and pressure derivatives of isotropic aund velocities and adiabatic bulk moduli of alpha-

[NASA-CR-91303] 04 p0557 N68-13280 on fatigue life of roller steel aced pressure effe arings with miners

(NASA-TN-D-4348) 06 p0848 N68-15010 Pressure shock wave propagation along elastic linear

[ISL-T-4/67] 06 p0918 N68-15224 Pressure dependence of tensile stress-strain behavior of recrystallized powder metallurgy tungsten at environmental pressures of 11 kilobars. [NASA-CR-92392] 06 p0856 N68-15715

Current carrying capabilities of thermionic cathodes in nitrogen at pressure levels above one atmosphere [NASA-CR-73186] 07 p1058 N68-16362

Digital computer program for predicting panel response to turbulent boundary layer fluctuations [NASA-CR-61555] 07 p1091 N68-16702

High pressure effects on Curie temperatures of fer-magnetic zirconium iron niobium alloys, and zinc adolinium alloys 07 p1068 N68-16957

Pressure and temperature effects on chemical reac-tions and kinetics, phase transitions, X ray diffraction, and electrical properties of solids [ARGD-2739-19-C] 09 p1406 N68-18364

Compression temperature and pressure effects on ig-nition and cool flume decay of hydrocarbons in stoichiometric proportions with air

09 p1450 N68-19175 Gas measuring system errors arising from thermo-molecular pressure effects in tubes and at orifices [AGARDOGRAPH-119] 09 p1450 N68-19195

Pressure-induced phonon frequency shifts measured sodium iodides 10 p1575 N68-19678 [SGAE-PH-57/1967]

Gas pressure effects on ca tural materials in liquid meta [NASA-TM-X-524]4] n on cavitation resistance of struc-id metal space power systems 1) 10 p1538 N68-19745 Bivariate frequency distributions of pressure altitude and temperature and effects on required nurvay lengths and allowable takeoff weights

II p1619 N68-21046

Stresses and buckling in thin domes under internal AMMRC-MS-68-01] 11 p1798 N68-21435

effects on molecular 11 p1656 N68-21565

Pressure effect on indices of combustion process and heat transfer in heat resistant combustion chan (FTD-MT-24-136-671 11 p1805 N68-21617

Pressure effect and time resolution of helium molecular bands in pulsed microwave plasma wave plasma 12 p 947 N68-22185

Gas pressures effect on accelerated cavitation (NASA-TM-X-61065) 12 p1888 N68-22341

Wind tunnel investigation of fluctuating pressures on Centaur model surface at transonic speed [NASA-TM-X-1574] 12 p1972 N68-22742 High hydrostatic pressure effects on self diffusion of gamma uranium and noble metals [CEA-R-3316] 12 p1892 N68-23002

Ambient pressure effect on boundary layer transition

[AEDC-TR-68-36] · 13 p1987 N68-23344 Effects of wind field pressure gradients on breeze 13 p2098 N68-23358 [FTD-MT-24-305-67]

Hydrostatic pressure effects on magnetic transitions in gadolinium-dysprosium alloys 13 p2132 N68-23417

Spin-lattice relaxation time of nitrogen 14, and pressure and temperature dependence 13 p2013 N68-23520

Effects of deformation processes during recrystal-lization on metal pressure resistance 13 p2075 N68-23839

Comparison, at simulated altitude, of nitrogen tetroxide/monomethylhydrazine and hydrogen perox-ide/monomethylhydrazine ignition pressure spiking characteristics. (NASA-CR-62071) 13 p2144 N68-23947

er studies on dilute alloys of High pressure Moss on 37 in iron, conner m, and titanium 14 p2328 N68-24362 Elastic stability analysis for spherical shells under ex-

ternal pressure [ISAS-423, V. 33, NO. 5]

14 p2354 N68-24419 Photochemical analysis of benzene pressure effects on absorption band fluorescence [COO-913-22] 14 p2212 N68-24679

High pressure combustion characteristics of single fuel droplet burning in air [NASA-CR-72399] 14 p2371 N68-24810

Pressure test analysis for large multiple cell tank with sectioned skin [NASA-CR-61221] 14 p2359 N68-25222

Abstracts of experimental studies on effects of parabarosis on infection [NASA-CR-84683] 14 p2202 N68-25340

Pressure effects on electrical properties of crystalline 14 p2335 N68-25394

Premure dependence of nuclear spin-lattice and spin-spin relaxation times in aluminum powder 15 p2535 N68-25950

ire effects in photolysis of bi-isotopic ethane and non-isotopic ethan

15 p2407 N68-26076 Hydrostatic pressure effects on electron paramag-netic resonance of doped sapphire 15 p2412 N68-26110

Response of elastic surface to normal pressures over constant and expanding circular area [TR-5] her 2560 Med 25752

Pressure effects on fluorescence spectra of doped crystals of anthracene, naphthalene, and phenanthrene [TR-0158/9250-01/-1]

15 p2537 N68-26258 Split Hopkinson pressure bar data analysis for stress rain relationships from axial wave propagation and end effects [NOLTR-67-156] 15 p2571 N68-26550

Vibration analysis to determine surface pressure effects on response characteristics of Apollo structure [NASA-CR-92168] 15 p2571 N68-26706 Pressure and vibration rate effects on fretting damage in steels [RIA-68-896] 16 p2673 N68-26984

Pressure effect on heat transfer coefficient for condensing steam vapors (ONR-TR-2) 16 p2792 N68-27088

Applicability of deep wrinkle membrane theory in assessing maximum bending moment of inflated fabric cylinders, and packaging effects on collapse resistance 16 p.2784 N68-27925

drag at subsonic and to {NASA-TN-D-4821}

Injected gas flow affect on gradient persons turbu-tent boundary layer flow around flat plate 08 p1256 N68-17710

NT MANOMETERS NT OSMOMETERS NT PIEZOELECTRIC GAGES NT VACUUM GAGES Finite beta stabilization of absolute loss-cone insta-bilities - finite plasma pressure effects on absolute sta-ble modes occurring at multiples of ion gyrofrequency [UCRL-50397] 16 p2740 N68-28289 subatmospheric pressure effects on dynamics and with of single vapor bubbles ttery-powered gage for s oring discharge tube 17 p2983 N68-28353 LRP-32/671 05 p0664 N68-14820 Hydrostatic pressure effects on screw dislocation locities in single crystals of lithium fluoride at roo of three stress gages for mea-ms on buried structures and Design and evaluation oring mechanical street structurel el [TR-1-801] 17 p2952 N68-28376 09 p1339 N68-18296 Effect of strong shock waves on polycrystalline nickel - Rydberg series calculation of high pressure elastic constants for nickel of flush, static pressure ori-NASA-TM-X-1530] op p1268 N68-19341 17 p2898 N68-28378 Response of pneumatic pressure measurement systems to step input in free molecule, transition, and continuum flow regimes [NBS-R-439] 10 p1529 N68-19804 Thermal conductivity of coated nuclear fuel particle sarges with filler gas as function of pressure and tem-JUL-511-RX1 17 p2984 N68-28543 Device for me Surface defect analysis to predict failure pressure for [MLM-1446] 12 p1878 N68-22846 (BMI-1836) 17 p2982 N68-29120 Calibrating fluid self-recording gag (BRL-TN-1675) or time mark generator for Gas mixture and pressure effects on wavelength and of form of spectral Ne line emitted by Ne-He ischarge tube 13 p2065 N68-23055 ge for high altitude con-18 p3018 N68-29735 ulent to lamin nar flow reversion in boundary 14 p2255 N68-24725 Turbe Servocontrolled ga flow into vacuum cali (AEDC-TR-68-100) system for regulation of 18 p3063 N68-30588 Ts p3080 N68-29752 Temperature and pressure effects on thermoelectric power and electrical resistivity of metal oxide semiconductor NiO [AFOSR-68-0982] 18 p3048 N68-30636 transport propert earch progress in p steraction, electron adactivity of argon s Pressure effects on thermal decomposition of potas-um chlorate and mercuric oxide and synthesis of lithi-m superoxide compounds NASA-CR-95874] 18 p3144 N68-30295 Pressure gage for med in electrical noise envi time-varying pressures it typical of capacitor 19 p3221 N68-30924 sure effects on specific heat of nitrogen and methane using virial equations of state 19 p3384 N68-31036 discharge systems [TR-0158/3240-10/-9] 19 p3276 N68-31237 bubble chambers by ity limit 23 p4065 N68-37183 Calibrating pressure gages measuring the hydrogen sensit [DESY-68/30] High pressure syntheses of tungsten compounds and ressure effects on structure of organic semiconductors [AROD-3783-4-C] 19 p3223 N68-31125 PRESSURE GRADIENTS Pressure derivative of longitu [TR-12] dinal wave of iron 19 p3382 N68-32081 Dynamic characteristic rapidly fluctuating flow rat [NASA-TM-X-5J659] of turbine pumps with ure survey on theoretical and sep-oressure effects on metals 20 p3600 N68-32441 01 p0068 N68-10172 ding similar solutions in dimensional, linearized to streamwise pressure Similarity, and correspondence compressible, laminar, two wakes and jets subjected work on pressure [NEL-TT-1985] Pressure effects on ductility and fracture of metals in AE-270A, PT. 1] 02 p0200 N68-11488 [RTS-4509] 20 p3499 N68-32726 cular cylinders moving Magnetism of rare earth elements and ionic com-ounds under pressure 02 p0278 N64-11675 20 p3566 N68-32826 and pressure gradient of-Temperature and pressure effects on liquid oxygen 02 p0288 N68-11732 [FTD-HT-67-180] 20 p3610 N68-32935 sure turbulent boundary m of adverse pressure Response of constant pre-ver to sodden applicati Approximation of cylindrical hole dimensions amed by high pressure strike impact on metal 20 p3603 N68-33125 INPL-AERO-12191 03 p0335 N68-12096 Analytical procedure for determination of deflec-tions and stresses in web-stiffened sandwich shells under external pressure pressure gradients, and elative to jet mixing flow 04 p0492 N68-12976 andary layer a chemical reactions rev [NYU-AA-67-102] 21 p3782 N68-33733 proved metal drawing process [NEL-335] on surface heating of ry layer hypersonic flow 05 p0646 N68-14002 tatic pressure for im-21 p3696 N68-33821 apillary gas flow under media 05 p0647 N68-14080 Approximate equations gradient pressure, and in p [AERE-R-5492] re, time on shear flex-fiber laminates 21 p3708 N68-34299 Effect of temperature, pre-ure strengths of polyimide-gla [NASA-TM-X-61212] de, Mach number effects, supersonic transport 22 p3803 N68-34913 Pressure prediction methods ad sonic boom reduction for s with Stok 06 p0827 N68-15511 Pressure dependence of plasma diffusion across uniform magnetic field [IPPJ-70] 22 p3945 N68-35798 inar boundary layer at and local thermod radiation and absorti tion for zero pressure nic equilibrium condi-06 p0925 N68-15611 Scintillation of liquid helium at various temperatures undary layer with pres-23 p4108 N68-36708 (FFA-113) Pressure dependence of lead phonon spectrum from electron tunneling data 07 p1096 N68-16711 23 p4157 N68-37182 flect on generation of layer in incompressible Hemodynamic measurements on human skin capilla-ry flow during exposure to high and low atmospheric 07 p0988 N68-17000 are gradients in con ad by-pass lanes, air condition theres DLR-FB-68-561 24 p4203 N68-37988

Pressure effects on ionic diffusion in porous materi-ts with aqueous electrolytic solutions [R-37] 24 p4219 N68-38229

PRESSURE GAGES

NT BAYARD-ALPERT IONIZATION GAGES

NT IONIZATION GAGES

NT KNUDSEN GAGES

als with a [TR-37]

11 p1681 N68-20623 dary layer equations representing jets and a tailored pressure gradient 12 p1859 N68-22124 ure gradients on breeze Effects of wind field pre (FTD-MT-24-305-67) 13 p2098 N68-23358 Asymptotic solution of equations of incompressible boundary layers with negative pressure gradient [ANL-TRANS-576] 13 p2053 N68-23738 Premure fluctuation me blust atmospheric entry ve [NASA-TN-D-4591] were gradients in heat or reactor 14 p2291 N68-24894 Tube vibrations and exchanger of molten salt [ORNL-TM-2096] Airful pressure gradient bulent boundary layer thick [ARC-CP-986] 15 p2382 N68-26566 ary layer and pressure tence 16 p2650 N68-28315 owneter data for turbulent orfaces in adverse pressure 18 p3062 N68-30110 NSRDC-2659) nd for calculating turbu-nce of positive pressure Unparametric integral meth ent boundary layer in presen NASA-TT-F-118731 19 p3264 N68-31295 Supercooled pressure pressure pressure pressure and press dient approximations in stems following primary (IDO-17243) 19 p3313 N68-32038 Velocity profiles for ent boundary layers with [ARC-RAM-3542] 22 p3854 N68-34842 Conductances as 30 degrees C [AFOSR-68-1617] of pressure recovered at 22 p3822 N68-35075 re gradients in pipe flow and cavitation some len (FTD-MT-24-162-67) 22 p3859 N68-35343 Approximation method for calculating two dimen-n turbulent boundary layers with arbitrary pressure Practicats NASA-TT-F-11915] 22 p3862 N68-35602 Mixing and combi-lateral premure gradie [NASA-CR-97066] in supersonic flows with 22 p3980 N68-35782 Void fraction, pressure dr ficients in two phase flow [NYO-3679-3] pe, and heat transfer coef-23 p4188 N68-36856 cooling fins 23 p4189 N68-37012 fference for helium 4 23 p4190 N68-37078 [CEA-R-3485] Pressure drop calculation in pipes, with constant 17 p2871 N68-28754 [SP-914] 20 p3489 N68-33111 Pneumatic cylinder test result [NASA-CR-96543] 21 p3697 N68-34263 parements in condensed ex-itial densities using multiple ler techniques 04 p0598 N68-13812 on pressure measurements of tine their suitability at solvents th temperature reactor 05 p0600 N68-14000 turing ELDO F-4 flight meditions and pressure LR-G.571 05 p0602 N68-14015 07 p1100 N68-17142 ry layer interaction of-both subsonic and su-I study to optimize filling 06 p0850 N68-15334 08 p1105 N68-17304 A-969

SUB

PRES

C

P

S/4-i hydr [NA

power terist

PRESS

Ela ratio (FTE

flow [NAI

profit D1-

Qui piezo 20 to [NAS

Sim

INYC

Pier end lo [CLM

Vib

Ten hydro (NAS

Clor

[NAS/

Perf

NAS/

Radi

High ention (ECO)

Pres hyperv

(NASA

Desi operati control

NASA

NASA

Sure tra

Heigh

(UCRL

Low nel with [ARL-6

Syste

Desig

fuc.

Aircraft windshield resistance to bird impact, heat transfer in two-phase thermosyphon, and errors in mea-suring mean static pressures of moving fluid [DME/NAE-1967-33] 06 p0767 N68-15811 Low pressure test loop for measuring early develop-ent of subcooled void profile [QR-2] 07 p1095 N68-16463 Closed loop capacitive pressure transducer with ex-tended frequency response for very low pressure mea-[NASA-CR-61539] 07 p1000 N68-17064 Air and water flow in converging-diverging annular venturi tube with critical and near critical conditions at 07 p0989 N68-17105 Tonometer for equilibrating with different gas pres-(RAE-LIB-TRANS-1255) 07 p0951 N68-17130 Flow variables related to minimum pressure in circu-[NASA-CR-61576] 08 p1160 N68-17429 Determining equation of state of paraffin by thermal pressure measurement during heating by laser radiation 08 p1255 N68-17544 Pressure variation and pressure time curve determinations of expansion system for large bubble chamber operating in state of free oscillation

08 p1158 N68-18148 Pressure rise characteristics of liquid hydrogen dewar for homogeneous, normal-gravity quiescent, and zero-gravity tests [NASA-TM-X-1134] 08 p1261 N68-18196 Pressure and heat transfer on blunt concave and convex plates in hypersonic flow [NASA-TN-D-4367] 08 p1165 N68-18253 Pressure-time profile measurements on projectile hypervelocity impact by manganin wire pressure trans-[NASA-CR-93434] 09 p1440 N68-18495 ts on delta wing oscillating in Pressure measurements on delta wing oscillating in heave at high angle of incidence [RAE-TR-67241] 10 p1456 N68-20076 Load frequency distribution measurements on mili-(FB-71/1967/) 11 p1623 N68-20829 Device for measuring pressure inside sealed con-12 p1878 N68-22846 Approximation of ramjet exhaust plume effects on external pressure of nozale extension of X-15 aircraft [NASA-TM-X-1571] 14 p2336 N68-24614 Measurement of skin friction at low subsonic speeds by razor blade technique [ARC-R&M-3525] 14 p2181 N68-24792 High speed monorail rocket sleds applied to deter-ination of aerodynamic coefficients at high Reynolds [SC-DC-66-1967] 14 p2236 N68-25055 Multi-cell tank configuration stress data and discontinuity effects from pressure tests
[NASA-CR-61222] 15 p2448 N68-25858 Air compressibility effects on pressure generated from impact of ship hull on water surface 15 p2455 N68-26539 Pressure distribution, heave, and pitch, of oscillating cylinder in water as hydrodynamic boundary value problem [NSRDC-2375] 15 p2456 N68-26773 Pressure profile of Javelin rocket experiment and methods for reducing gas load 15 p2446 N68-26900 Tensiometric pressur hydrocarbon fuel vapor 16 p2748 N68-27856 Disphragm instrument for measuring fuel vapor 16 p2748 N68-27858 Versatile pressure recording system for direct otting pressure measurements in low speed wind tunnels [ARL/A-285] 16 p2665 N68-28273 Shock tubes driven by explosion of detonable ox-| ORNL-TM-2094 .17 p2867 N68-28860 Inlet and static pressure found to study degree of par-tial admission effect on axial flow turbine efficiency [FTD-HT-23-828-67] 17 p2962 N68-29070

Shock wave position determined from pitot pressure

17 p2874 N68-29261

Wind tunnel calibration of 30 deg included angle cone for determination of local values of Mach number, total pressure, and flow distribution [NASA-TN-D-4679] 18 p3074 N68-30127 Whitman equations for calculating relation between peak values of pressure and signal duration in sonic 19 p3197 N68-30873
Measurement calibration and system design analysis for measuring pressure differentials in rotating reference frame [TN-9] Multiple and rapid pressure measurements in wind annels using electronically controlled pneumatic [NASA-TT-F-11508] 19 p3260 N68-31913 Method and results of gas pressure distribution measurements on high speed diesel engine
[RTS-4437] 20 p3577 N68-32444 Explosion pressure measurements during ignition of methane-air, hydrogen-air, and acetylene-air mixtures [SMRE-TRANS-5486] 20 p3608 N68-32571 Superconducting bolometers for measuring very low NASA-CR-1120) 20 p3478 N68-33022 Differential equation for momentum transformations occurring in transient fluid flow between approach and throat pressure tap planes of venturi tabe.
[WAPD-TM-735] 20 p3465 N68-33142 turi tube 20 p3465 N68-33142 Pitot pressure measurements with rapidly traversing robes in wake of sphere in diverging hypervelocity (SUDAAR-3411 -22 p3860 N68-35421 Base pressure measurements at angle of attack for spherically blunted cones at hypersonic speed [NASA-TN-D-4800] 22 p3800 N68-35668 Measurement of blood circulation pressure and development of pulmonary edema in uremia [NASA-TT-F-1 | 904] 23 p3999 N68-36755 Response of narrow bore pressure measuring system to step and oscillatory pressures [RAE-TR-68010] 23 p4064 N68-37007 Materials, dimensions, and construction of isopiestic balance for studying solids and liquids
[LA-3939-MS] 24 p4256 N68-37546 PRESSURE MICROPHONES PRESSURE OSCILLATIONS os p0725 N68-14685

Mechanisms causing heat driven press tions in gas-thermoacoustic generator desig [SC-CR-67-2759] 05 p0725 Role of diffuser in spurious pressure fluctuations in

wind tunnels [NPL-AERO-1237] 10 p1518 N68-20398 Partial differential equation of perturbation velocity solved for unsteady flow downstream of oscillating wind tunnel walls [D1-82-0703]

11 p1682 N68-20758 Unsteady heat transfer from closed gas system to plane metal surface with periodic pressure and temperuture oscillations [NASA-CR-72323] 11 p1806 N68-21686

Selected band cross correlation analysis of fluctuat-g pressures under turbulent boundary layer flow NASA-CR-1066] 13 p2052 N68-23482 ing pressures under [NASA-CR-1066]

Succession of synoptic processes used to predict ressure system movements and to determine trajectoers of cyclones 22 p3908 N68-35995

Response of narrow bore pressure measuring system to step and oscillatory pressures [RAE-TR-68010] 23 p4064 N68-37007

Disturbances caused by shock wave interactions with entropy discontinuity in turbulent flows [NASA-CR-98035] 23 p4052 N68-37232

Analytic solution for acoustic field in closed space behind rectangular, simply supported plate excited by boundary layer turbulence 24 p4348 N68-37677

PRESSURE PULSES

Numerical simulation of shock tube flow [UCRL-70443] 02 p0199 N68-11452 Gas dynamic model for response of burning propel-nt surface to pressure pulses induced by shock waves DR-71 04 p0594 N68-13223

Cardiovascular system parameter and property effects on transmission characteristics of sounds and

Pressure pulses [NASA-CR-92999] 07 p0943 N68-16389 Momentum conservation approach for calculating stenuation of thin pressure pulses in distended materi-07 p1038 N68-17118 (SCL-DR-67-115)

Elastic behavior of canine nortae subjected to small Sinusoidal pressure signals [NASA-CR-94696] 14 p2200 N68-24915

Feasibility of using solid metal shields for protecting cylindrical shells from effects of pulse loading 18 p3182 N68-30653

Effect of gas in liquid-gas mixtures on pressure surges due to flow rate changes [SF-920] 20 p3459 N68-32421

Response of narrow bore pressure measuring system to step and oscillatory pressures [RAE-TR-68010] 23 p4064 N68-37007 23 p4064 N68-37007

PRESSURE RECORDERS

Standardization proposal for methods and instru-mentation to measure aircraft sonic booms [ISL-T-23/67] 06 p0844 N68-15270 nic booms 06 p0844 N68-15270 Mushroom shaped transducer for recording pressure in shock tube

07 p0999 N68-16867 Versatile pressure recording system for direct otting pressure measurements in low speed wind tun-[ARL/A-285] 16 p2665 N68-28273

PRESSURE RECOVERY

PRESSURE REDUCTION

Wind tunnel tests of mixed-compression axisymmetric inlet system to determine bleed mass flow ratio, pressure recovery and pressure distortion INASA-TN-D-4557] 13 p2143 N68-23354

Geometry and Reynolds number effects on deflec-tion of plane turbulent jets by convex walls and mechanism of high pressure recovery in convex-walled ampüfiers [NPS-59SL8061A] 22 p3859 N68-35264

Rapid depressurization and critical combustion chamber geometry extinction characteristics for composite propellants [NASA-CR-66483] 01 p0127 N68-10046 01 p0127 N68-10046

Generalization of laws governing heat transfer and pressure drop during transverse flow of gases in contact with finned tube banks 02 p0290 N68-11748

Bellows configurations design, pressure loss, and vibration tests to minimize pressure drop and improve gas and liquid flow in spacecraft high velocity duct (NASA-CR-91525) 04 p0565 N68-13484

LUPO program for predicting steady state tempera-ture, flow rate, void fraction, and pressure drops in closed pressurized water loop with or without boiling [EUR-3643.E] 07 p1094 N68-16337

Hypoxia effects on vestibular dynamics in rats at low mospheric decompression 09 p1281 N68-18913

Behavioral and physiological changes in chimpan-zees after high altitude decompression 10 p1470 N68-20549

Pressure drop and flow distribution experiments on

packed beds of spheres using water tunnel [AAEC/TM-398] 13 p2053 N68-23690 Numerical analysis of real gas effects in depressuriza-

tion of air storage cylinder [REPT.-2693] 16 p2641 N68-27097 Experimental and analytical study of pressure drop oscillations in forced convection flow with boiling [NASA-CR-83303] 16 p2795 N68-27637

Computer program for computation of heat transfer and pressure reduction in regenerative pebble bed heat exchangers (ARL/ME-290] 18 p3188 N68-30291

Pressure decay rate in free piston shock tunnel reser-IVKI-TN-401 18 p3064 N68-30673

Feasibility of differential ion pumping concept for reducing pressure during vacuum deposition of thin [NASA-CR-95949] 19 p3287 N68-32187

Outer casing blowing and bleeding and undistorted inlet flow for improved performance of high aspect ratio transonic rotor [NASA-CR-54588] 20 p3578 N68-32906

Effect of lower body decompression on blood presure and lung capacity in five patients with lung con-NASA-TT-F-11903] 23 p3997 N68-36356

Vent holes for reduced carbon dioxide pressure generation during foaming of polyurethane resin [GEPP-11] 23 p4068 N68-36732

Total pressure loss calculations for curvilinear dif-(FTD-HT-23-1052-67) 24 p4249 N68-38450 PRESSURE REGULATORS

FX

915

ting

653

421

dem

007

dro-

270

sure

867

rect

273

354

flec-

264

046

and

748

and

484

s in

337

low

913

549

690

iza-

097

irop

637

sfer

291

ser-

673

for

187

rted

906

res-

356

ште

732

dif-

450

ire

Computer controlled hermetically sealed vacuum glass valve [UCRL-50317] 08 p1143 N68-18041 tor was tube for nuclear Pressure regulated : power reactor control [NASA-TT-F-11373] 08 p1207 N68-18174 fluid storage and supply Control design for cryos 13 p2046 N68-24144 Performance test data on pre [NASA-CR-95224] 16 p2671 N68-27901 Functional and enviror 3/4-inch shutoff valve for hydrogen storage bottles [NASA-CR-95266] tal testing of 6000 paig, ng high pressure gaseous 16 p2672 N68-28091 Proving tests on three power packs for artificial in teristics of pressure regulator [RAE-TR-68135] prototype carbon dioxide imbs and operating charac-23 p3995 N68-37258 PRESSURE RELIEF VALVES
U RELIEF VALVES PRESSURE SENSORS atic sensitive elements for absolute gas pressure (FTD-HT-67-23) 01 p0063 N68-10246 Orifice type pressure probe in nearly free molecule [NAL-TR-136] 01 p0052 N68-10779 Impact pressure probes used to measure velocity profiles for rarefied subsonic gas streams
[D1-82-0656] 02 p0197 N68-11087 Quasi-static calibrations for determining quartz, piezoelectric type, pressure transducer sensitivity from 20 to 477 deg & (NASA-TM-X-1479) 02 p0214 N68-11867 ated service life of strain gage pressure transd [NASA-CR-91117] 03 p0341 N68-11963 Ultrasonic boiling detector installation in nuclear test loop [NYO-3622-8] 03 p0344 N68-12526 Piezoelectric pressure probes for measuring plasma end losses from theta pinch [CLM-R-70] 04 p0552 N68-12863 LM-R-70) Vibrational sensitivity, ar transducer d calibration of piezoelec-ISL-T-7/67] 06 p0844 N68-15272 Temperature and liquid-level sensor for liquid hydrogen pressurization and expulsion studies [NASA-TN-D-4339] 06 p0847 N68-15893 Piezoelectric pressure pickups for measuring pressures of gases and liquids behind incident and reflected shock waves, and detonation studies dies 07 p0975 N68-16866 Mushroom shaped transducer for recording pressure in shock tube 07 p0999 N68-16867 Closed loop capacitive pressure transducer with ex-tended frequency response for very low pressure mea-[NASA-CR-61539] 07 p1000 N68-17064 Performance evaluation for NRX-A2 reactor instru-tentation kit 08 p1203 N68-17296 [NASA-CR-91273] Radiation effects on strain gage pressure transducers (TID-24144) 08 pl 176 N68-17392 High resolution continuous cation for radiosondes flows on [ECOM-5145] s pressure sensor modifi-on balloons 09 p1367 N68-18286 Pressure-time profile meass ypervelocity impact by manga urements on projectile [NASA-CR-93434] 09 p1440 N68-18495 Design and test data of pressure switch for thrustor peration detection of lunar excursion module reaction NASA-CR-93767) 10 p1505 N68-19701 Systems and reliability engineering for automatic pressure transducer calibration system [NASA-TM-X-53678] 10 p1530 N68-20044 Design and tests of 100,000 pai eddy current pres-ure transducer for hostile environments [UCRL-50341] 12 p1878 N68-22893 Height and period in ment of deep ocean IUCRL-50379] 14 p2261 N68-25454 e measurements in hypersonic wind tun-le reluctance pressure transducers 16 p2659 N68-27078 Low pressure r nel with variable [ARL-68-0005] Performance characterist methods for differential press [NASA-TM-X-52448] cs and error reduction ure transducer 16 p2660 N68-27233

Wind tunnel calibration of conical pressure probe over range of Mach numbers to determine flow field data for X-15 nirplane [NASA-TN-D-4678] 17 p2872 N68-28801 nce tests on static pressure probe at supersonic speed [ARC-29558] 18 p3077 N68-30616 Design and fabrication of high temperature, high equency response, transpirationally cooled pressure mor for combustion instabilities, and cryogenic pres-18 p3078 N68-30627 uency response of piezoelectric pressure tran 19 p3278 N68-31548 INASA-TT-F-118131 Accuracy capabilities of ca switch /Caips/ checkout system [NASA-TM-X-53729] of calibrationable press 19 p3279 N68-31601 Multiple and rapid pressure measurements in wind annels using electronically controlled pneumatic [NASA-TT-F-11508] 19 p3260 N68-31913 New concepts and feasibil ectro-optics, lasers, and se ity study of application of NASA-CR-96717] 21 p3695 N68-34734 ing of thin film oxygen luct devel partial pressure sen NASA-CR-11821 22 p3875 N68-35149 Use of solid state or sem crease accuracy, range, as balances and pressure tran [BRL-MR-1928] ctor strain gages to in-iffness of wind tunnel 22 p3876 N68-35247 perature, pressure, and flow to study rotating machinery 23 p4060 N68-36021 direction sensing prob (NASA-TN-D-4816) Development, construction, and functioning of presure transducer with strain wires for high sensitivity, [DLR-FB-68-53] 23 p4061 N68-36506 NT SPACE SUITS Instruction manual for is nance, and repair of bioinstallation, operation main-poinclator suit system life sup-communication links 04 p0461 N68-13172 port system consoles and co [NASA-CR-66441-A] Physiological effects of oxygen flow rates and ambient temperatures on pressure-suited subjects performing work in altitude chamber
[NASA-CR-93256]

08 p1129 N68-17590 Pressure suits and backle in simulated lunar gravity [NASA-TN-D-4464] ds effects on locomotion 10 p1477 N68-20354 pressure suits with par for manned space flish Development of med sive pressurization mech r manned space flight 10 p1478 N68-20348 kage for persom working [NASA-CR-92056] 12 p1828 N68-22326

Effects of simulated luna while wearing pressure suits [NASA-CR-1 [02] r gravity on metabolic rates 17 p2829 N68-28833 Human water losses by evaporative perspiration in ressure suits 21 n3634 N68-33926 PRESSURE VESSEL DESIGN

Vessel and shell fabrication tructural models, and cryo on, prototype thermal, and [NASA-CR-92118] 13 p2074 N68-23659 Cryogenic storage system and pressure vessel design (NASA-CR-92119) 13 p2075 N68-23792 Reflection of gaseous tion to pressure vessel de [KAPL-M-7026] on waves and applica 23 p4050 N68-36884 PRESSURE VESSELS

d sensitivity to neutron embrittle-sure vessel fabrication 01 p0093 N68-10483 eels with reduced a (EURAEC-1883) Fatigue crack growth ra es for unirradiated pressure KAPL-P-33621 01 p0078 N68-10897 Low cycle creep fatig conducted at 350 deg C [TRG-1537/C/X/] re tests of pressure vessel steel 01 p0078 N68-10904 Warm prestressing of pres [KAPL-P-3350] e vessel steels 01 p0079 N68-10918 Empirical approach to estimating reactor vessel amage from severe nuclear escursion (GEAP-5163) 03 p0370 N68-12100 Radiation effects and neutron embrithement in high strength and pressure vessel steels used as reactor structural materials [NRL-1808] 03 p0370 N68-12175

PROMABILETY PRESSURE VESSELS Cylindrical regenerated high pressure clumber design [NOLTR-67-121] 03 p0411 N68-12262 Ultrasonic imper pressure vessels (CVNA-288) ted power rea 03 p0375 N68-12466 cts on fistigue properties of resacts 03 p0376 N68-12556 Neutron irradiation effects o steels for reactor pressure vesse (SWRI-1228-P-4-28) Test proces ing fracture ton [COO-1477-81 03 p0354 N68-12746 Pressure test and fail nalysis for reactor pressure [WAPD-TM-640] 03 p0382 N68-12767 Burst test tensile s haracteristics of cryon strengths, and premise strain senic boron filament wound con-[NASA-CR-72330] 05 p0747 N68-14371 Cryogenic proof testing g to detect small defects in vessel taskage, and crack Propagation charact NASA-CR-658111 05 p0676 N68-14576 ctural designs for Cryogenic insulation pacecraft using liquid pr 05 p0750 N68-14654 Insulation system for a NERVA and Rover project ar ground test module -05 p0750 N68-14657 nconel alloy 718 for naterials 06 p0854 N68-15358 High strength steels and is sclear reactor pressure vessel of Chemical composition, tensile properties, and frac-ture toughness of steel pressure vessel to assess crack propagation in burst-type failure [NRL-MEMO-1827] 06 p0854 N68-15553 m of stresses at opening in 07 p108E N68-16180 Tensile strength properties of glass, boron, and gra-phite filament wound resis composites and liners for cryogenic pressure vessels [NASA-TN-D-4412] 07 p1012 N68-16623 07 p1012 N68-16623 Fatigue crack propagat vessel steel temper embr on and fracture of pressure NRL-MEMO-1822) 07 p1031 N68-16817 vessels (EURABC-1892) 07 p1009 N68-17004 Crack propagation and fract ater and pressurized water a are mechanics of boiling aclear reactor pressure INRL-6598] 08 p1253 N68-17840 Duta availability on mechanical properties and frac-ire mechanics of irradiated materials for water cooled NRL-66251 08 p1206 N68-17942 Tonsile properties of sele or pressure vessel applicat in for nuclear reac-[NRL-6649] 09 p1351 N68-18415 Design, construction, instrumentation, and testing of 1/11.5 scale model of spherical prestressed concrete TRG-1204/R/, PT. 1] 09 p1442 N68-18754 Tables and graphs detailing tests of structural behavior and safety of spherical prestressed concrete TRG-1204/R/, PT. 2) 09 p1442 N68-18755 Instrumentation, ethods for determ techniques, and test and stability and safety

of spiterical prestressed LTRG-1204/k/, PT. 31 09 p1442 N68-18756 Concrete mix design and casting procedure, contrests, and cable materials for apherical prestresses (TRG-1204/R/, PT. 5)

09 p1443 Non-18758 Cracks in scale mod of opherical prestress tring ultimate testing (TRG-1204/R/, SUP. 1) 09 p1443 N68-18759

ORNL-NSIC-211 09 p1375 N68-18873 Synergistic effects of a pressure vessel materials [NRL-6620] distion and street on (- 10 p1605 N66-19976 tric bodies of reven

SUI

mi

PRIN

B

INA

PRIM

NTNT

C

Si weig plica NA

No ness.

Raman

Re

M

[ARI

Sil

for p

He

CONV

11

chara (NAS

PRINTI

Fla volvis flexib [AD-

Ma trics,

tion [DM1

Use

PRIME

PRIME

PRESSURE WAVES ratonic method for nondestructively detecting ion induced embrittlement in pressure vessel 11 p1703 N68-20950 [BNWL-SA-1467] Fracture toughness and yield stress of four-inch thick plate steel for pressure vessels
[COO-1477-9] 11 p1712 N68-21002 Hydrogen accumulation rates within thick walled tubes of ron chromium and iron chromium inchel alloys exposed to high pH high temperature pressurated water containing dissolved hydrogen [WERL-1114-3] Structural behavior of thick steel plate pressure ves-is for water cooled reactors sels for water or (ORNL-4176) 11 p1742 N68-21385 Metallurgical aspects of stress relief annealing of nuclear reactor pressure vessels [EURAEC-1762] 11 p1743 N68-21631 Crack propagation in aluminum notched tensile and ressure vessel specimens cyclically loaded at ryogenic temperatures 11 p1716 N68-21768 Elastic pressure distortion of volumes of compressi-lity apparatus 13 e2050 N68-24209 Evaluating irradiation damage in Halden boiling water reactor pressure vessel materials [HPR-91] 14 p2288 N68-24500 Relationship between use of pneumatic loaders and electrification of ammonium nitrate electric blasting (BM-RI-7139) 14 p2336 N68-24748 Glass, boron, and graphite-filament wound resin composites and liners for cryogenic pressure vessels [NASA-TM-X-60524] 14 p2278 N68-25337 Neutron spectra influence on radiation effects in car-on steel pressure vessels (UJV-1931) 17 p2932 N68-28938 Fracture strength of nonirradiated and irradiated reactor pressure vessel carbon and alloyed steels [WAPD-TM-565] 17 p2901 N68-28987 Reactor stability, xenon induced flux oscillation, core power distribution and reactor kinetics for presurted water reactors
[BNL-12390]

17 p2940 N48 2004 Destructive and nondestructive tests of organic cooled heavy water reactor pressure tubes [EUR-3929.E] 18 p3116 N68-30289 Stresses and loads on radial notzles in spherical and cylindrical shells to study reinforcement of openings in Pressure vessels [NASA-CR-95896] 18 p3181 N68-30578 Pressure decay rate in free piston shock tunnel reser-

Procedures and equipment used in ultrasmic measurement of wall thickness in pressure vessels (LXN/NP-680527) 19 p3284 N68-31428

Creep response of ductile and brittle materials used n construction of bursting disk safety devices for pres-ure vessels 20 p3605 N68-33349

Cyclic and sustained load flaw growth properties of titanium alloys for pressure vessels [NASA-CR-92231] 21 p3704 N68-34399

PM-2A reactor pressure vessel material notch discitility and tensile property evaluation [NRL-6739]

23 p4104 Nec-2730 Manufacturing technology for cryogenic stretch formed helium pressure vessels [NASA-CR-98041] 24 p4261 N68-37609

Fatigue-crack growth rate studies of low alloy pres-[KAPL-P-3439] 24 p4267 N68-37861

U ELASTIC WAVES

PRESSURE WELDING

NT DIFFUSION WELDING

NT ULTRASONIC WELDING

Automatic butt welding of pipes by means of mag-netically driven rotating arc [GAW/EE/67A-2] 10 p1534 N68-19908 Pre-pressure resistance spot welding of stainless steel

fuel tank [S&T-MEMO-9/67] 18 p3082 N68-30769 Pre-pressure jig welding of stainless steel fuel tank, and welding fixture design [S&T-MEMO-9/67] 21 p3697 N68-34100 21 p3697 N68-34100

PRESSURIZED CABINS

Structural analysis of airplane pressure cabins with reinforcing ribs and stringers

(REPT.-19)

03 p0422 N68-12299

Fire extinguishing systems, and protective clothing for spacecraft cabin simulator personnel 09 p1288 N68-18747

Fire safety measures for hyperbaric diving simulators

09 p1288 N68-18749 Computer calculation of spacecraft compartment ynamic pressure with orifices and outgassing materials

[NASA-TM-X-63133] 10 p1514 N68-19704 PRESSURIZED WATER REACTORS

Maximum credible boron release from core surfaces of pressurized water reactor with chemical shim [EUR-3609.E] 01 p0095 N68-10862 Development and operation of pressurized water

[WAPD-MRP-120] 03 p0372 N68-12259

Plutonium enriched fuel use in pressurized water reactor systems through design, fabrication, and opera-tion of partial core of plutonium oxide uranium oxide in Saxton reactor [WCAP-3385-12] 04 p0542 N68-13870 Plutonium use as fuel for pressurized water reactor

05 p0691 N68-14001

In-core and out-of-core measurements on startup de-tectors for pressurized water reactors [BAW-3647-5] 05 p0694 N68-14494

Fracture tests of primary coolant piping for presurated water and boiling water reactors
BMI-1817) 05 p0748 N68-14516 (BMI-1817)

LUPO program for predicting steady state tempera-ture, flow rate, void fraction, and pressure drops in closed pressurized water loop with or without boiling [EUR-3643.E] 07 p1094 N68-16337 Zirconium alloy clad uranium dioxide fuel bundles for use in pressurized water, boiling water, and organic liquid cooled reactor systems [AECL-2928] 07 p1033 N68-17103

Crack propagation and fracture mechanics of boiling ater and pressurized water nuclear reactor pressure

08 p1253 N68-17840 Thermal stability of reactor fuel rods in narrow annu-lar coolant channel [AERE-R-5601] 09 p1376 N68-18897

Analytical description of thermal and hydraulic conditions in core and fission product behavior following boiling water and pressurized water reactor accidents [BMI-1825] 12 p1911 No8-22914

Economics and potentials of CANDU reactors [AECL-2795] 12 p1913 N68-23007

PH reactivity effect during operation of closed cycle pressurized water [WCAP-3696-6] reactors 13 p2105 N68-23241

Plutonium as fuel in nuclear reactors, fuel rod preparation, Panther code modification, and critical facility adaptations [EURAEC-1885] 13 p2106 N68-23265

Heat transfer and fluid flow characteristics of pressurised water react [WW-015-R-128] 16 p2710 N68-28243

Reactor stability, xenon induced flux oscillation, core power distribution and reactor kinetics for pressurized water reactors [BNL-12390] 17 p2940 N68-29314 17 p2940 N68-29314

d spatial oscillations in Free-running xenor [WCAP-3680-20] d water reactors 101 18 p3120 N68-30774

Supercooled pressure gradient approximations in ressurized water reactor systems following primary cooling system rupture [IDO-[7243] 19 p3313 N68-32038

Computer program for flow transient analysis of pressurized water reactor during flow coastdown [WAPD-TM-428] 19 p3314 N68-32126

Nondestructive and destructive testing of reactor core Zircaloy pressure tubes and control rods to evaluate irradiation performance of CVTR components [CVNA-289] 20 p3533 N68-33316 20 p3533 N68-33316

Test data on commercially available protective coatings for containment buildings of boiling and pressurized water reactors [IN-1169] 24 p4293 N68-37515 24 p4293 N68-37515

NT FUEL TANK PRESSURIZATION

Comparison and evaluation of helium pressurization and Radiflo methods of leak rate determination [SC-TM-66-2614] 03 p0383 N68-12165 Inflation procedures, aerostatic gases, and structural materials for pressurized balloons [CNES-NT-8] 12 p1815 N68-22115 PRESTON TUBES
U PITOT TUBES
U SPEED INDICATORS

PRESTRAINING U PRESTRESSING

PRESTRESSING

Warm prestressing of pressure vessel steels [KAPL-F-3350] 01 p0079 N68-10918

Seismic wave modeling experiments involving etonation of radial explosive sources in plates of glass and Plexiglas prestressed to various static prestress [SRI-PGU-6099] 06 p0919 N68-15291

Design, construction, instrumentation, and testing of 1/11.5 scale model of spherical prestressed concrete TRG-1204/R/, PT. 11

09 p1442 N68-18754 Tables and graphs detailing tests of structural behavior and safety of spherical prestressed concrete pressure vessel [TRG-1204/R/, PT. 2]

09 p1442 N68-18755 Instrumentation, tensioning techniques, and test ethods for determining structural stability and safety spherical prestressed concrete pressure vessel

of spherical prestressed [TRG-1204/R/, PT. 3] 09 p1442 N68-18756

Concrete mix design and casting procedure, control tests, and cable materials for spherical prestressed concrete reactor pressure vessel [TRG-1204/R/, PT. 5]

09 p1443 N68-18758 Cracks in scale model of spherical prestressed concrete pressure vessel during ultimate testing [TRG-1204/R/, SUP. 1]

09 p1443 N68-18759 Ultimate flexural bond in beams prestressed with

high strength st [REPT.-309.1] 11 p1798 N68-21412

Materials selection, structural geometry, proof sea-ing and statistical screening, prestressing, and system energy as tools for designing optimum trusses and other high performance structures [NASA-CR-1038] 13 p2159 NS8-23399 13 p2159 N68-23399

Effect of room temperature prestrain on tensile properties of intermetallic compound NiTi in temperature range 150 to 370 deg C [ARL-MET-50] 16 p2684 N68-28150 16 p2684 N68-28150

Product development of beryllium alloy prestressed fasteners for use in Saturn project [NASA-CR-61236] 17 p2894 N68-29276

Prestressing applied to glass fiber reinforced resin laminates to improve tensile strength [RAE-LIB-TRANS-1292]

20 p3508 N68-32272 Notch brittleness of plates and bars after prestressing, and tests to fracture [NYO-2394-32] 22 p3971 N68-35223

TESTS

NT PRESTRESSING

Effects of thermal pretreatment and aluminum nitride on austenite grain size [UCRL-TRANS-10228] 14 p2271 N68-25071 Developments and trends in gold and silver electroplating and pretreatment processing techniques 20 p3491 N68-3342

U PRESTRESSING
U TWISTING

PREVENTION
U ACCIDENT PREVENTION
U CORROSION PREVENTION
U FIRE PREVENTION

ICE PREVENTION

PRIMARY BATTERIES
NT ALKALINE BATTERIES
NT DRY CELLS
NT MAGNESIUM CELLS
NT METAL AIR BATTERIES
NT THERMAL BATTERIES

Electrolytes, anodes, and cathodes for high energy ensity battery with 200 watt hours per pound of total battery weight [NASA-CR-72364] 08 pl118 N68-17299

Chronology of storage battery and primary cut-developments, and state-of-the-art survey. 17 p2810 N68-28715

Performance characteristics and predicted develop-ment of silver zinc primary and secondary batteries 17 p2811 N68-28721

Combination Cerenkov and and range scintillator for prote cosmic ray spectra betwee MeV/nucleon

MeV/nucleon [NASA-CR-92991]

Upper limit of anti [NASA-CR-93476]

Development and performance predictions for pri-mary metal/air batteries

Performance prediction on primary hydrogen ox-ygen fuel cells for spacecraft power supplies 17 p2812 N68-28730

Electrical noise sources in primary and secondary

17 p2812 N68-28726

22 p3807 N68-35123

d scintillation detector, ston and helium nuclei sen 100 and 2000

07 p1076 N68-16723

ent in cosmic rays 09 p1398 N68-19358

nalysis for detection of

15 n2555 N68-26594

EX 918 PRIMARY COSMIC RAYS NT SOLAR COSMIC RAYS Primary coamic radiation variations effect on meson and nucleon components at ground level studied using sounding balloon data
[REPT.-2/1959] 04 p0503 N68-13634 291 gof 754 rete 755 Intensity and time variations of primary cosmic ray electrons measured with balloon borne Cerenkov telescope and lead scintillator sandwich detector [NASA-TM-X-63162] 11 p1780 N68-21534 Atmospheric lumi cosmic ray showers 756 trol sed 758 sed 759 with 412 399 150 sed 276 272 223 142

sin

fter

171

D

99

ell

15

90

21

Balloon sounding data of primary cosmic ray elec-tron component evaluated for long term time variations INASA-CR-857401 16 n2753 N68-27552 Antinucleon component of the primary cosmic ray 20 p3582 N68-33381 PRIMATES NT CHIMPANZEES NT HUMAN BEINGS NT MONKEYS Conditioned suppression technique for studying X ray stimuli in primates
[ARL-TR-67-20] 03 p0304 N68-11942 Spacecraft system to support two primates in weightless, earth orbital, extended flight in Apollo Ap-plications Program /AAP/ NASA-CR-66307] 05 µ0743 N68-14617 Metabolism data from chemically defined low residue diet for small primates [NASA-CR-91904] 06 p0776 N68-16061 Norepinephrine and serotonin effects on sleep, alert-ess, and temperature regulation in primates 14 p2198 N68-24867 tadiation effects and radiobiological response in hu-ns and primates for space missions 15 p2392 N68-26131 Systems engineering data and design specifications for Biosatellite active primate simulator [NASA-CR-95217] 16 p2638 N68-27694 Behavior analysis of conditioned suppression of audi-ry threshold in primates (ARL-TR-68-6) 20 p3406 N68-J2695 Match to successive sample device system for ad-inistering problems to primates and recording responses 20 p3411 N68-32814 PRIMERS (COATINGS) Silane coupling agents used as primers, and additives for polyurethane bonding [NASA-TM-X-53676] 04 p0526 N68-13510 Heat effects on corrosion conversion coatings on metal [CCL-246] resistance of chromate surfaces 11 p1712 N68-21021 PRIMERS (EXPLOSIVES) I amp. I watt, no fire, dual circuit, four pin high pressure squib with uniform output and initiation characterists for high temperature environments [NASA-CR-93182] 08 p1120 N66-17567 PRINTED CIRCUITS Flat flexible cables for wiring electronic systems in-volving printed circuit boards, conventional wiring, and flexible circuity [AD-660889] 03 p0329 N68.12178 Manufacture of microminiaturized resistors, dielec-trics, and conductive connectors by reactive evapora-06 p0814 N68-15216 [DMWF-FB-W-67-07] for set of computer programs used to on of printed circuit boards 07 p0974 N68-16714 User manual for set of co aid in construction (SC-M-67-639) Multiconductor board /description/ (PB-176904) 10 p1507 N68-20412

Magnavox model B receiver modifications [CM-R15-2.4] 10 p1502 N68-26418 Effect of clothing on control of microorganism shedding from worker constructing printed circuit board anomaby (NASA-CR-94343) 12 p1828 N68-22412 12 p1828 N68-22412 Manual for compa circuit boards [K-1736] ed design system of printed 12 p1853 N68-22622 dysis of circuit card stching layout (SC-CR-67-2862) 12 p1854 N68-22906 Computer program /PUZZLE/ for use in solution of topological problems related to manufacture of etched printed circuit bounds [UCRL-17814] 12 p1850 N68-22926 12 p1850 N68-22926 Ultrasonic cleaning technique for removal of epoxy conformal coatings on printed wiring assemblies [ECOM-2894] 15 p2436 N68-26317 m for electronic equipment used in telemetry and co [SAMSO-TR-68-159] munications 15 p2436 N68-26377

Laboratory manual on fal tolerance multilayered print merical control equipment [SCL-DC-67-80] brication process for close od wiring boards, using nu-16 p2631 N68-27070 Design, packaging, circuitry, and testing of solid state superhigh frequency transmitter using step recovery diode frequency multiplier [NASA-CR-61864] Development and evaluation of four printed circuit connectors for microassemblies [ECOM-00294-F] 18 p3045 N68-30027

18 p3045 N68-30027 Screen printed cadmium sulfide layers used as [NASA-CR-66669] 21 p3668 N68-34253 PRINTERS NT TELEPRINTERS

Performance and operating characteristics of transforming printers [USAETL-TR-40] 21 p3694 N68-34618

PRINTERS [DATA PROCESSING] Map projections in digital computer printers [AD-659457] 01 p0035 N68-10680 Development and tests of cor [FTD-HT-66-493] nputer output printer 01 p0035 N68-10720 Design criteria for mult [F-6161-1] 02 p0171 N68-11541 Effectiveness of line printer directed by DOT-PLOT computer program 13 p2036 N68-24105

Punch card printer for wiring harness documentation 23 p4025 N68-36319 [NASA-CR-97150]

PRINTING Unlimited mathematic, cartographic, and call-graphic typography repertory considered for computer and cathode ray printer [NWL-TR-2101] 05 mb614 Men Production methods for contact prints in emulsions or chromium coated glass plate [NASA-CR-92103] 13 p2074 N68-23731 Information recording by electron beam printing 20 p3482 N68-33408

Fiber optics in cathode ray tube recorders and displays 20 n3482 N68-33409

PRINTOUTS

Enumeration of linear graphs and connected linear graphs by Maniac 2 electronic computers [LA-3775] omputers 05 p0683 N68-14323 Time shared digital computer provides output in switch form [MAC-TR-38] remote terminal which 06 p0807 N68-15372 Mechanization of office procedures for compu-terized tape control of photocomposition machines [PB-176192] 08 p1151 N68-17283 rs - computer printouts Remote cor of survey data [TR-67-679-1] 10 p1504 N68-20245

Algorithmic method for print out of meteorological charts by computers [M-7128] 20 p3443 N68-32778 20 p3443 N68-32778 Digital control circuit and code converter design for fast binary data printout [DP-1154] 24 p4234 N66-37433

Priority model concept for flight operations planning of manned spacecraft (MTR-256) 03 p0414 N68-12227

PRISMATIC BARS

Successive approximation procedure for solving lastic-plastic problem for torsion of solid primustic bar made of strain hardering material [NASA-TN-D-4391] 07 p1092 N68-17045 Monte Carlo solution for torsion problem of prismatic bars [UCRL-70600] 14 p2355 N68-24591 tic bar using deformation iffness matrix 17 p2921 N68-28986 Mass matrix for prismatic function in formulation of stiffs [KAPL-M-6913] Longitudinal vibrations of prismatic rods fabricated from material of different modulus 18 p3182 N68-30661

PRISMS NT PRISMATIC BARS

Prism face etch patterns for polar characterization of zinc oxide crystals [RRE-TRANS-174] 12 p1956 N68-22381 Parameters of reflected polarized light by terrestrial FTD-HT-67-1721 15 p2510 N68-26584

RIVATE AIRCRAFT
U GENERAL AVIATION AIRCRAFT PRIVATE AVIATION U CIVIL AVIATION
U GENERAL AVIATION AIRCRAFT

PROBABILITY DENSITY FUNCTIONS
NT NORMAL DENSITY FUNCTIONS
NT PEARSON DISTRIBUTIONS
NT RAYLEIGH DISTRIBUTION
NT WEIBULL DENSITY FUNCTIONS

System for measuring first and second order amplitude probability densities of signals and noise in understorates according [NRL-6522] 02 p0239 N68-11092

Convergence rates for empirical flayes two action ontinuous problems 03 p0359 N68-12035

Statistical analysis of extended reradiator siting er-rors in high frequency radio direction finders [DSD-R-161] 04 p0476 N68-13052 Probability density functions for products of bivariate Gaussian waves of variance and covariance [RAE-TR-67233] 06 p0797 N68-15308

ns for probability distribution gurstion output 06 p0799 N68-15599 Extension of expression of signal processing config [IDA/HQ-67-6496] on of chi-square statistics

Probability density function applied to goodness of fit tests [NASA-TM-X-63100] 07 p1013 N68-16400

Stochastic approximation probability density functions of [SC-DC-67-2]18] andom variable 08 p1192 N68-17275 Nonparametric techniques on, probability density, and for probability distribu

for life quality [NASA-CR-93483] 09 61359 N68-18499 Theory of linear est problems of smoothing estimation and applicability to ng, filtering, extrapolation, and

NASA-CR-62053 11 p1733 N68-21837 FORTRAN program for ning Lorentz trans-

ORO-2504-1111 12 p1934 N68-22691 Error probability cal tion of data transmission BMWF-FB-W-68-22] in block synchroniza-

14 p2221 N68-24686 ative distribution func-variables 15 p2492 N68-26294 Probability density and c tion tables for quadratic for (AFOSR-68-0793)

Density estimation by o nal series 15 p2494 N68-26544 for estimating probability

16 p2669 N68-27725 Structural design of elastic I lies to minimize weight action over structural for given probability density feeliability under load condition 17 n2981 N64-28760

Application of bive al offet circle promona predictions bility tables to geophysical p ICAL-XM-2464-G-1, V. 3 17 p2906 N68-29386

memory optimal filters ability density function 21 p3722 N68-33829 ear and no for computing condi INASA-CR-965791 ation in signal analysi 22 p383 | N68-3482

SUB

don

C

deci (Oil

AR

RE

PEAC [UC

(FE

C

R

P

grap mod [NA

and [NA

Si

Pr limit cles

[DI

prog

and corr

0

Arici (EU

St fore

Pr (P-3

Pr

Statistical data correlation and probability density metion approach to accelerated life testing of elec-onic squipment 24 p4235 N68-37558 Parameter probability density distributions for gaussian pulse and radio signals 24 p4223 N68-37697 PROBABILITY DISTRIBUTION FUNCTIONS Mathematical model and algorithm for multichannel neuring system with irregular group arrival of de-01 p0042 N68-10306 Probability distribution in studies of riff shuffles as Markov proces [ORNL-4156] 01 p0084 N68-10478 Probability distributions for sigma hyperon-two pions from sigma resonance/1660/decay [UCRL-17682] 01 p0114 N68-10837 Statistics of switching time jitter for tunnel diode threshold crossing detector [NASA-CR-90306] 02 p0190 N68-11039 Order statistics arising from independent binomial [AD-659164] 02 p0226 N68-11055 Probability distributions used to determine physics ability distributions used the state of the KFK-542] Mellin transforms used to find probability distribu-tion of products of beta variables (TR-50) 02 p0230 N68-11800 First and second order stochastic gradient algorithms developed for approximating unknown density and distribution functions of random vectors [TR-EE67-14] 03 p0331 N68-12110 Statistical description of nongaussian channels using expansions based on lognormal distribution [TR-400-162] 03 p0322 N68-12220 Convergence rates for empirical Bayes two-action increte observations decision problems [R-131] 03 p0360 N68-12292 (TR-131) Principles of brittle material design, design stresses and failure probability of brittle components - handbook [AD-661162] 03 p0424 N68-12797 Limiting distribution of likelihood ratio statistics nater local alternatives to null hypothesis [FSU-M126] 04 p0527 N68-12894 under local at [FSU-M126] Output probability distribution tables for quantizing envelope detector [SC-R-67-1185]

05 p0639 N68-14316 Photon escape probabilities from homogeneous plane parallel media 05 p0733 N68-14724 Fokker-Planck equation for probability density variation in optimal relay control system

06 p0819 N68-15581

Inverse functions, and fin analysis of complex problem 06 p0864 N68-15588

Probability distribution derived for ground clutter signal at input of radar (WRE-TN-SAD-182) dar receiver 07 p0963 N68-16560

Probability distribution function for impact latitude of assellite combined with injury probability and population distribution to compute probabilities of injury [DOUGLAS PAPER-4736] 07 p0951 N68-17067

Probability distribution functions for sums of certain andom variables compared to Gaussian approximation (SC-RR-67-7991

08 pl 192 N68-17234 Probability distributor predicting decame
[WRE-TN-APD-10] ption and computer program used etric radio emission of Jupiter 06 p1235 N68-17311

Probability distributi and line spectra model tion functions for carbon dioxide.

08 p1174 N68-18088 Nonparametric statistics approach and probability distribution functions applied to pattern recognition TR-15]

09 p1308 N68-18472 mparametric techniques for probability distribu-probability density, and hazard function estimates tion, probability dens for life quality [NASA-CR-93483] 09 pl359 N68-18499

Selection, and ranking procedures for restricted 09 p1359 N68-18538

Normalized probability distribution of photon opti-cal paths for radiative transfer equatons to determine diffuse reflection and transmission by cloud and dust [NASA-CR-70496] 09 p1384 N68-19219

ence of probability mean res on Euclidean p [AECD/EL-6] 10 p1544 N68-19539

Selection procedures for restricted families of probability distributions with increasing failure rate [ORC-67-10] 10 p1547 N68-19903 e analysis by probability distribution rmining reactor parameters method for determining reactor parameters [KFK-542] 11 p1740 N68-21143

Probability distribution of estimators for power den-sity functions of Gaussian multidimensional stationary random processes based on finite, discrete time sam-

DLR-FB-67-891 11 p1746 N68-21215 Numerical analysis of electromagnetic scattering cross sections and probability distributions for long [TN-1967-55] 11 p1661 N68-21333

Maximum likelihood techniques for design of op-mum star trackers that determine position and mag-itude INASA-TN-D-45491 13 p2103 N68-23377 Computer program for reversion of cumulative binomial probability distribution [NASA-TM-X-1592] 13 p2096 N68-24141

Distribution and properties of weighted sum of chi squares random variables [NASA-TN-D-4575] 14 p2280 N68-24565 14 p2280 N68-24565

Fokker-Planck equations for random viteration analyses on discrete nonlinear dynamic systems. 14 p2300 N68-25378

Receiver operating characteristic curve for evalua-15 p2426 N68-26281

bility density and cum lative distribution function tables for quadratic forms in vi [AFOSR-68-0793] variables 15 p2492 N68-26294

Probability distributions for errors in parameters of near-earth circular orbits with Apollo application [NASA-TM-X-63252] 17 p2968 N68-28834

Probability function over distribution of particles cattered and specularly reflected from rough surfaces 18 p3121 N68-29616 Waiting time distribution for two line system with

changeover times in queueing th eory analysis 18 p3103 N68-30016 Probability distribution functions used to find fatigue life, and its variability, of Al alloys subjected to cantil-[FTD-MT-66-79] 18 p3090 N68-30139

m of log-normal variate sums Statistical distribution [TR-0158/3230-46/-12]

18 p3108 N68-30837 Probability distributions over amplitude of energy

spectra of random noise (TM-203.3361-11) 19 p3236 N68-30972 Rate distortion function defined for class of sources, and proving of corresponding coding theorem [NASA-CR-96200] 20 p3434 N68-32351

Binary kernel method for calculating quantum statistical distribution functions of hard sphere system 20 p3544 N68-32922

T value limitation tables of probability distribution in human behavior [AMRL-TR-67-161] 22 p3814 N68-35857

Linear pattern classifier synthesis for probabilistic classes using mean square error criteria 24 p4274 N68-37500

PROBABILITY THEORY

Statistical simulation procedure for obtaining relia-bility characteristics of complex logical control systems

01 p0042 N68-10309 Distributions of random quantities in applied probability [TR-28] 01 p0085 N68-10642

Probabilistic model for planning factor and evalua-tion procedure in allocating aircrews to squadrons [RM-5385-PR] 01 p0017 N68-10734 Composition limit theorems for probability generat-

02 n0228 N68-11349 Reliability of human performance in production process - psychological factors - conference [AMRL-TR-67-88] 02 p0170 N68-11396

Monte Carlo simulation of molecular approach using mple multiplicative model of human behavior, and omparison to molar approach

02 p0171 N68-11398 shilistic model of photo ographic process - infor-[FTD-HT-66-632] 02 p0213 N68-11501 Sensitivity testing - Methods, statistical con-tions, and selection rules 02 p0230 N68-11720

abilistic approach to search strategy for Mars tion landers

(RM-380) 03 p0413 N68-11987 Markov chains used to evaluate probabilities of stochastic variations of wet and dry days [EMM-67-156] 03 p0362 N68-12018

Table look up procedures for computer program broutines used in determining chi-square propabili-[NAA-SR-MEMO-12235] 03 p0361 N68-12581

Probability theory applied to launch vehicle cost esti-[TR-1001/2515-01/-1]

03 p0430 N68-12722 Optimally scaled matrices to obtain column and row 04 p0528 N68-13026 [D1-82-0645]

Solution of discrete two person game with bluffing 04 p0530 N68-13326 Mathematical methods for determining features of

handwriting - graphology 05 p0761 N68-14396 Supplement to tables of joint probabilities useful in mixed acceptance sampling plans [TR-N-29] 06 p0859 N68-15091

Closure property of probability generating functions of random walk results connected with queues AD-662238] 06 p0863 N68-15492 and random wa [AD-662238]

Syntheses, and analyses of cybernetic problems - mathematical models for man machine systems with optimal control, operations research, economics, probability statistics, and computer programming [JPRS-44114] 06 p0819 N68-15576

Asymptotic properties of sequences of points in 06 p0867 N68-16032

Theory of similar tests for proof of independence of ertain complicated statistics

06 p0867 N68-16044 Uncertainty analysis for designing calorimetric ex-eriments, and equations for measuring properties of anetary radiation NASA-TN-D-4354] 07 p0997 N68-16529

Statistical theory of extreme values for computer mulation of digital communication processing 07 p0965 N68-16975

Construction of optimal ergodic codes 07 p0967 N68-16986 Computational evaluation of predicted performance by matrix methods

07 p0979 N68-16994 Statistical prediction of precipitation probability [REPT.-7624-268] 07 p1020 N68-17012

Mathematical models of competitive bidding processes as strategy descisions under uncertainty [TR-103] 08 p1194 N68-17866

Test procedures for comparison of polynomial coefficients of polynomial growth curves with autocorre-[ARL-67-0199] 08 pl194 N68-18043

Nonparametric extreme value statistics for constant signal detection in additive noise [NASA-CR-93261] 08 p1149 N68-18070

Probability of false failure in automatic monit with respect to tolerance fields of controlled parar 09 pl318 N68-18587

das for probability conversion to equations of algebra of logic 09 p1308 N68-18590

Operational reliability and failure probability of digital computers 09 p1310 N68-18802

Structure of certain two dimensional probability 09 p1365 N68-19293

Theory of subjective inferential probability with real imbers assigned to elements of arbitrary Boolean al-10 p1545 N68-19687

Statistical probabilities of Bayesian inference [TR-20] 10 p1547 N68-20254 Probability theory and Dirichlet problem for mul-tiply superharmonic functions

11 p1723 N68-20665

me convergence of binomial probabilities, alized Ramanujan equation 11 p1724 N68-20693 EX

720

fars

987

of

018

581

122

26

26

96

in

101

92

ith cs,

76

32

of

44

of

13

26

4

2

×

3

Ô

drical geometry [EUR-3937.E]

[M-7] 19]

(P-3890)

and structural system [NASA-CR-95961]

Probability theory for in tion and effect of fluctua

SUBJECT INDEX Probability model for random cotton fiber breakage 23 p4178 N68-36102 Probability theory and distribution functions of ran-m processes in linear dynamic systems 11 p1745 N68-20911 Error probabilities for maximum signal detection in presence of Poisson noise
[NASA-TN-D-4721] 23 p4017 N68-36105 Methods of solving spherical error probability in pre-cting satellite position dicting satellite por (MDC-TR-68-12) ASA-TN-0-721; Topologies for probabilistic metric spaces 23 p4086 N68-36126 13 p2025 N68-23137 Computer solution of prob decision making when uncertai [ORNL-TM-2096] obabilistic networks to aid tainty is involved 13 p2032 N68-23179 Probability densities for diffusion processes with ap-ications to nonlinear filtering and detection theories 23 p4106 N68-36294 Representation of finitely additive invariant probabilities as averages of finitely ergodic probabilities [AROD-2025-21-M] 13 p2097 N68-24314 Probability analysis of oscillations of wind tunnel models representing tall buildings [NPL-AERO-1254] 23 p4179 N68-36299 Weibull probability density technique for probability assignment in decision analysis [REPT.-67MAL02] 14 p2279 N68-24443 Probability theory applied to numerical forecasting periments of frontal precipitation 23 p4093 N68-36426 Cross section uncertainties in compact space power reactors (UCRL-70797) Geometric relations between satellites and sun with probability assumptions for internatellite recognition [RM-4866-PR] 23 p4176 N68-36346 14 p2292 N68-25044 Relative probabilities for formation of isomeric ates during radiation capture of thermal neutrons EL-79] 14 p2313 N68-25136 (FEI-79) Statistical methods for designing nuclear physics ex-eriments with emphasis on elementary particles Preliminary results concerning random graphs, di-graphs, time dependent processes, and probability models JINR-P1-3612) [NASA-CR-84674] Covariance matrix of aiming errors of series of shots calculated for case that aiming error for each shot is function of first aiming error [DLR-FB-68-44] 23 p4098 N68-37247 14 p2281 N68-25430 Microbial exposure probab from fractured materials of lu [NASA-CR-94969] ities and estimated loads 15 p2559 N68-25978 Mathematical models for constructing diagnostic stems and probability theory for evaluating case his-bry data on diseases Probability theory, statistical distributions, con-dence intervals, sampling, and other basic statistics for physicists [BNL-12602] 15 p2396 N68-26268 Running and distribution free tests for symmetry 24 p4275 N68-37606 Algorithm for differentiable convex functional appli-tions to linear programming under uncertainty UR-114] 15 p2495 N68-26956 [RR-114] Statistical probabilities of formation of isomeric states during radiation capture of thermal neutrons [ANL-TRANS-644] 24 p4315 N68-37879 Influence of uncertainties in planetary mass of Mars and astronomical unit on Earth-Mars trajectories [NASA-CR-61374] 16 p2734 N68-26993 PROBLEM SOLVING
NT ASYMPTOTIC METHODS
NT ITERATIVE SOLUTION
NT THEOREM PROVING Sampling and probability theory for estimating number of system failures in telephone networks [MTR-575] 16 p2618 N68-27008 Probability and statistical theory on confidence mits for component reliability of Saturn launch vehi-les using conditional probability and Bayesian 16 p2666 N68-27054 (D1-82-06761 Probable course of development of radio wave propagation 16 p2621 N68-27298 Characteristic function, probability density function, nd probability distribution function computations for orrelation detector output, and correlator output [NASA-CR-71559] 16 p2624 N68-27726 Spore concentration in polymerized plastic solids, ad probability of release of spore upon fracture of 17 p2826 N68-29347 Error estimation and optimization of statistical measuring techniques 17 p2906 N68-29432 Orthogonal telemetry systems, decoding analysis, and error probability 19 p3236 N68-31026 Quantum mechanical calculations of three body schange reaction probabilities in linearly constrained 19 p3323 N68-31027 ilities in general cylin-

19 p3310 N68-31384

19 p3378 N68-31629 for internal magnetic field fluctua-ctuations on shape of Mossbauer

20 p3564 N68-32476

22 p3900 N68-35447

Boundary values for first excursion probability as re-lated to reliability and safe performance of mechanical

Survey of basic formulas and concepts for com-ponent reliability evaluation of electronic equipment 20 p3450 N68-32613

Statical model and computer techniques for weather forecasts of conditional and persistance probabilities [AWS-TR-208] 20 p3524 N68-33311

Determining probability distributions for mass properties of systems
[TR-0158/\$3960-30/-2]

Probabilistic model for long range planning use of manpower, costs, and other project resources [NASA-CR-85119] 22 p3981 N68-35979

ulity distribution of overlapping information 22 p3901 N68-35461

Rational approximations and a ti equations 01 p0040 N68-10092 theory problems inv [NASA-CR-89974] Analyticity properties applied to numerous Schroedinger and Bethe-Salpeter equations 01 p0106 N68-10445 of Schroedinger [UCRL-17652] Solutions for systems of ordinary differential equa-tions into which partial differential equations of heat conduction are split by discreting space but not time (SAAB-TN-63) 01 p0151 N68-10539 Method for solving integer programming problems by generating functions (BNL-11676) 01 p0085 N68-10597 Solving potential problems involving conducting slids of revolution, particularly right circular cylinders 01 p0099 N68-10639 [AFOSR-67-1876] analytic functions, con-ort theory Boundary value p theorems, a 407-76-M1 02 p0228 N68-11261 Method for obtaining exact, nonlinearing of collisionless Boltzmannnlinear, steady state n- Vlasov equations for cylindrical and sphe [NASA-TM-X-60607] 02 p0253 N68-11353 Proposed solution for minimudies of surface geography and pr [TR-4] m path problem in stuoperties 02 p0207 N68-11496 Markov chain proceed es for space guidance and navigation problems [NASA-CR-91041] 03 p0358 N68-12011 Computer solution for three value problems involving time fields [ORO-2430-37] dimensional boundary invarient conservative 03 p0383 N68-12119 Singular integral equations [TG-230-T510] 03 p0360 N68-12264 Algebraic method for ution of contactless switching circuit problems (FTD-MT-66-92) 03 p0332 N68-12334 computer simulation statistical proble (RM-5387-PR) 03 p0326 N68-12398 ical analysis performed or solving problems in-Selected problems of nu on electronic desk calcula volving polynomials (AFCRL-67-0392, PT. 11 03 p0327 N66-12781 problem ric equation properties a methods 04 p0536 N68-12837 em solving based on uation properties and

23 p4091 N68-37241

23 p4098 N68-37247

24 p4274 N68-37477

04 p0536 N68-12842 ed for solving mul-04 p0536 N68-12843 Direct and inverse pr via initial value methods [RM-5447-PR] ns for integral equations 04 p0528 N68-13034 Modified sequential a linear programming pro [RAC-TP-277] tion technique for non-04 p0528 N68-13078 Restricted nature of solutions of differential equa-04 p0529 N68-13324 ition of Fredholm integral equations of one claim 04 p0530 N68-13339 Method for matching three views of particle track photographs from hubble chamber [ANL-7346] 05 p0656 N68-13940 05 p0656 N68-13940 Potential function of infinite elastic soli [NASA-CR-91667] dimensional problems of elliptical crack 05 p0745 N68-13943 conjugacy problem REPT.-67-125581 05 p0682 N68-14038 Heuristic programs for endling algebraic and analytic expressions (NASA-CR-91824) 05 p0633 N68-14360 Computer methods for solving two dimensional, mul-tigroup reactor kinetics problems [GA-\$169] 05 p0715 N88-14664 05 p0715 N68-14664 al radiation fields in in-infinite atmospheres, ness theorems for tolv-Duhe 05 p0733 N68-14722 05 p0685 N68-14806 06 p0861 N68-15294 TG-230-T5321 Mixed integer programming on and other fixed charge p (NASA-CR-91906) 06 p0807 N68-15421 in longitude Equations for solvente in classo (NASA-CR-66552) 06 p0921 N68-15561 a for reliabi integral and differential opposition of equilibrium figures rotating in external potential fie equations for solving 06 p0827 N68-15607 Out-of-kilter algorithm for so lving variety of network flow problems [RM-5472-PR] 06 p0865 N68-15654 Representation formula tegral equations of second kin [RM-5515-PR] solving Fredholm in-06 p0865 N68-15719 for solving reaction rate on irradiation of 4 to 1 mixtures of nitroge (BRL-R-1372) 06 p0792 N68-15749 dary val elutic media solved [NASA-CR-92555] 922 N68-15771 Sums of squares of co [P-3744] e odd integers 06 #0866 N68-15772 oction problem solving 06 =0927, NAS-1587 ITG-230-T5311 nformation proce earch and develop aspects in solution of aks focusing on individual decision making (NASA-CR-92584) 06 p0931 N68-15996 lonetationary dissipa es moving in parallel 06 p0830 N68-16033 olving problems of rith formation of liquid 06 p0928 N68-16045 em supercavitating, cor les with finite cavities 06 p0831 N68-1606 stant pressure cambi (NASA-CR-61444) of for solar wind and in-

07 p1079 N68-16264

Chara and pro correlat

INASA

[LAE-13

Nu

NASA

Approsingle problem RIFP-7

Invari

TR-61

Analy bitrary

and fun

Instalt Voltern Chebysi (CEA-B

First o

TR-27

Existe

ral and i

Iterat

Lines

REPT.

Intuit

Lapla

[PB-17]

[SR-1]

Induc

[RM-56

Prych problem RTS-4

Comp

I AFCR

Optin [P-3635

Priori for ellip (APL-C

Groun for arbit (NP-17

Comp

Partic value pr

(PB-17)

ant aulutions of linear regu-(NASA-CR-92740) 07 p0977 N68-16539 for gamma ray ponetration through multidab shield [NAA-SR-12337, V. 1] 07 p1047 N68-16620 in disk over all vectors from specified subspaces of given matric [ONRL-4151] 07 p1015 N68-16657 Eigenvalue-eigenfunction expansion methods for olving homogeneous boundary value problems apsolving homogeneous b plicable to control system [NASA-CR-92983] 07 p0977 N68-16919 Nonlinear least squares methods for quantal response and sensitivity analyses, minimum chi-square estimation, and differential equations (LA-3763) 08 p1192 N68-17438 Linearization, and convergent iteration methods for numerical solution of coupled differential equations [UCRL-17739] 08 p1194 N68-18045 rvey on development of a nt of unconstrained methods for solving math (BAC-TP-267) 08 pl 94 N68-18053 Least square generalized scale free matrix approximation with variable less functions (AD-664506) 09 p1357 N68-18257 ady, two dimensional and axially sym-oundary layer equations for limited aible flows Solution for steady, two dim matric laminar boundary lay classes of compressible flows [ARL-67-0045] ARL-67-00451
Problem solving by digital-analog summission of four simulation languages
39 p1307 N68-18323 (HDL-TR-1357) Problem solving in integral convex programming 09 p1360 N68-18582 Extending solutions for linear and nonlinear elliptic differential equations of second order 09 p1361 N68-18632 Deducing solution to Monge-Ampere equation from stimates of linear equations 09 p1362 N68-18636 Variational calculus techniques for obtaining ex-tremum conditions for problems involving optimum in-teraction of two objects with infinite velocity of signal 09 p1382 N68-18669 Approximation method of solving Riemann boundary value problem for boundaries between multiple connected regions and the [NASA-TT-F-11551] 09 p1363 N68-18817 Search algorithms for computer programming of solitivariate optimization techniques for nonlinear, arametrically defined systems NASA-CR-73200) 09 p1363 N68-19041 Numerical stability of partial differential equations in initial value problems 09 p1364 N68-19116 onlinear optimization problem with inequality constra 09 p1424 N68-19119 Method for solving optimum Pontryagin maximum principle control problems using 09 p1321 N68-19253 FORTRAN computer program for solving one imensional problems in plane, cylindrical, and spheri-al geometries cal geometries [ANL-7319] 09 p1397 N68-19285 High speed Monte Carlo method for hybrid com-uter solution of elliptic and parabolic partial dif-tential equations 09 p1312 N68-19313 Nonconventional comp previously handled only by [NASA-TM-X-1544] ers for solving problems 09 p1312 N68-19336 Approximate solution of two-point boundary value NASA-TM-X-631391 09 p1366 N68-19449 tive method for solving no onlinear equations 09 p1366 N68-19458 [TR-9] for reduction of dimensionality difficulties of dyna [SR-79] op p1366 N68-19462 QD algoriti fewton shift 10 p1543 N68-19525 Solution concept for m le person cooperative 10 p1547 N68-20001

tion method for solving singular control

10 p1510 N68-20067

Methods for solving nonlinear algebraic equations in empirier programs for nuclear magnetic resonance (NASA-CR-93822) 10 p1490 N68-20194 on of certain co ariance matrix 10 p1547 N68-20202 [RAE-TR-67239] Optimal solution to linear programming problems [GE/EE/67S-6] 10 p1504 N68-20292 Optimal control problem for distributed parameter systems defined by scalar parabolic or elliptic partial differential equations 11 p1675 N68-20583 Problems in partition theory, topology, asymptotic analysis, and number theory [AD-665400] 11 p1721 N68-20613 Asymptotic solution of partial differential equations in thin domains 11 p1722 N68-20641 Application of recursive function theory to Hilberts (RM-3494-PR) 11 p1724 N68-20718 Recursion relations for derivatives of free boundary in Stefan problem for heat equat [MRC-TSR-806] 11 p1726 N68-20806 Algorithm for performing post-optimality analysis of structured linear programs [MRC-TSR-815] 11 p1726 N68-20818 linear constraints and objective [MRC-TSR-819] mming problems with 11 p1726 N68-20822 Sequential unconstrained minimization technique for mathematical programming [RAC-TP-296] 11 p1728 N68-20953 Quasi-homogeneous utility representation for reference relation on cone 11 p1728 N68-20960 sate method for multidimensional diffusion Approxi theory problem [GA-7544] 11 p1684 N68-20984 Computational algorithm for solving variable time primal control problems 11 p1677 N68-21063 Representations for solutions of linear functional dif-ferential equations [NASA-CR-93953] 11 p1729 N68-21192 Solutions for puzzle com-blocks that must be placed in ce [P-3689] sposed of multicolored tain order 11 p1730 N68-21306 w of pattern recognition problems F) 11 p1669 N68-21329 Summary review of [REPT.-07931-1-F] Approximate solution dimensional space [MRC-TSR-759] ar equations in infinite-11 p1731 N68-21403 Computerized solutions for simultaneous differential quations describing time rate of change of electrons during continuous is [BRL-R-1388] 11 p1655 N68-21498 State variable approach to solving Fredholm integral pustions of second kind [TR-459] 11 p1731 N68-21507 Nonparametric procedu re based on order statistics for solving problems in decision n [NASA-CR-94123] making 11 p1732 N68-21614 Certain methods for finding solutions to problems and games and their solution to pattern recognition SRC-126-A-67-59] 11 p1732 N68-21646 and games and their solution to po (SRC-126-A-67-59) Nonlinear correction method for orbit determination using range, azimuth, and elevati [NASA-CR-1040] ion data 12 p1964 N68-21864 Solutions of equations governing large deflection thavior of flat, thin, elastic metal plates under inform and hydrostatic pressures and various boundaniform and hydrostatic pressu 12 p1975 N68-22140 Approximation methods applicable to problems in netic theory 12 p1860 N68-22169 Quantization in Clifford space-time and problems in roup theory related to determining root vectors and group theory related to defundamental weights

12 p1898 N68-22179

lependent variable for

12 p1917 N68-22478

12 p1930 N68-22582

ons for special classes

12 p1846 N68-22740

Recursive uns

bility of decision problem for class

16 p2693 N68-27094

olving problems of multiple light

Explicit versus iterative so

GAKIN computer program containing multigroup quations, numerical algorithm, and problem solving

[NASA-TN-D-4447] dary value p ferential equations in B (FTD-HT-67-128) Numerical solution of equatio draining process using finite diffe Pursuit-evasion games and solutions to rendezvous problems Battery and fuel cell power sources for electric cars [REPT.-67-C-130] 13 p2042 N68-23141 13 p2042 N68-23141 linear programming problems [RAC-TP-279] Implicit function theorem for solving systems of (USL-858) ling problems (P-3790) Formulation of problems in sequential design of ex-eriments defined and generalized as conventional quential analysis formulation Reflection formulas for solutions of elliptic and arabolic equations of second order in independent Asymptotic solution of equations of incompressible Multigroup diffusion theory for solution of transport (TRG-1568/R/) Assembly code and language implementations of aethod for solving Poisson equation using Fourier nalysis AFOSR-68-0618) Arithmetic operations over integers with arbitrary signs in system of residue classes and their circuit [FTD-HT-23-580-67] Computer method for solving problems of sweptback wings and screw bridges with or without cut-outs and column supports Finite difference methods for solution of Navier-Stokes equations for steady two dimensional turbulent (SF/TN/S) Solving systems of linear equations using generalized (USL-874) Rotational discrimination all regression and equation solving [NASA-CR-61780] Accelerated successive replacement method for olutions of boundary layer problems in fluid [R68SD8] Graphical represent in normal coordinates [ARC-R&M-3496] Use of inertia as perturbation parameter for develop-ing series solutions for response of system to harmonic excitation, and expansion of series solutions as contation, and expand ad fractions Automatic methods for general solutions to all in-teger matrix vector inequalities [BNL-12279] Systems analysis for solving electromagnetic inter-ference and noise problems associated with electronic (UCRL-18111) Laminar boundary layer problems solved by integral matrix methods [NASA-CR-1062] 15 p2577 N68-26641 Solutions to Poisson equation and applicability to roblems of electrical breakdown due to low pressure 15 p2448 N68-26911 Evaluation and comparison of programming language PL/I to FORTRAN, COBOL, and JOVIAL [CS-6813-R0106] 16 p2627 N68-26989

SUBJECT INDEX Vectorial concept for solving three body problem in 12 p1969 N68-22885 for second order difnach space 12 p1900 N68-23037 ns describing unsteady rence methods 13 p2050 N68-23051 13 p2090 N68-23094 13 p2092 N68-23295 n of sequencing and 13 p2093 N68-23376 13 p2094 N68-23492 13 p2094 N68-23569 ith negative pressure gradient (6) 13 p2053 N68-23738 13 p2170 N68-23739 13 p2035 N68-23756 plified format for model elimination theorem 13 p2095 N68-23782 13 p2095 N68-23896 13 p2162 N68-23938 13 p2055 N68-24158 13 p2096 N68-24187 on algorithm for nonlinear 13 p2097 N68-24322 14 p2240 N68-24436 n of binary flutter equations 14 p2180 N68-24791 15 p2577 N68-26641

EX

224

dif-

037

ady

051

094

226

of

295

ex-

192

ent

38

39

col

56

82

ify art

ck nd

38

er-nt

18

17

12

SUBJECT INDEX Characteristic function, probability density function, and probability distribution function computations for orrelation detector output, and correlator output 16 p2624 N68-27726 INASA-CR-715591 d order differential equaunipative system of secon, and convergence of so 16 p2697 N68-27758 lity of system of 16 p2698 N68-27763 Equivalent local potential problems solved by assamption and approxi [IAE-1316] 16 p2730 N68-28149 type vehicles [NASA-CR-61856] 16 p2771 N68-28309 Approximate solution agle particle Green oblems in solids in many-impurity 17 p2958 N68-28900 TR-61 17 p2921 N68-29264 Analytical approach to conspiracy problem for ar-17 p2942 N68-29484 ock wave theory, destructive effect of explosions, undamentals of gas dynamics 3-HT-46-2581 18 p3061 N68-29967 and fundamentars of [FTD-HT-66-258] 18 p3061 N68-29967 Instabilities in numer Volterra integral equat Chebyshev polynomiah [CEA-R-3427] erical solutions to Fredholm and ations of first kind - solution by 18 p3103 N68-29981 ement planning ce for decision making TR-27 18 p3104 N68-30026 tence of quasi-periodic solutions to three body m in celestial mechanics 18 p3164 N68-30060 Extension of asymptotic method for analyzing natural and forced vibrations of plates and shells to solution of self-adjoint eigenvalue problems in rectangular 18 p3182 N68-30657 Iterative solution of partial differential equations in boundary value problem [PB-177339-1] 19 p3198 N68-31032 used in enumeration of m of eight variables 19 p3300 N68-31073 Intuitive structural design processes analyzed as problem solving task within framework of data processing theory of cognition [AFOSR-68-1374]

19 p3300 N68-31073 [REPT.-245] Laplace transforms for solution of problems on non-tationary diffusion of radiation in inhomogenous medi-[PB-177579T] 19 p3317 N68-31685 General solutions of thability equations of elastop ional linearized c solids 19 p3378 N68-31715 Problem solving procedures for efficient syntactic [SR-1] 19 p3250 N68-31830 Inductive inference research [RTB-155] 19 p3218 N68-32078 Multilevel systems theory and on line coordination problem 20 p3453 N68-32255 Initial value method for solving Fredholm integral equations with semidegenerate kernels [RM-5602-PR] 20 p3513 N68-32392 Particular solutions for linear two-point boundary alue problems with regard to digital computers NASA-CR-96231] 20 p3459 N68-32411 [NASA-CR-96231] Psychological factors in the problem solving [RTS-4098] inking direction during 20 p3410 N68-32506 Computer mentechniques and appl [AFCRL-68-0266] ory, formal theoresa proving lication to new problem domains 20 p3442 N68-32513 al stopping problem (P-3635) 20 p3514 N68-32656 re properties of solutions for elliptic and parabo (APL-CLB-3-T-545) 20 p3514 N68-32821 Group theoretical ap for arbitrary masses (NP-17483) to conspiracy problem

20 p3545 N68-32950 for problem solving by

20 p3444 N68-32965

NPSSSGD-8051A

24 p4278 N68-38361

ma of f

a sharing file system for problem solving facility 20 p3444 N68-32992 of mode 20 a3445 N68-33046 ng projections of convex polyhedra [DI-82-0714] 20 p3515 N68-33102 r on finite time interval 20 p3539 N68-33497 Qualitative solution by 21 p3794 N68-33999 m approach for integer RM-5644-PR1 21 p3665 N68-34338 Task organ er compatibility effects 21 p3627 N68-34342 (TR-58) multiple response op-algorithm for sequential r programming problems, include 21 p3714 N68-34505 nvex mathematical pro-RAC-TI-3191 21 p3714 N68-34558 e problems and periodic nlinear differential equa-22 p3898 N68-34942 tistical prot s in deriving amplifying flation detectors 22 p3915 N68-35119 rs for solving non-[D1-82-0677] 22 p3899 N68-35201 eorem proving and solving optimal problem (FTD-MT-24-200-67) 22 p3851 N68-35290 Integration of element [SDC-SP-2801/002/00] tions using algebra 22 p3900 N68-35350 ogramming operations ase of arbitrary rank 22 p3900 N68-35433 research proble (AD-672584) nlinear equations in 22 p3901 N68-35730 Solution vectors for periodic ons in state time space exe c linear differential equa-emplified by satellite at-[UTIAS-TN-127] 22 p3902 N68-35956 [MAC-TR-5] iculus word problems 23 p4026 N68-36474 ly as solution to parabolic 23 p4089 N68-36631 23 p4003 N68-36681 thod and Lemke method for solving lin (ORC-68-5) 23 p4089 N68-36694 ding of circular cylindri-ed edges due to discon-tric radial loadings 23 p4182 N68-36819 ISC-DR-67-8831 23 p4004 N68-37224 Fokker-Planck eq oximative solu 23 p4039 N68-37362 on to solution of functions to solution of use circle 24 p4347 N68-37623 re survey on solving problems or con-and continuum mechanics 24 p4300 N68-37797 Analyticity of singular integral equation solutions [AD-673550] 24 p4276 N68-37968 aided graphical solutions for six problems g, mechanics, and operational analysis 24 p4304 N66-38241 [P-405] maximum principle and led to management planning problems 24 p4277 N68-38242 RR-1377

Proof and decision procedures based on reso [AFOSR-48-1823] 24 p4278 N68-38434 Wing profile lift du [FTD-HT-67-427] ges in angle of attack 24 p4196 N68-38487 language for electrical Problem oriented co AD-6740[0] 24 p4234 N68-38496 PROBLEMS ering problems of large hydrogen 06 p1159 N68-18161 OPTICAL CORRECTION PROCEDURE 05 p0740 N68-14942 NASA-TM-X-53721) 17 n2894 N68-28919 do wave proper Methods of impre 17 p2852 N68-29102 High flux isotope reactor fuel element fabrication ORNL-42421 20 p3533 N68-33323 procedure for integrating no public policy and legisla-ongressional committee 06 p0931 N68-16020 Tech covering testimony on 20 p3614 N68-32710 od flying objects presented Science and Astronautics 20 p3614 N68-33382 Symposium on u before House Com U COMPUTERS PROCUREMENT INASA-TM-X-606001 01 p0154 N68-10403 Procurement specificat powders developed th morphological structures [LA-3653] r commercial carbide characterization of 05 p0672 N68-14040 NASA Manned Spr small business firms in [NASA-CR-65916] Center experience with 05 p0762 N68-14624 Technical requirements for liquid rocket propellant AFRPL-TR-67-2561 10 p1583 N68-19977 Contractual ince decision making model for use in procu (AD-665276) 10 p1616 N68-20298 PRODUCT DEVELOPMENT
NT WEAPONS DEVELOPMENT Color television camera devel development 02 p0219 N68-11060 (RR-TR-67-111) Exploratory develor oscillator - permanent and testing of life-test [ECOM-02225-3] nt of 3.2 millimeter wave 02 p0188 N68-11327 rmally sterilized kel cadmium buttery NASA-CR-90501 02 p0163 N68-11804 ent for conversion of polymers Dry spinning equipm [AFML-TR-67-173, PT. 1] 03 p0356 N68-12200 n of recording Fabry-Perot BARC-290] 03 p0343 N68-12290 n range large commercial air-ortation in Europe 03 p0301 N68-12297 ruft for passenger to REPT.-6) (FTD-HT-67-1) 03 p0333 N68-12397 Materials evaluate ad low pressure to 03 p0348 N68-12654

SUBJE

function [AD-6

ior for

Dyn

Text

and m

(ECO

Eng

Proc telepri

P3C-

Con

(GEA

Deni sensor [NAS/

Proc

Or chr

Phys

FID-

metale

JPRS

Desi of lun sample

[NAS/

Proceed and tit

Proc

Stud jected NAS

Procicate for

Grin

Mat line as and co [TR-3

Adv reliabi studies

Opt

Fab

sility [NAS

(K-17)

Systems analysis program for low enrichment fuel reprocessing, nuclear reactor component and engineering research, and becomine pentafluoride for producing IK-L-1780, PT. 17] 03 p0380 N68-12699 Operating characteristics of three-degree- of-[FTD-MT-65-149] 03 p0345 N68-12717 Biomedical applications team efforts to match biological and medical problems with NASA technolo-(NASA-CR-91387) 04 p0455 N68-13207 Fluidic speed and load controller for motor- genera-(NAVSEC-X-01) plastics development in U.S.S.R. fiber reinforced [JPRS-43923] Performance of short mode electron accelerators and construction of high current, high duty factor near accelerator 05 p0642 N68-14324 Conference papers on design and development of military aircraft charts and map displays
[AD-661490] 05 p0687 N68-14823 User requirements, design criteria, and production factors for developing navigation charts
05 p0688 N68-14826 Requirements validation procedures and develop-ment of mapping and chart products for armed forces 05 p0653 N68-14827 Design and development of graphics for military air-craft display systems 05 p0654 N68-14829 Design and development of projected film strip technique for moving map display 05 p0688 N68-14833 Research and development needs for navigation display systems 05 p0688 N68-14835

Pictomap processing and production /photographic image conversion by tonal masking procedures/
05 p664 N68-14843
Developing and validating flight crew requirements for aeronautical charts and navigation displays
05 p0690 N68-14847
Product development and system design requirements of military aircraft map-display devices
05 p0690 N68-14852
Market study for installation of European regional telesommunication satellite system
06 p0797 N68-15322
Basic design, and development principles for aircraft construction
(NASA-TT-F-11415)
08 p1115 N68-18192

eonstruction
[NASA-TT-F-11415] 08 p1115 N68-18192
Design, and development of satellife data reduction
processor system.
[AFCRL-67-0561] 09 p1302 N68-18396
Criteria for solid propellant acreening and preliminary
engineering design by application of cumulative
damage concepts
[REPT-1159-81Q-2] 09 p1412 N68-18436
Development of warm distribution system for
hydrazine fueled gas generators for spacecraft attitude
control torques
[NASA-CR-93661] 09 p1278 N68-19389
Development, and evaluation of sieve sampler, and
rotating wire brush sampler for planetary soil probing
[NASA-CR-93678] 09 p1428 N68-19394
Development cost estimates for ELDO launch vehi-

[ELDO-TM-P-3] 10 p1617 N68-20391
Development progress of engineering standards and practices for liquid metal systems and components
[NAA-SR-12583] 11 p1738 N68-20878
Prototype air distribution systems for temperature controlled protective clothing
[TR-68-21-CM] 11 p1640 N68-21345

Cybernetics applications to feedback control in stochastic processes, single product dynamic model, and animal metabolism [JPRS-45276] 12 p1852 N68-22285

Single product dynamic model that considers labor resources, work and time units, and reserves in product

12 p1899 N68-22287
SNAP 23A project management, quality control, systems engineering and development, materials and component testing, and safety analysis
[WANL-3800-9] 12 p1908 N68-22714
Applications of ultrasonics in machine building
[FTD-HT-23-597-67] 13 p2077 N68-24156

Design and development of pulse duration modula-tion multiplexer for telemetry system [AMRL-TR-66-164] 14 p2229 N68-24418 Increased thermal efficiency and increased Diesel e economics 14 p2±37 N68-24990 Silver zinc buttery separator material development [NASA-CR-94785] 14 p2192 N68-25011 Technical, organizational, and quality and reliability of products [NASA-TM-X-61105] nal, and price factors affecting 14 p2265 N68-25364 Resistojet design and development for Manned Or-ital Research Laboratory [NASA-CR-66604] 14 p2194 N68-25450 Production of uranium pits for irradiation test capsu onium carbide fuel pel-(WARD-3791-12) 15 p2505 N68-26798

[WARD-3791-12] 15 p.2305 N68-26798
Construction and performance data on hydrazine hydrogen peroxide fuel cell 17 p.2813 N68-28732
Hydrocarbon and methyl alcohol fuel cell power systems employing generation of hydrogen by steam reforming

Research and development of electrocatalysts for galvanic fuel cells 17 p2813 N68-28736

Technology utilization process, and NASA programs for transferring technology and disaeminating information on product development [NASA-CR-83192] 17 p2990 N68-28964

Product development of beryllium alloy prestressed fasteners for use in Salurn project (NASA-CR-6.1286) 17 p2894 N68-29276 (Chemical procedures for development of glass suita-

Chemical procedures for development of glass suitable for use as core material in fiber optic devices operated in near ultraviolet portion of spectra 17 p.2922 N68-29562

Economic effects from aircraft designs which extend fatigue life and integrate fail-safe factors 18 p.3000 N68-29646

Multiple purpose inverter design based on phase demodulated inverter circuit selected from state-of-the-art assessment of ten inverter circuits [NASA-CR-92200] 18 p3005 N68-30318

Nuclear reactor design, construction, and utilization by atomic energy department of India 18 p3116 N68-30319

Development of magnetic fluid viscous oscillation damper for scientific satellites [NASA-CR-94173] 18 p3180 N68-30485 Systems engineering and development of M-1 injector hydrogen oxygen engine [NASA-TN-D-4730] 18 p3158 N68-30604

[NASA-TN-D-4730] 18 p3158 N68-30604 Design, development, and evaluation of four layer diode in high power electric switch

Development and testing of mortarboard psychromotor for fuel moisture readings
[WBTM-T&EL-3] 19 p3276 N68-31118
Performance of Valdre heating and tilting stage in Siemans electron microscope
[UCRL-17773] 19 p3279 N68-31677

Thermal insulation development to reduce heat transfer to coolant of FLOX/propane regenerative engine [NASA-CR-72413] 19 p3360 N68-31939 Computer aided design facility to aid designers in

Computer aided design facility to aid designers in product development and systems engineering [NASA-CR-96154] 19 2321 N68-32102

Development of high pressure squibs for deep space probe vehicles
[NASA-CR-96285] 20 p3402 N68-32603

Neutron hardened intermediate frequency amplifier using n-p-n planar transistors [HDL-TM-68-16] 20 p3451 N68-32643 Quality control under Markovian deterioration [TR-110] 20 p3489 N68-33038

Product development and testing of thin film oxygen partial pressure sensors [NASA-CR-1182] 22 p3875 N68-35149

Development of space engineering products for use in aerospace environments and their usage in industry (NASA-TT-F-11938] 22 p3883 N68-35603 Formulation of rapid curing polymeric foam material with large volume increase, resistance to solvents, and good strength (MLM-1397] 22 p3897 N68-35759

High acuity, stabilized 70-mm aerial camera system KS-71 with V/H sensor and interchangeable lenses for day or night use [CAL-6720-F] 22 p3880 N68-35936

Organic depolarized cells using magnesium perchlorate/meta-dinitrobenzene [ECOM-01401-4] 22 p3809 N68-35947

Physical and mechanical properties of experimental carbons and graphiten based on X ray diffraction, electron, and optical microscopy.

[NASA-CR-97144] 23 p4081 N68-36080

Solid state image sensing devices developed for meteorological satellite applications [NASA-CR-86104] 23 p4035 N68-36267 Development of glass composition core materials for ultraviolet fiber optics devices

[AD-673446] 23 p4108 N68-36528 Textile technology from aerospace research and applicability to textile and apparel industries NASA-CR-97195] 23 p4083 N68-36655

Test equipment development for organic aerosol and terpene determinations through atmospheric sampling [NASA-CR-73253] 2 p4010 N68-36675 Fast neutron irradiation effects on thermocouples for

FTF coolant
[BNWL-SA-1857]

Chemical to electrical power conversion using modified free piston engines

24 p4199 N68-37497 Iron corred particle focusing device design optimization computer program [UUIP-586] 24 p4241 N68-37675

Spectrometer design for thermal neutron inelastic scattering measurements from single crystals [IRR-#98/IRPS] 24 p4313 N68-37778 PRODUCTION ENGINEERING

Dynamic programming used to find sequence which minimizes total processing time for parts on three sequential machines - optimal scheduling 01 p0042 N68-10312

Fuel analyses and production engineering measures for nuclear reactors [BNWL -482] 01 p0094 N68-10759 Production of lead telluride with semiconductor pu-

Production of lead telluride with semiconductor purity by chemical deposition from relatively contaminated materials

01 p0024 N68-10769

Preparation of pentaborane-11 in bench scale quantities
[TR-14] 02 p0176 N68-11390

Self-aligning bearings to improve air lubricated spindles for machine tools [Y-1581] 03 p0347 N68-12205

Preparation and producton of fast reactor fuel elements
[KFK-564] 03 p0379 N68-12676
Development of precision connector type in-

Development of precision connector type inductance standards [BDX-613-98] 03 p0664 N68-14714 Industrial preparedness measure for production tests

Industrial preparedness measure for production tests in electronic defense industry [TP-338] 05 p0670 N68-14963 Reliability engineering in manufacturing electronic

Reliability engineering in manufacturing electronic computers [FTD-MT-65-514] 06 p0811 N68-15650 Neutron activation techniques for on-stream process analysis and batch sampling [ORO-2980-17] 07 p0953 N68-16137

[ORO-2990-17] 07 p0953 N68-16137 Production engineering method for manufacturing rubber based explosive sheets [ISL-4,66] 07 p1002 N68-16167

High performance insulation design, and manufacturing plan of torus tank for Saturn 5 vehicle [NASA-CR-61557] 07 p1003 N68-17099 Working procedures, and inctopic measuring methods in steel foundries [EUR-364.5.F] 07 p1004 N68-17126

methods in steel foundries [EUR.364.5] 07 p1004 N68-17126 Computer application in structural design, construction planning, and implementation 07 p1093 N68-17134

Multiproduct inventory models with set-up costs [TR-106] 09 p1338 N68-18413 Markov decision process with costly inspection [TR-107] 09 p1338 N68-18417

Reprocessing of irradiated chlorine fluoride fuels [EURAEC-1934] 09 p1297 N68-19035 Synthesis of optimal variant for automatically controlled production machinery

Algorithm for maximum capacity path routing through network [RM-3375-PR] 10 p1547 N68-20000

Design requirements and process parameters for fabricating simulated titanium alloy Y-ring segment for Saturn S-IC using diffusion welding [NASA-CR-61698] If p1702 N68-20877

A-978

NDEX

8-35947

rimental on, elec-

8-36080 ped for

8-36267

erials for

8-36528

and ap-

8-36655 moling 8-36675

ples for

37160

using

-37497

ptimiza-

-37675

nelastic

-37778

which three

-10312

easures

-10759

tor pu-

10769

quan-

11390

d spin-

[GEAP-5561]

vanadium ingots ICEND-3742-3251 P3C-06227-2-2) [FTD-MT-65-20]

12205 el ele-12676 e in-14714 n tests 14963 tronic 15650 rocess

16137 turing 16167 nufac-7099 suring 17126 struc-

9713 uting 0000 s for nt for 0877

Defense industry participation and effectiveness in functional engineering program.
[ΛD-665679] 11 p1807 N68-20938 Production design feasibility of half inch X-connec-

for 4500 pai service [NASA-CR-93923] 11 p1704 N68-20977 Dynamic programming algorithm of gaseous diffusion uranium 235 production plants [K-1712] 12 p1905 N68-22472

Fabrication processes for producing high purity 12 p1891 N68-22782

Textbook on digital equipment for automatic control and measurement of production processes [FTD-MT-65-61] 12 p1854 N68-23003

Value engineering for light observation helicopter avionics package [ECOM-01943-7] 13 p1990 N68-23167 Engineering model of linear power tube [TR-68-9] 13 p2038 N68-23169

Production engineering measures for high speed teleprinter for airborne communications and data 13 p1994 N68-23320

Component acceptance tests and data acquisition stem for fast oxide reactor development [JEAP-5561] 13 p2106 N68-23372

Design and development of prototype contaminant sensor for manned space missions [NASA-CR-6606] 13 p2067 N68-23461

Production methods for contact prints in emulsions or chromium coated glass plate [NASA-CR-92103] 13 p2074 N68-23731

Physical and chemical properties and reactions of antiferromagnetic metals - electric and crystalline pro-perties, metal working, alloys, mineral mining and 13 p2075 N68-23814

Relative efficiency index for mining rare and noble metals from thin ore veins 13 p2175 N68-23816

Soviet nuclear research, reactor technology, and production engineering articles
[JPRS-45331] 14 p2290 N68-24602

Design criteria for generating engineering prototypes of lunar and planetary soil samplers and mechanical sample processors [NASA-CR-94767] 14 p2264 N68-24771

14 p2264 N68-24771

Production, properties, and applications of titanium and titanium alloys in chemical engineering [DMIC-MEMO-234] 15 p2481 N68-25961 Mining, mineral processing, and production of titani-

15 p2481 N68-25963 Production and availability of titanium mill products 15 p2472 N68-25964

Non-woven reinforced Mylar-Dacron balloon con-struction material, and flying thread loom techniques 16 p2682 N68-27939

Study, cost, and systems analysis of present and projected liquid hydrogen production
[NASA-CR-73226] 16 p2615 N68-28227

Production engineering and evaluation of sodium eli-icate foam for use in airdrop cushions [TR-68-46-AD] 17 p2904 N68-29203

Grinding, cutting, and drilling tests using grease as surface active cooling lubricant in machining [FTD-HT-67-90] 18 p3081 N68-30488

Neutron production and neu [IFA-AL-1] on generating tubes 19 p3259 N68-31670 Mathematical models of inspection along production ine and analysis of various quality control procedures

and costs 19 p3286 N68-31882

Advanced processing techniques for fabricating high flability silicon integrated circuits, and failure mode (NASA-CR-860911 20 p3447 N68-32251

Optimization of large control systems with hierarchic n control management 20 p3455 N68-33509 structures - automatic produ [JPRS-46288] Sintered and pressed powder materials for electrical engineering and manufacturing

20 p3453 N68-33565 Fabrication feasibility and structural design of solar generators with array deployment and retraction capa-[NASA-CR-97208] 23 p3994 N68-36630 elation and convergence of steady state process 24 p4215 N68-37782 Soviet textbook on fundamental methods of planning and designing aircraft industry plants and shops [FTD-HT-67-189] 24 p4358 N68-38023

24 p4358 N68-3802: enermomechanical processes for hardening and production of steels - induction heating, heat treat-ment, strain hardening, roll forming, and production engineering steel products [JPR-46592] 24 p4268 N68-38089

Induction heating and cold drawing for production of high strength steel wire 24 p4262 N68-38092

PRODUCTIVITY

Workmanship relationship to total production system - human reliability 02 p0171 N68-11399

Economic impact of NASA research, production, and testing programs on southern communities [NASA-CR-96809] 21 p3797. N68-34387

Research and development costs impact on labor productivity NASA-CR-96889] 22 p3982 N68-36005

PRODUCTS Formalism for treating products of generalized func-tions and applications in mathematical physics [NASA-TN-D-4244] 02 p0229 N68-11494

Summaries of publications and reports generated in onnection with studies on sparse matrix inverse product forms [NASA-CR-90534]

02 p0230 N68-11861

ROFICIENCY MEASUREMENT U HUMAN PERFORMANCE U PERFORMANCE TESTS

PROFILOMETERS

Optical profilometer for measuring precision thin film circuit elements [SC-CR-67-2509] 11 p1698 N68-21244 Profilometer accuracy and methods for measuring roughness of metal surfaces 23 p4074 N68-36300

PROGRAM MANAGEMENT
U PROJECT MANAGEMENT

Computer position profile for analyzing, and select-TR-53 06 p0813 N68-15944 Evaluation and comparison of programming lan-puage PL/1 to FORTRAN, COBOL, and JOVIAL [CS-6813-R0106] 16 p2627 N68-26989

Logical integrated circuit programmer for automatic gamma spectrometry, using least squares method and IBM 360 computer for analysis (CEA.R-3452) 22 p3843 N68-35554

PROGRAMMING System design and programming for Illiac 4 com-uter, and application to solution of partial differential

[REPT.-256] 14 p2228 N68-25171 PROGRAMMING (SCHEDULING) NT THRUST PROGRAMMING

APEX display system and scheduling algorithm, graphic presentation of data, compiler and language for integrated circuit testing, and superposition in waveform processing. (ESD-TR-67-570) 08 p1152 N68-17915

023017020100394

ROGRAMS

RAMS
APOLLO PROJECT
ARGUS PROJECT
COMSAT PROGRAM
DEFENDER PROJECT
EUROPEAN SPACE PROGRAMS
GEMINI PROJECT
LUNAR PROGRAMS
MARINER PROGRAM
MERCIRLY PROJECT

MARINER PROGRAM MERCURY PROJECT NASA PROGRAMS

PERT RADIO ATTENUATION MEASUREMENT

122222

RADIO ATTENUATION
PROJECT
RANGER PROJECT
RESEARCH PROJECTS
ROVER PROJECT
SATURN PROJECT
SURVEYOR PROJECT
U.S.S.R. SPACE PROGRAM
VOYAGER PROJECT

High energy research program for linear accelerator [SLAC-PUB-369] 12 p1927 N68-22394 PROJECT MANAGEMENT

Parts and materials application review for project management of space systems engineering (NASA-SP-4505) 01 p0067 N68-10120

Air Force Office of Scientific Research organisation, current research program, and research accomplishments described [AFOSR-67-0300] 01 p0154 N68-10199

implementation de cepts covering spa-schedules, and costs [NASA-CR-89998] n definitions for Voyager project con macecraft development, operations 01 p0138 N68-10259

Voyager project study summaries on spacecraft owered by radioisotope thermoelectric generators, lanetury quarantine, redundancy, and data manage-01 p0139 N68-10370

Voyager project impl [NASA-CR-89999] on definition 01 p0139 N68-10383 Systems engineering and analyses, ground support ment, test facilities, and management of NEEVA

INASA-CR-91051) 03 p0368 N68-11960 edaling control in super-search projects 03 p0369 N68-12000

Engineering and design data on thermoalectric converter for SNAP-23A, and project management plans [MMM-3824-0009] 03 p0369 N65-12038

nnics development and outrol system 03 p0308 N68-12369 planning for national

Project and management weather modification program [NASA-TM-X-60721] 03 p0364 N68-12375

Effect of project and matrix management forms of organization on stability and flexibility of manpower within defense/aerospace sector of United States (NASA-CR-91280) 04 p0599 N68-13011

Progress reports in materials, plasma, and elec-trochemical engineering [NASA-CR-91449] 04 p0543 N68-13118

Progress report in solid state physics research [AERE-PR/SSP-10] 04 p0556 N68-13120 PERT project and cost estimate for Large Astronomical Satellite /LAS/ [ESRO-TM/P/-61] 04 p0599 N68-13406

[ESRO-TM/P/45] 04 p0399 N6E-13400 Project summaries for low and medium energy physics, computer, and mathematics research pro-grams sponsored by Atomic Energy Commission [TID-4005, PT. 3]

DOD management of mapping-geodetic community support of military aircraft operations
OS p0687 N68-14824

Army Map Service management procedures in con-acting military map evaluation surveys BITYEYS 05 p0654 N68-14828

Orbiting primate spacecraft project planning and documentation on systems design and engineering, experiment design, tests programs, and manufacturing [NASA-CR-68511] 05 p0744 N68-14892

Research summaries for 36 materials research programs, primarily in solid state physics [AR-8] 06 p0893 N68-15229 R-8] ESRO annual research report 1966 06 p0930 N68-15671

Research program on methodologies of managing research and development projects (NASA-CR-93000) 07 p1102 N68-16889 Minutes of confirmation hearing for NASA deputy

Minutes of confirm 07 m1104 N68-17193

Dragon project high semperature reactor operations [NP-17118] 08 p1201 N68-17242

Summary reports on research in cryogenics, met physics, crystallography, spectroscopy, solid stat physics, semiconductors, phase studies, high pressurescarch, and radiation damage [AD-463699] 08 p1228 N68-1800 06 p1228 N64-18007

Research reports on flight mechanics, fluid echanics, planetary environments, rarefied gas ynamics, solar physics, selenography, and ther-Modynamics [NASA-TM-X-53647] 08 p1243 N68-18195

Computer circuit research, hardware systems, soft-are systems, numerical methods, computer arithmetic ad artificial languages, switching theory, and logical

09 p1306 N68-18256 Review conferences by key contractors and NASA enters on performance, schedule, resources, and same ment of Apollo project and Apollo Applica-ons Program /AAP/ 09 p1453 N68-18959

ration - su (NASA-CR-93723) 10 p1615 N68-19693

SUBJ

PROM

ture (

PRONT

Re

[NA PROOF

U

PROPA

latch ratio [NR]

prop earth [NA

Hi

(RE

Pr

T

PROP

dec

con nete (ER

vek shai [N/

PROF

bur

PROJECTED AREAS International activities in space sciences, rocket, satellite, and balloons launched, astrophysical experiments, upper atmosphere, and geodesy research [AFCRL-68-0011] PROJECTILE CRATERING Cratering in basalt and pumice targets by hyper-velocity impact of aluminum projectiles [NASA-CR-61569] 08 p1250 N68-17561 PROJECTORS Operational plan on Geos B satellite observation pro-gram to relate African coordinate system to European Hydrodynamic model of micrometeoroid impact 10 p1604 N68-19852 Solid state bro [AMRL-TR-67-61] 03 p0319 N68-11941 (NASA-TT-F-11657) Penetration of porous projectiles in alumin 12 p1968 N68-22634 Procedures for performing microbiological assays and certifying spacecraft hardware sterility [NASA-CR-94379] 12 p1825 N68-22635 plastic targets [NASA-TN-D-4505] 11 p1796 N68-21293 Crater dimensions in all after projectile impact m alloy and steel plates Decontamination procedures for handling spacecraft component parts, tools, and equipment [NASA-CR-94356] 12 p1825 N68-22681 Mirror, and cylindrical lens optics for producing light plane projection of high velocity flows [DLR-MITT.-67-16] 08 p1177 N68-17485 16 p2680 N68-27590 Analytical determination of plastic deformation and yield stress of metallic projectiles and targets on impact Procedures for preparing cleaning and germicidal solutions and cleaning equipment for spacecraft Design, construction, and installation of wide angle Design, con-television projector television projector [NAVTRADEVCEN-695-2, V. 1] [NAVTRADEVCEN-695-2, V. 1] 23 p4061 N68-36517 17 p2980 N68-28666 One dimensional analysis of hypervelocity impact of pellet onto thin bumper using finite difference techniques [NASA-CR-94381] 12 p1825 N68-22682 NATO AGARD information bulletin summarizing research activities, locture series, publications, projected meetings, and panel reports for 1968 [AGARD-IB-68/1] 13 p2174 N68-23457 APOLLO PROJECT
ARGUS PROJECT
DEFENDER PROJECT
GEMINI PROJECT
MERCURY PROJECT
ORBITER PROJECT
DEDT 17 p2981 N68-28773 [NASA-CR-54725] Projectile cratering in granular material applied to mar craters and surface layers study Technical and management studies defining Apollo applications program payload integration tasks [NASA-CR-61762] 13 p2155 N68-23586 18 p3161 N68-29693 PROJECTILE PENETRATION
U TERMINAL BALLISTICS PERT
RADIO ATTENUATION MEASUREMENT
PROJECT
RANGER PROJECT
RESEARCH PROJECTS
ROYER PROJECT
SATURN PROJECT
SURVEYOR PROJECT
VOYAGER PROJECT Management report on university research projects on properties of metallic and nonmetallic materials, nemiconductors, inorganic compounds, and noncrystal-PROJECTILES NT HYPERVELOCITY PROJECTILES NT SABOT PROJECTILES [AD-660385] 13 p2137 N68-23860 Remote and rapid soil investigations using high speed earth penetrating projectiles [SC-DC-67-1922] Multiproject scheduling system using forecasting and sequencing technique 01 p0057 N68-10379 14 p2377 N68-25125 Exploding foil gun technique for simulated meteo-id protection Project management and experimental designs for ESRO 2 satellite PROLATE SPHEROIDS roid protection [NASA-TN-D-4259] 02 p0275 N68-11355 Sensitivity of hypervelocity impact mechanisms to projectile-plate configurations 15 p2565 N68-26927 Congressional hearings on implementing United tates participation in International Biological Program and determining realistic funding mode 17 p2990 N68-28962 03 p0424 N68-12665 PROLONGATION Impact effect estimates for flow model of wing stabilized projectiles (DLR-FB-67-92) Group dynamics, human performance and behavior in team training experiment [AIR-E1-6/68-FR] 18 p3013 N68-29694 08 p1106 N68-17558 [NASA-CR-90105] Gold epoxy projectiles accelerated into lead, hard and soft aluminum, and rigid polyurethane foams to determine crater formation [NASA.c.R-93294] 08 p1253 N68-17787 PROMETHIUM Preparation and crystal chemistry of promethium compounds, vapor phase hydrolysis of actinide chlorides, lattice constants of lanthanides, and uranium dioxide and radium studies [BMWF-PBK-67-76] 07 p0953 N68-16172 Project management - proposal to increase project (ESRO-TM-115) 19 p3388 N68-31342 Gun-launched projectiles and rockets for upper at-Flight experiments resumes managed by MSFC in fluid behavior, materials, atmospherics, optical stechnology, environmental engineering, assembly and maintenance, and thermodynamics [NASA-Th4-61148] 19 p3366 N68-31800 13 p2047 N68-23413 Internal ionization in nuc um 99 and promethium 147 Target pressure and damage data from impacts by explosively propelled aluminum projectile [NASA-TM-X-1597] 15 p2566 N68-25819 15 p2566 N68-25819 In-flight telemetry monitoring system to test fuse ower supplies on ordnance projectiles HDL-TM-68-2] 15 p2469 N68-26637 Air Force research projects [OAR-68-0004] 19 p3389 N68-31865 Planning and managing advanced technology programs for future aeronautical and space missions 20 p3590 N68-33172 HDL-TM-68-21 JINR-P6-3540] Acoustic array with capacitor microphone sensors for sonic observation of gun probe projectiles [ECOM-5166] 15 p2471 N68-26926 Research progress on gamma crystal growth, neodymium pruranium 234 recovery, X ray di apectroscopy, and polyatomic me [MLM-1443] Stop motion flash photography of artillery projectiles in flight [LA-3874-MS] 16 p2658 N68-27025

Operation and organization of Advisory Group for Aerospace Research and Development /NATO/ [AGARD-GI-1968] 20 p3615 N68-33590

Evaluation of shipping and transportation, site operations, air operations, and government coordination during Line Islands experiment to collect tropical meteorological data (NCAR-TN-30) 21 p3684 N68-33934

Operation of ESRO space docum umentation service 21 p3797 N68-34084

ESRO 2 satellite project and progress in ESRO operational program 21 p3766 N68-34096

Management and characteristics of ESRO 2 satellite 21 p3777 N68-34097

ELDO perigee-apogee prop stage of European 1 spacecraft ulsion system for fourth 21 p3759 N68-34239

Project management and phase difference and field tensity patterns for Omega system noise and antenna study [P&B-PUBL.-979-8, V. 2]

21 p3722 N68-34748 Improvement of effectiveness and economics of satellite project by proposed optimization management

[ESRO-TM-132/ESTEC/]

23 p4192 N68-36920 Congressional hearing on Boeing-TIE contract to manage Apollo project integration 23 p4192 N68-37382

NATO advisory group for aerospace research and evelopment information builtetin AGARD-IB-68/12] 24 p4357 N68-37999 [AGARD-IB-68/12] PROJECTED AREAS

U AREA U PROJECTIVE GEOMETRY

Vehicle in partially evacuated tube propelled by pressure difference

16 p2751 N68-27691 Plate-gap model of porous solid and application to reduced density projectile impact [NASA-CR-1140] 19 p3381 N68-31912 PROJECTION

Reconstructing polyhedrons from perspective pro-[NASA-CR-94932] 15 p2491 N68-25943

PROJECTIVE DIFFERENTIAL GEOMETRY DIFFERENTIAL GEOMETRY

PROJECTIVE GEOMETRY NT MERCATOR PROJECTION

Transvector relations in metric spaces of charac-ristic two 04 p0531 N68-13492

Geometrical techniques for mechanized piotting of second order curves on lofts 04 p0517 N68-13860

Descriptive and projective geometric coordinates used to resolve facial characteristics in photographs 05 p0761 N68-14397

Projective geometry and algorithm used in graphic termination of features on photographs 05 p0761 N68-14398

Geographic coordinates of noctilucent cloud projections on earth surface using single photographs [NASA-TT-F-11522] 16 p2638 N68-28253 Cartan method used to study general net of curves on surface in three dimensional projective space 18 p3107 N68-30706

Geometric relations between satellites and sun with probability assumptions for intersatellite recognition [RM-4866-PR] 23 p4176 N68-36346

adband video amplifier for television

Logic, diagrams, and adjustments manual of elec-ronic measuring projector for bubble chamber film

05 p0662 N68-14419

Prolate spheroidal wave functions and their applica-tion to planar aperture antenna pattern synthesis 10 p1495 N68-19683

Effect of repetitive feeding over extended periods of ne on acceptability of selected metabolic diets metabolic diets 01 p0009 N68-10200

07 p0953 N68-16172 clear beta decay of techneti-

11 p1750 N68-20756

New isomeric states by decay of samarium 140, marium 141, promethium 140 and decay of omethium 142 12 p1935 N68-22712

amma rays, plutonium 238, m promethium separation, ray diffraction, fast neutron nic molecular 17 p2843 N68-29171

Promethium salts prepared crystallographic methods [BMWF-FBK-68-03] ared and studied by X ray 17 p2843 N68-29207

PROMETHIUM ISOTOPES

Promethium isotope heated using heat shield package to m. [NASA-TM-X-63018] ntain temperature 04 p0564 N68-13134

Gamma ray and internal conversion electron spectra of promethium 143, 144, 146, and 148 [JINR-P6-3471] 05 p0720 N68-14814 Isotopic promethi [BNWL-SA-1309] m oxide heat sources 07 p1029 N68-16535

Neutron-neutronhole states in cerium 140, and well isolated resonances in promethium 141 that are isobaric analogs of low-lying states in cerium 141

10 p1566 N68-19730 Promethium 147 radioisojet microthruster tested th ammonia propellant at high temperatures 41 M-14371 15 p2500 N68-25946

[MLM-1437] Promethium isotopic fuels, and fabrication, impact testing, and encapsulating of advanced manned strategic aircraft heat source [BNWL-83] 18 p3137. N68-30702

Internal conversion electrons from decay of eodymium 147 to promethium 147 by neutron ir-

20 p3545 N68-32969 Melting point, thermal expansion and diffusivity, and electrical resistivity of promethium sesquioxide [BNWL-SA-1796] 20 p3533 N68-33289

Promethium purification and conversion equipment and techniques, properties of promethium oxide, and radioisotopic heal source characteristics (BNML-680) 23 p4013 N68-36940

sun with 68-36546 television

INDEX

68-11941 8-14419

cing light 8-17485 de angle 8-36517

EMENT

applica--19683 riods of -10200

16172 chneti-20756

140, ay of 22712 n 238, ration, eutron 29171 X ray

29207 rustor 3134 ectra 4814

6535 well obar-9730 ested 5946

pact 0702 af n ir-2969

289 nent and 950

and

PROMINENCES

NT SOLAR PROMINENCES

Balmer emission line widths calculated for fine struc-ture of prominences 05 p0734 N68-14913

PRONY SERIES Relaxation spectra calculations for viscoelastic materials and Proney or Dirichlet series coefficients [NASA-CR-88252] 21 p3708 N68-34247

PROOFS U PROVING

PROPAGATION [EXTENSION]
U CRACK PROPAGATION
U FLAME PROPAGATION

PROPAGATION MODES Multiple stream method for instability analyses on

07 p1063 N68-16950 X hand propagation characteristics of reciprocal latching ferrite loaded waveguide phase shifter configu

08 p1154 N68-18170 (NRL-MR-1836) Electron number density, structure, and time varia sility of interplanetary media determined by radio propagation effects on Pioneer 6 and 7 spacecraft to [NASA-CR-93777] 10 p1587 N68-19889

m and dynamics of viscous High mode propaga aid transmission lines 10 p1516 N68-19974

Propagation modes of nighttime micropulsation ac-tivity over earth surface [REPT.-68-02] 10 p1523 N68-20227

Propagation and plasma filled waveguides model derived by Boltzmann equation [NASA-CR-93914] II p1761 N68-20996

Nonreciprocal solid state plasma waveguides in ansverse magnetic fields 11 p1678 N68-21791

Propagation characteristics of pi 2 geomagnetic -12 p1867 N68-22239

Model for cosmic ray propagation with particle mir-[NASA-CR-94593] 13 p2146 N68-23752

Fourier expansion of hyperbolic and Bessel functions for reflections of modes in infinite plates and cylindri-15 m2568 N68-26011

Propagation of electromagnetic disturbances in dielectric constant with sinusoidal variations 16 p2712 N68-27114

Inhomogeneous numbers for longitudinal propaga-tion in magneto-ionic medium 16 p2734 N68-27166

Transmission line model for analysis of planar equi-19 p3235 N68-30900

PROPAGATION VELOCITY Velocity calculations for ablating metal spheres traveling in atmospheric reentry simulator [ISL-T-1/67] 06 p0879 N68-15271

Propagation velocities and quenching of elastic waves in sedimentary rocks 06 p0835 N68-15382

Shock wave propagation and wave front velocity and ecay in anisotropic viscoelastic bodies bodies 17 p2980 N68-28675

Propagation velocity and at ompressional and torsiona etohydrodynamic waves attenuation coefficients for nal propagation of mag-[ER-38] 17 p2949 N68-28966

Detonation wave propagation, drop size effects on velocity, and streak schlieren photography on drop shattering in liquid fuel-oxygen mixture [NASA-CR-72421] 18 p3188 N68-30206

PROPANE Inverse flame cone method of measuring turbulent urning velocity of propane-air mixtures 02 p0286 N68-11688

Gravimetric, and mass spectrometric analyses of hydrocarbon fuel chemisorption on platinum catalyst of fuel cell [AD-661381] 04 p0447 N68-13027

04 p0447 N68-13027 Combustion, and mixing processes in turbulent diffusion flame of propane-air mixture 06 p0924 N68-15044

Propane satellite control system with nitrogen con-trol unit 08 pl199 N68-17418 Bubble density and growth in propose 08 p1216 No8-18152

Additives, oxidizer blend, and plation for solid rocket motor 260-SL-3 [NASA-CR-72262] 06 p0896 N68-16051

SLAC-TRANS-641

ygen-propane mixtu [ORNL-TM-2094]

Shock tubes driven by

Kinetics and chemical per reaction between propane an [TIL/T-5757]

is of an

PROPELLANT ACTUATED DEVICES

PROPELLANT BINDERS
NT SOLID ROCKET BINDERS

PROPELLANT ADDITIVES
NT SOLID ROCKET BINDERS

Dynamic mechanical properties of soft binder materials with dispersed small aluminum particles [AROD-3263-16-E] 02 p0276 N68-11540 Saturated hydrocarbon polymeric hinder for ad-saced solid propellant and hybrid solid grain NASA-CR-93172] 08 p1228 N68-17259

on pair production by high energy electron propane bubble chamber

nching potentials for diffusion and kinetic ne flames, and influence of electric fields on ion combustion modes of gaseous fuel 18 p.3185 N68-29845

termining fugacities of hydrogen in hydrogen and ane mixtures using semipermeable membrane

propane as hydrogen atom scavenger [JUL-523-PC] 22 p3830 N68-35756

Glass filament-wound lightweight reinforced gas generator body for propellant actuated devices [FA-R-1862] 04 p0448 N68-13086

Summary on manned propulsion devices for earth and space applications

12 p1934 N68-22672

17 p2867 N68-28860

neable membrane 19 p3221 N68-30967

rities of slow nitration

itrogen dioxide 19 p3231 N68-31918

10 p1587 N68-20573

in at 2062 A in presence of

plosion of detonable ox-

Saturated hydrocarbon polymeric binder for solid propellant and hybrid propellant grains [NASA-CR-96133] [9 p3357 N68-31729 19 p3357 N68-31729 Saturated hydrocarbon polymeric binder for advanced solid propellant and hybrid solid grains [NASA-CR-96284] 20 p3577 N68-32601

PROPELLANT CHEMISTRY

Processing data on motor casings, propellant chemi-l ingredients, and grain restrictions for Black Brant 2B rocket engine [CARDE-TN-1758/67] 02 p0262 N68-11584

PROPELLANT COMBUSTION

NT SOLID PROPELLANT IGNITION

Empirical laws for hybrid combustion of lithium hydride with fluorine in small rocket engines [DLR-FB-67-57] 01 p0147 N68-10100 Hypergolic ignition and combustion phenomena in AcroZINE 50 nitrogen tetroxide propellant systems [NASA-CR-65794] 01 p0153 N68-10946

Modified line reversal pyrometer for measuring temperature profiles within gaseous reaction zones located above burning surfaces of composite solid propellants (NASA-CR-90226) 01 p0127 Nes-10995

Hydrogen-oxygen ch rocket engine combustio [NASA-TN-D-4250] al maction kinetics in 02 p0285 N68-11642

[AFOSR-67-1767] rming solid rocket propellant
04 n0562 N68-12984 Liquid propellant or teractions after explosi [NASA-CR-91531] n, and atmospheric in-eball formation 04 p0597 N68-13618

Numerical analysis of gas prurning area during ignition tyrogen ignited solid propellan uire, temperature, and insient in hypothetical rocket engines 05 p0732 N68-14368 NASA-CR-91778]

ties in solid propelle 95 ±0754 N68-14370 rface reaction effects on aco stic response func-

tion of composite sol (UTC-2136-TSR2) 06 p0926 N68-15640 fiction using nonlinear

NASA-CR-9201 06 p0927 N68-15833 Combustion physics of solid propellants, and modes OF CHIROCIATION 07 p1097 N68-16767

tion of ammonium propolism defingration 07 p1072 N68-17187 Esperimental suppression of gaseous flame of solid propellant by arc image furnace radiation [REPT.-799] 09 p1447 N68-18366

Design and fabrication of combustion and test stand for evaluating composite propulsion system [NASA-CR-93548] 09 p1415 N68-19123

Pulsed ruby laser holograms of reacting liquid NASA-CR-936621 09 p1415 N66-19439

elocity coupling mechanisms Dynamic pressure and in steady-state solid prop [NASA-TM-X-52419] 10 p1613 N68-20042

cteristics of liquid film contours, liquid propel-gnition of solid propel-[NASA-CR-94386] 12 p1962 N68-22683

High pressure combus fuel droplet burning in air [NASA-CR-72399] characteristics of single 14 p2371 N68-24810 combustion processes by

Control of liquid prop INASA-TM-X-523341 15 p2573 N68-25689 liquid rocket combustor d oxidizer-rich mixtures 15 p2547 N68-26865 Performance evaluation of with high chamber pressure as [JPC-442]

Chemical heating of hydr numbers by combustion ngen in rocket combustion of lithium hydride with IDLR-MITT.-68-09] 16 p2798 N68-28324

Rapid linear pyrolysis of the intense heat flux levels to sim [NASA-CR-66616] rmoplastic solid fuels by late combustion 17 p2985 N68-28607

model and droplet evapora-is related to nonlinear com-propellant rocket motors 19 p3359 N68-31405 Fluid dynamic pancake m tion and combustion analysis bustion instability in liquid pr (NASA-CR-96014)

Combustion characteristics of nitrate ester onopropellents at ambient gas temperatures and TM-705.9161-03] 19 p3357 N68-32077 Composite solid propellant flame microstructure

[NASA-CR-66677] 20 p3612 N68-33440 Pulsed ruby laser holograms of hypergolic rocket propellants combustion processes [NASA-CR-97225] 23 p4161 N68-36641

Role of nonstationary sionality of component process of condensed mi [ONI-TRANS-2631] aracter and non-one dimen-neformation in combustion 24 p4356 N68-38291

PROPELLANT DECOMPOSITION

Hydrazine properties, catalysts for hydrazine decon position, catalytic reaction chambers, and monoprope ant hydrazine thrustor [NASA-CR-92742] 07 p1071 N68-1634 07 p1071 N68-16344

Computer program repre-eady state model of di ting two dimensional buted-feed catalyzed m chamber 07 p1096 N68-16663 NASA-CR-92988]

tics of nitrate ester TM-705.9161-03] 19 p3357 N68-32077

nputer program of cata-reaction chamber 23 p4160 N68-36029 Mathematical model a lyzed hydrasine decomp (NASA-CR-97097)

ROPELLANT EVAPORATION

nerical analysis of dynamic response of propel-NASA-TM-X-52195] 16 p2750 N68-27410 nts for volatility analy-Vaporization rate measurer sis on hydrocarbon fuels at low 16 p2748 N68-27857

PROPELLANT GRAINS

Processing data on motor casings, propellant chemial ingredients, and grain restrictions for Black Brant B rocket analysis [CARDE-TN-1758/67] 02 p0262 N68-11584 Stress analysis for vi cylinder with star shape (FTD-HT-23-591-67) 06 p0923 N68-15946 Saturated hydroc vanced solid propell (NASA-CR-93172) lymeric binder for ad-brid solid grain 08 p1228 N68-17259 Criteria for solid pro plication of cumulation REPT.-1159-810-21 09 p1412 N68-18426 Three dimensions stresses in split cylind (REPT.-14) ded propellants 10 p1607 N68-20148

Dow Evaluation of Saturn 2B vehicle AS-203 low gravity liquid hydrogen orbital experiment [NASA-CR-94045] 11 p1789 N68-21542 (REPT

SUBJE

Con

for am

Aero

rectan with p

Lift

Win

Varyin INAS

Pro tilt wir [DCR

Lift

(LR-5

ROPE

UF

PROPE

NT NT NT

Los

Air

reduc [NAS

Me mode [USA

PROPE

PROPI

cal p

PROP

De

PROP

Pr

C

H

lima [NA

H

EDEC (CE

jCE.

PROPEL

PROPELLANT TRANSFER Criteria for design, fabrication, inspection, and ser-vicing of liquid fluorine propellant feed system com-

NASA-CR-720631 01 p0129 N68-10966 Static and dynamic structural analysis of cryogenic propellant load systems at Launch Complex 39 [NASA-CR-90212] 01 p0129 N68-10971

AEROZINE
AIRCRAFT FUELS
CASE BONDED PROPELLANTS
COLLOIDAL PROPELLANTS
COMPOSITE PROPELLANTS
CRYOGENIC FLUIDS
CRYOGENIC ROCKET PROPELLANTS
DOUBLE BASE ROCKET PROPELLANTS NT

PROPELLANT TESTS

ROPELLANTS

AEROZINE

FLOX

FLOX
GASEOUS ROCKET PROPELLANTS
GELLED PROPELLANTS
GELLED ROCKET PROPELLANTS
HIGH ENERGY PROPELLANTS
HIGH TEMPERATURE PROPELLANTS
HYBRID PROPELLANTS
HYPERODIC ROCKET PROPELLANTS
HYPERODIC ROCKET PROPELLANTS
LIQUID DAVYOEN
LIQUID OXYOEN
LIQUID ROCKET PROPELLANTS
MONOPROPELLANTS
PLASTIC PROPELLANTS
PLASTIC PROPELLANTS
PLASTIC PROPELLANTS
RDX NT NT

NT ROCKET PROPELLANTS
SOLID PROPELLANTS
SOLID ROCKET PROPELLANTS NT

NT STORABLE PROPELLANTS Analysis and cost estimates of lunar based propellant synthesis 08 p1237 N68-17360

ototype propellant leakage detection system for space flight propulsion systems [NASA-CR-92086] 12 p1877 N68-22780 Promethium 147 radioi t microthruster tested

m 147 radiomojes masseratures is propellant at high temperatures 15 p2500 N68-25946 with ammonia [MLM-1437]

Thermodynamic analysis of spacecraft thermal control and pressurization requirements for Mars Orbiter and Mars Excursion Module missions [NASA-CR-96740] 21 p3758 N68-34079

Propellant mixtures effects on magnetoplasma arc t, and velocity measurements of ioms and neutrals NASA-TM-X-60513} 21 p3757 N68-34757 jet, and velocity measur [NASA-TM-X-60513]

PROPELLER BLADES

Performance prediction and stress measurements on isolated VTOL-type propeller blade tested in free air [CAL-IIII-1846-S-2] 03 p0299 N68-11962

Ship half geometry, nozzle design, and Voith-chaelder propeller blade movement Schneider propel 04 p0585 N68-12807

Prediction theory for inflow through propeller with nite blade number moving at right angles to its axis 04 p0440 N68-13036

Direct method for determining overall forces and ioments of inclined propellers 04 p0445 N68-13656

Wind tunnel tests on compound helicopter to deter-mine nature of aerodynamic interference between ro-tor, fuselage, and various wings [SER-50474] 11 p1622 N68-20658 Stability analysis of two-bladed rotor on anisotropic

[NASA-TT-F-11660] 14 p2179 N68-24474

Wind tunnel tests on rotor blade performance and structural load effects under extreme operations [USAAVLABS-TR-68-3] 24 p4195 N68-38340

PROPELLER DRIVE
U HELICOPTER PROPELLER DRIVE PROPELLER EFFICIENCY

Cavitation performance and open water evaluation of variable pitch supercavitating propeller [NSRDC-1636] 03 p0334 N68-11972

Equations for determining befficiency of pump-type propell [JPRS-43721] nic characteristics and 04 p0516 N68-13433 Geometric characteristics of incli nclined propeliers 12 p1811 N68-22490

Mathematical model for prediction of axial velocity through propellers moving perpendicular to axes 12 p1812 N68-22491

eric binder for solid Saturated hydrocarbon polymeric binder for solid propellant and hybrid propellant grains [NASA-CR-96133] 19 p3357 N68-31729

Three dimensional photoelastic analysis of specific propellant grain geometry subjected to restrained shrinkage 21 p3757 N68-33624

PROPELLANT MASS RATIO

Fuel consumption ar takeoff aircraft propulsi [NASA-TM-X-60507] imption and weight analysis for vertical ft propulsion characteristics 14 p2338 N68-25279

PROPELLANT OXIDIZERS
U ROCKET OXIDIZERS

PROPELLANT PROPERTIES

System and compone space-storable propellas [NASA-CR-91808] os p0730 N68-14346

Histopathological studies ontaining propellant toxicol es on hydrazine or fluorine cology in man and animals 10 p1472 N68-20566

Chemical properties ar dimethylhydrazine/nitrogen bination for Europa 1 rocket [NASA-TT-F-11656] and safety measures for a peroxide propellant com-17 p2961 N68-28629

PROPELLANT SENSITIVITY

Particle size effect on explosive behavior of amo (NOLTR-67-112) 06 p0787 N68-15323 Theoretical and experimental reaction and vapor supply mecha explosive sensitivity stal studies on chemical echanisms in propellant

explosive sensitiv 19 p3226 N68-31347 PROPELLANT SPRAYS

Spray flame configuration formed by concurrent or countercurrent jet fuel injection into high temperature airflows 04 p0569 N68-13858

PROPELLANT STORABILITY

Performance of low thrust storable bigropellant ontrol system 10 p1585 N68-20064 thrustors in spacecraft reaction or [NASA-TN-D-4416] Mathematical analysis of rot of space stored liquid cryogens [RM-5693-PR] is of rotational destratification 24 p4355 N68-38144

PROPELLANT STORAGE

Flight-prototype a eed system using ti plenum chamber [NASA-CR-91278] 04 p0564 N68-13235

Design and performance of cryogenic insulation materials for spacecraft cryogenic storage tanks [NASA-TM-X-53670] 05 p0750 N68-14651 insulation for spacecraft

05 p0756 N68-14658

Thermal conductivity, specific heat, and weight by shame of insulating foams for rocket tanks filled with [NASA-TT-F-11146] 06 p0924 N68-15243 Preliminary parametric analyses on earth orbital torage of liquid hydrogen propellant for manned Mars shicle

[NASA-CR-92537] 06 p0896 N68-15824 Off-on dielectroph propellant orientation in low gravity environm [NASA-CR-93334] 08 p1220 N68-17955

Hydrazine-based bipropellant liquid propulsion stem exposed to ethylene oxide and heat sterilization [NASA-CR-94041]

11 p1777 N68-21076 Rigid, open cell polyure ne foam as cryogenic et for long term storage of cryogenic propellant [NASA-TM-X-52332] 15 p2488 N68-26274

[NASA-TM-X-61186] 21 p3760 N68-34750 PROPELLANT TANKS

Stress analysis of ser [NASA-CR-61183] and ogival tanks 01 p0141 N68-10238 m and multilayer Mylar ant tank Composite polyurethan foil insulation for liquid pr ot tank 01 p0138 N68-10328

ign and fabric minum alloy propellant raction control system 01 p0142 N68-10448 tank shells for Apollo exid [NASA-CR-65803] lanks, and functional tests liquid propulsion system Module truss, prope for sterilizable biprop

(NASA-CR-90333) 02 p0261 N68-11176 ty of multicell fuel tanks for recoverable lifting by (NASA-CR-91077) 03 p0416 N68-11934 Precision glass-bead peening equipment for propel-lant tank surface corrosion protection [NASA-TN-D-4288] 04 p0514 N68-12890

gation of tita alloy fracture in nitrogen oxide for hunar orbit [NASA-CR-66524] 05 p0676 N68-14506

Test evaluation of compulsion bladder for nitrogelant tank of lunar orbiter [NASA-CR-66535] ite Teflon-aluminum ex-etroxide oxidizer propel-05 p0732 N68-14858

Finite difference methors on lined tanks of rota d for fuel sloshing mode anai-05 p0730 N68-14998 FM-372-81

g in cylindrical tanks in-mall liquid depth 06 p0826 N68-15452 Simulated low gravity sloshin cluding effects of damping and [NASA-CR-61469]

dynamic forces and mo-ocellant tanks with rota-Digital computation of hydrody sents for liquid sloshing in prop [NASA-CR-61540] 07 p0984 N68-16428

Vapor ingestion during liquid outflow in scale model Centaur liquid hydrogen tank [NASA-TM-X-1482] 09 p1330 N68-19225

Design, manufacture, ar prefabricated, vacuum-evacuate 70-inch diam cryogenic test tank [NASA-CR-61675] and application of ated, insulation panels to 10 p1533 N68-19635

Mathematical model for simulating pendulous action of liquids sloshing in propellant tanks [NT-6/68/EN] 10 p1517 N68-20388

Integral tanks for cryogenic pr [ELDO/SP/67/4] opellant storage 10 p1586 N68-20400 FORTRAN 4 cor m for calculating temperature profiles in prop [NASA-TM-X-1556] 11 p1777 N68-21267

Dynamic stability and p gitudinally excited liquid p [NASA-CR-61725] etric resonance of ion-lant tank model 12 p1974 N68-21873 Engineers handbook applicable in prediction of low gravity behavior of liquids in rocket propellant tanks [NASA-CR-92083] 12 p1959 N68-22463

Radio frequency mass gaging techniques for measur g propellant mass content in Apollo and luna ing propellant man module tanks [NASA-CR-92091]

12 p1959 N68-22879 Liquid propellant behavior under space flight condi-tions and predicting Apollo spacecraft liquid stability [NASA-CR-92084] 12 p1959 N68-23024

ng method for Apollo propellant on and propellant tank drying 13 p2074 N68-23526 Vapor phase clear system decontaminat [NASA-CR-62068]

Pressure-cycled vapor phase cleaning method for Apollo service module propellant tank decontamina-INASA-CR-620691 13 p2144 N68-23541

Simulated titanis re segment lower bulktitanium alloy go rn S-IC fuel tank head for Saturn S-10 [NASA-CR-61638] 13 p2074 N68-23723

Model study and FORTRAN program for therm ratification in pressurized cryogenic liquid propella tanks [FM-348-O] 14 p2374 N68-25335

Theory and equations for propagating pressure waves in liquid filled cylindrical shells [NASA-CR-61884] 18 p3062 N68-30087 18 p3062 N68-30087 Thermal degradation of high performance multilayer sulation on liquid hydrogen tank in vicinity of

NASA-TN-D-47781 20 p3611 N68-33167 Polymer positive exp bladders for liquid ox-

NASA-CR-724181 20 n3579 N68-33321 Analytical and experi at distribution during ible stace vehicle a possible space vehicle NASA-TN-D-48281 22 p3857 N68-35104

Drop tower investig spherical containers [NASA-TM-X-1639] of liquid recrientation in 22 p3857 N68-35114

Patch-type tests of ethylene-propylene rubber expul-sion bladder material for thermal sterilization compat-bility studies

23 p4162 N68-37411 Mathematical analysis of rotational destratification of space stored liquid cryogens [RM-5693-PR] 24 p4355 N68-38144 24 p4355 N68-38144

Literature survey and impact tests on tankage materials in liquid propellants [DAC-59868-F1] 24 p4269 N68-38171

Design and environmental testing of thermal condi-tioning unit for liquid hydrogen propellant tank. [NASA-CR-72365] 24 p4337 N68-38293

A-982

low gravity N68-21542

INDEX

N68-10966 cryogenic 19 168-10971

ANTS

TS NTS

opellant 8-17360 tem for 3-22780 tested -25946

al con-Orbiter -34079 ma arc als -34757 its con

air 11962 Voith-12807 r with xis 13036 s and 13656

deter-20658 tropic 4474 e and 8340

1972 and. 3433

1490 xity 491

Downstream diffusion control on ducted fan propel-12 p1812 N68-22494

Predicting overall thrust and power of air propellers operating at zero advance ratio 18 p3003 N68-30465

Comparative performance data on open propeller, prouded propeller, and turbofan propulsion systems in army aircraft mission requirements with Mass 36332 for army aircri IDCR-2481 ments 23 p4160 N68-36232

PROPELLER SLIPSTREAMS

Aerodynamics of wing planforms and vertical takeoff aircraft - jet lift system effects, lift augmentation for rectangular wing, and design of recoverable rockets rectangular wing, and with parawings [DLR-MITT.-67-18] 05 p0602 N68-13982

Lift augmentation by propeller slipstream jet on boundary layer of rectangular wing 03 p0602 N68-13984

Wind tunnel determination of longitudinal force characteristics for STOL aircraft scale models with varying wing aspect ratios (NASA-TN-D-4448) 09 p1271 N68-18771

Propeller slipstream effects on wing performance of tilt wing aircraft [DCR-234] 11 p1620 N68-21564 Lift, drag, and pitching moment data for wings im-nersed in propeller slipstream obtained in wind tunnel 22 p3801 N68-35923

PROPELLER SYNCHRONIZERS
U PROPELLERS
U SYNCHRONIZERS

PROPELLERS
NT SHROUDED PROPELLERS
NT TILTED PROPELLERS
NT VARIABLE PITCH PROPELLERS

Balance systems and techniques for model scale measurement of up to six components of fluctuating peopeller forces produced by nonuniform inflow condi-REPT.-23501

05 p0662 N68-14659 Longitudinal stability characteristics of dynamic scale model of four propeller tilt wing vertical takeoff aircraft [REPT.-774] . 08 p1114 N68-17768

Aircraft propeller balancing during operation to reduce structural vibrations [NASA-TT-F-11411] 18 p3177 N68-29958 Feasible weight reducing propeller systems for vertical takeoff aircraft [USAAVLABS-TR-68-33]

19 p3197 N68-30964 Aerodynamic characteristics of tilt wing propeller model at slow speed and high angles of attack [USAAVLABS-TR-67-79]

21 p3620 N68-33646

PROPHYLAXIS Protective effects of prophylactic and therapeutic complexes in dogs exposed to ionizing radiation 08 pl 131 N68-17750

PROFIONIC ACID

Nitrogen hydrogen radicals in irradiated carrazide and X ray irradiation of alpha-ureidopropionic acid [TID-24147] 15 p2417 N68-26552 Cyanoacetylene synthesis improvement and chemi-

cal properties [NASA-TT-F-11771] 19 p3229 N68-31708 PROPORTIONAL CONTROL

Device for converting voltages into proportional 06 p0810 N68-15463

PROPORTIONAL COUNTERS

Proportional counter and ionization champer to measuring ionization energy in gases 01 p0100 N68-10913

Carbon dioxide proportional counter device for radiocarbon dating (BMWF-FBK-67-32) 03 p0345 N68-12730

High angular resolution studies of celestial X ray sources and design of aspect camera, proportional collinators, telemetry, and attitude control systems [NASA-CR-92697] 07 p1078 N65-16250

Helium 3 proportional counter for extending neutron apectra energy range [CEA-R-3310] 11 p1701 N68-21747

High-sensitivity proportional counters for measuring beta emitting radioactive gases [CEA-R-3403] 12 p1875 N68-22612 Performance characteristics of beryllium trifluoride proportional counter with aluminum cathode after irradiation in Triton reactor [CEA-R-3343] 12 p1877 N68-22716

Design and performance of proportional counter for measuring beta radiation [CEA-R-3362] 14 p2259 N68-25384 14 p2259 N68-25384

in liquids [ISS-67/43] 16 p2605 N68-27700

FORTRAN computer code and associated subrou-tines for analyzing experimental recoil proton spectrum obtained from spherical gas filled proportional counter [AWRE-0-9/68] 17 p2914 N68-28469

Fission chamber pulse processor, and proportional counter for nuclear reactor control system [CONF-661020-18] 18 p3118 N68-30676 Theory and construction of tissue-equivalent propor-onal counter for dosimetry in space 19 p3212 N68-32135

Proton recoil spectrometer to measure water cooled reactor spectrum [IN-1054] 20 p3530 N68-32684

Position sensitive proportional radiation counters
[ANL-TRANS-621] 21 p3693 N68-34480 or for X ray emission detection of lunar surface elements 22 p3958 N68-34953 Proportional counter for X and chemical analysis of lunar se [NASA-CR-96885]

Beam-profile analyzing apparatus with proportional multiwire chambers for vertical and horizontal planes [CERN-68-33] 23 p4060 N68-36014

PROPRIOCEPTION NT AUTOKINESIS

Visual display in fixed cockpit piloted simulator ways of measuring pilot vehicle performance in landing and approach control [NASA-TM-X-59806] 14 p2207 N68-25339

14 p2207 N68-25339 PROPRIOCEPTORS

Effects of prolonged bed rest and physical exercises in human muscle tone and proprioceptive reflexes 21 p3633 N68-33918

PROPULSION

NT CHEMICAL PROPULSION

NT ELECTRIC PROPULSION

NT ELECTRIC PROPULSION

NT ELECTROMAGNETIC PROPULSION

NT HERE PROPULSION

NT HYBRID PROPULSION

NT HYBRID PROPULSION

NT JET PROPULSION

NT JET PROPULSION

NT MARINE PROPULSION

NT MARINE PROPULSION

NT NUCLEAR ELECTRIC PROPULSION

NT PLASMA PROPULSION

NT PLASMA PROPULSION

NT SPACECRAFT PROPULSION

Space programs supporting research and development in systems, guidance and control, engineering mechanics, propulsion, and telecommunications mechanics, propulsio [NASA-CR-91047] 03 p0414 N68-12306

Propulsion research and advanced concepts 03 p0411 N68-12317 Radioisotopic heat sources used for propulsion and integrated power and application for space missions [DGRR/WGLR PAPER-66-072] 06 p0875 N68-15469

Nuclear physics, materials science, propulsion, telecommunication, guidance, and systems analysis [NASA-CR-92558]

Liquid and solid rocket propellants and propulsion INASA FACTS S-1/8-671

06 p0899 N68-16054 Single versus multiple engine configurations for Voyager capsule bus propulsion [NASA-CR-94539] 13 p2142 N68-23181 13 p2142 N68-23181

PROPULSION CALCULATIONS
U MATHEMATICAL MODELS

PROPULSION SYSTEM CONFIGURATIONS

Spacecraft configurations and propulsion systemodule design for Voyager project, based on luna module descent stage applications [NASA-CR-89997] 01 p0138 N68-1023

01 p0138 N68-10239 Lightweight cryogenic He cascade pressurization concept for Apollo service propulsion system [NASA-CR-65837] 02 p0262 N68-11585

Characteristics, applications and technology of radiothermal propulsion and isotopic propulsion en-

ELDO/SP/64/191 05 p0691 N68-14026 Attenuation rate effects on performance and con-lgurations of turbojet engines, propulsion system, and European Aerobus

06 p0766 N68-15100 Exposure of amembled and fueled bipropellant liquid rocket propulsion system to ethylene oxide and heat serilization environments (NASA-CR-93191) 08 p1230 N68-17407

Feasibility of cruise fan propulsion systems and as-sociated power transfer systems for compound and composite aircraft (D8-0440) 08 p1114 N68-17763

Structural design and engineering mechanics of baseline Voyager spacecraft, propulsion support, and planetary scan platform [NASA-CR-93562] 09 p1434 N68-19104

Thermophysical property measurements on ablative taterials for Apollo spacecraft propulsion system con-[NASA-CR-92018] 10 p1612 N68-19863

ion devices for earth 10 p1587 N68-20573

Review papers of con ropulsion system configur rence presentations on ions of air breathing en-and supersonic aircraft 11 p1777 N68-21667 gines for subsonic, tra [DLR-MITT.-67-23]

Critical review of current stand, theories, and experients on aerodynamics of aircraft engine installation 11 p1778 N68-21668

Aerodynamic engine integration and propulsive effi-ciency studies for transonic and supersonic aircraft flights 11 p1778 N68-21669

Aerodynamic design considerations for propulsion system integration and air intake efficiency of super-sonic and V/STOL aircraft

11 p1778 N68-21670 Design theory and experiments for aerodynamic in-tegration and propulsive efficiency of VTOL and V/STOL aircraft

High energy, upper stage, fluorinated hybrid propul-sion system design criteria, costs, and acheduling [NASA-CR-66597] 12 p1960 N66-22266

Two stage bipropellant injection with high thrust per [NASA-CR-72303] 13 p2144 N68-23432

Vehicle in partially evacuated tube propelled by pressure difference 16 p2751 N68-27691

Integration effects of engine thrust, propulsive jet, engine control, nacible interference and intake design of conventional aircraft, and integration problems of VTOL aircraft

[AGARD-CP-27] 17 p.2805 N68-28850

teristics low wing aircraft with Aerodynamic ch ngine above wing 17 p2806 N68-28854

n operational considerations Aircraft and proper related to inlet design 17 p2806 N68-28855

Interaction between airframe powerplant integration and hot gas ingestion for jet lift V/STOL tramport air-craft

17 p2807 N68-28859 Propulsion and braking of tubeflight vehicles [TR-AE-6708] 19 p3195 N68-31693

Thermodynamic analysis of spacecraft thermal control and pressurization requirements for Mars Orbites and Mars Eccursion Module missions [NASA-CR-96740] 21 p3758 N68-34079 21 p3758 N68-34079

ELDO perogec/apogre propulsion system, European elecommunications satellite project and ESRO sounding rocket and scientific satellite program, 21 p3778 N68-34238

Effect of hydrogen peroxide generator configura-tions on jet exhaust flow characteristics (NASA-THAX-1671) 23 p4051 N6S-37067 PROPULSION SYSTEM PERFORMANCE

Hybrid proposition system performance and configuration for Atlas Centaur Burner 2 stage in syschronous orbit and high velocity probe minimum [NASA-CR-66475]

Ol p0128 N66-10208

Thermal design and analysis of cestism contact-ion microthruster. microthrustor [NASA-TM-X-1473]

01 p0128 N68-10496 Performance tests of ammonia resistojet thrusore system for various spacecraft control manuscress (NASA-TN-D-4249) 01 p0128 N66-10562 Structural design problems of third stage engines of ELDO A satellite hunching systems 01 p0140 N68-10648

Statistical distribution of performance errors in used propellant rocket engines as function of engine ad propellant loading parameters [TR-0138/3116-50/-1]

02 p0261 M68-11297
Final flight performance prediction for Seture AS204 LM propulsion system S 18 stage
(NASA-CR-91467)
04 p0365 N68-13372

tec

er

in

UH [H

11

60 (/

SUB

Reference design of mist jet propulsion systems in captured air bubble vessels [NSRDC-2496] 04 p0565 N68-13391 orbit and twenty-four hour orbit [ELDO/SP/67/18] mafer between parking 04 p0565 N68-13549 on for ELDO lau Electric propulsion (ELDO/SP/67/14) launch vehicles 05 p0731 N68-14112 or for space applica-07 p1073 N68-16396 [NASA-CR-93139] Puhed performance ([TR-1001/2230-33/-2] 08 p1231 N68-17941 sion system of Surveyor 1 sp [NASA-CR-93494] 09 p1430 N68-18656 Design and fabrication of combustion and test stand for evaluating comp [NASA-CR-93548] 09 p1415 N68-19123 Flight performance predict diction for Saturn A5-205 propulsion system S-[NASA-CR-94697] 14 p2336 N68-24626 Performance analysis on stems for spacecraft propulsi gaseous core reactor systems for spacec [TUB-IR-1/[967] 15 p2500 N68-25892 diction for Saturn AS-stem, S-1B-6 stage 20 p3579 N68-33418 Final flight perfor 206, Mission 276, pr [NASA-CR-96473] Propulsion system pe S-1B stage, August-Dec (NASA-CR-96344) ance prediction of Saturn 1968 21 p3758 N68-34038 Future spacecraft pro [NASA-TM-X-61186] ystems requirements 21 p3760 N68-34750 Optimizing propulsion sy relanetary spacecraft - n ns and trajectories of in-rical analyses and com-

NOPULSIVE EFFICIENCY NT PROPELLER EFFICIENCY

NASA-CR-732551

Air separators for air breathing engines in spacecraft [DLR-FB-67-79] 07 p1072 N68-16184 Gas dynamics of explosions for rocket propulsion ap-07 p1095 N68-16379 Survey papers on rotor aerodynamics, propulsive efficiency, and flight mechanics of V/STOL aircraft configurations [AGARD-ADVISORY-13] 13 p1991 N68-23761 nption and weight analysis for vertical propulsion characteristics -60507] 14 p2338 N68-25279 Fuel consumption at takeoff aircraft propulat [NASA-TM-X-60507] Usefulness and com tatus of advanced electric propulsion system [NASA-CR-88062] planetary spacecraft 15 p2545 N68-25679

22 p3963 N68-35812

15 p2500 N68-26005 Coaxial plasma gun res rch for space propulsion [NASA-TM-X-1600] 16 p2739 N68-28154 Hybrid propulsion efficienc cushion vehicle and effect on ti [REPT.-4] cy for peripheral jet air hrust of aerial helix 19 p3358 N68-30947

Comparative analysis of gas core nuclear reactors for sacocraft propulsion

Optimum no ed for multistage tur-20 p3392 N68-32712 [CE-TRANS-4755]

Multipurpose single tion feasibility study [NASA-TM-X-61237] sch vehicle configura-21 p3780 N68-34587 Turbine blade injects g air effects on gas tur-

(FTD-HT-67-303) 22 p3954 N68-35228 Optimization probles with low thrust propulsio [FTD-HT-23-1241-67] space flight mechanics

24 p4342 N68-38244 ROPYL COMPOUNDS

Some new chloris 04 p0470 N68-13533

Competitive unimolecually activater radical systems tion in chemipropyl rupture 11 p1653 N68-21304 TR-10A) es of ligands containing

13 p2014 N68-23601 Infrared and Raman

nal spectra of ethyl-r and terminal sub-EAFML-TR-67-2921 15 p2427 N68-26367 Monomers and polymers of vinyl cyclopropane, 1,1-dichloro-Z-vinyl cyclopropane, and cyclopropyl 18 p3020 N68-29862

sking poly/2,2-onded explosives opropyl acrylate/ in plastic bonded of UCRL-504341 24 p4220 N68-38369

PROPYLENE

Physical proper ropylene carbon acetonitrile solvent e [NASA-CR-72407] 13 p2012 N68-23473 silicone rubber and Viscoelastic evi

ethylene propy [BNWL-736] 20 p3512 N68-33324 Experimental study of n lar diffusion in liquids 21 p3650 N68-34143

Patch-type tests of ethylene sion bladder material for them bility studies propylene rubber expul-nal sterilization computi-23 p4162 N68-37411

PROFYLENE OXIDE

Synthesia, and structural analysis of polymeric propylene oxide [PA-TR-3586] 08 p1143 N68-17960 PROSPECTING U EXPLORATION

PROSTHETIC DEVICES

switching system for con-Adaptation of bang-b 19 p3217 N68-31734 manned space flight 22 p3817 N68-33346 FTD-HT-67-2821

rs for prosthetics 23 p4070 N68-37115 Pneumatic pistor

23 p3995 N68-37258

teristics of pressure [RAE-TR-68135] PROTACTINIUM

Low energy game tactinium 231 decay [NP-17285] stra of thorium 231 to pro-14 p2307 N68-24811 lectrophoresis used in and transuranium ele-(CEA-R-3411) 22 p3828 N68-35651

ROTACTINIUM ISOTOPES

Extraction method for de-um 233 in sulfuric, nitric, ar-tions containing flation produ-tionation (AERE-AM-105) 06 p0786 N68-15155

Protactinium 233 i re resonance in-[WAPD-TM-612] 07 p1052 N68-16887

Auger, internal conversion, from protactinium 233 decay, tering effect on IEC method and gamma ray spectra and photoelectron scat-12 p1955 N68-22205

ns for protactinium isotopes and Uranium 232 [GA-7462] 12 p1929 N68-22546

PROTECTION

ECTION
ACCELERATION PROTECTION
CIRCUIT PROTECTION
CORROSION PREVENTION
EYE PROTECTION
METEOROID PROTECTION
RADIATION PROTECTION
RADIATION PROTECTION
RADIATION SHEELDING
THERMAL PROTECTION

Protective action of organophosphorus complexing yents in poisoning by soluble beryllium compounds in (JPRS-45973) 19 p3227 N68-31485

21 p3643 N68-34538

PROTECTIVE CLOTHING
NT HELMETS
NT PRESSURE SUITS
NT SPACE SUITS

Methods for determ g face fit for respiratory pro-[SC-RR-67-461] 01 p0018 N68-10988

tive textiles 02 p0224 N68-11131 High-intensity the [NADC-MR-6715] Radiative thermal es nt effects on pres-

sure-suited man on lur [NASA-TN-D-4243] 02 p0267 N68-11630 Polyamide fiber ma clothing in industrial I [LD-17-67] d for use as protective hermal environment 09 p1287 N68-18477

Development of fire extinguishing systems, and tective clothing for oxygen enriched atmosph human safety, space environment simulation chan and societies agreement. and accident prev [AMD-TR-67-2] 09 p1287 N68-18744

Fire extinguishing syst r spacecraft cabin simul and protective clothing 09 p1288 N68-18747

evention measures, and protective clothing nts for spacecraft cabin atmosphere simula-09 p1288 N68-18750

Protective clothing fire tests in various cabin at-09 p1288 N68-18751

Thermal insulation, and fire andidate space suit materials protecting properties of 09 p1288 N68-18752

Nylon luminate flight helme tection of military flight crews [TR-67-53-CM] for increased crash pro-11 p1639 N68-21018

Prototype air distril controlled protective c [TR-68-21-CM] stems for temperature 11 p1640 N68-21345

Flame protection afford garments in pure oxygen at [SAM-TR-67-91] d mice by noncombustib 11 p1642 N68-21752 Protective clothing for naval engineer personnel

(NASA-TT-F-11613) 12 p1827 N68-22212 bric for air distribution

Three dimensi systems in therma (TR-68-34-CM) 12 p1896 N68-23022 Systematic study of the rcrew protective uniform properties of proposed

14 p2205 N68-24878 easibility of blinker type glasses for protecting ts in tactical situations against flash blindness 14 p2205 N68-24881

eristics of protective helmet [USAARU-68-6] 15 p2401 N68-26382

clothing, and handli ne fluoride rocket prop Investigating protective ethods for packaged chloric (QR-3) 18 p3013 N68-29838

sotope to warm pilot ejected over arctic regio [AMD-TR-68-1] 18 p3015 N68-30686

Heat and mass flo composite clothing ur [TR-68-44-CM] rough several types of sted conditions 20 p3410 N68-32519 ctive armor for flight

Performance te crews in aviation ac [TR-68-57-CM] 21 p3640 N68-34385

ROTECTIVE COATINGS NT ANODIC COATINGS NT CERAMIC COATINGS NT PRIMERS [COATINGS]

simulation testing of anchored interpla-ring platform D thermal design and pro-[NASA-TN-D-4112] 01 p0149 N68-10299

Metallurgical tests of mes, protective coatings,

[NASA-TM-X-63025] 02 p0216 N68-11300 Fluidized bed polymeric coating of large steel missi [PA-TR-3569]

03 p0347 N68-12122 Electrophoretic process for coating T-53 engine air diffuser, exhaust diffuser, and combustion chamber housing with SERMETEL W

(VL-2488-1-0) 03 p0347 N68-12499 ments of thermal con-Spectral reflect

trol coatings after ult [NASA-CR-91351] liation 04 p0593 N68-12858 ermal control coatings for System requirem

[TR-0158/3250-20/-2] 04 p0593 N68-12954

Aluminum protect (NASA-CR-545381 ps for chromium alloys 04 p0522 N68-13627 Microbend tester evelopment for study coatings for refracto INASA-CR-915391 04 p0522 N68-13737

tive coatings for refractory High temperature p [NASA-CR-91537] 04 p0523 N68-13805 Protective coatings, shielding of nuclear tec-face layers, concrete notemer films nd materials for radiation ology structures - epoxy sur-pestruction materials, and

FTD-HT-66-6911 06 p0873 N68-15409 NDEX Radiation shielding potential of polymer, and lacquer coatings in reactor contamination, and safety and pro-pheres -sambers 06 p0874 N68-15410 Adhesive polyethylene, and polyvinyl chloride layers for protective surface coatings against radioactive con-8-18744 clothing 8-18747 06 p0874 N68-15411 clothing red coatings for shielding construction and equipment from radioactive contamina-3-18750 06 p0874 N68-15412 bin at-Model for unidirectional diffusion of iodine in in nucleur reactor accidents [IN-1095] -18751 07 p1029 N68-16581 Protective coatings and surface treatments for pro-tection of Ti-8Al-1Mo-1V alloy sheet from hot-salt -18752 sh pro-[NASA-TN-D-43191 08 p1185 N68-17377 -21018 Preparation and wettability of terminally chlorophenyl-substituted carboxylic acid films for use in improving adhesion of protective coatings and adheerature -21345 sives [NRL-6621] 08 pl141 N68-17782 ustible Chemical reaction behavior of refractory metals and alloys with environment, and oxidation resistant and protective coating systems 21752 monnel 08 pl 188 N68-18209 22212 Radioactive tracer procedures to determine leaching characteristics of chromium dissolving from chromated aluminum surfaces with organic protective coating applied during aging [NADC-MA-6702] 09 p1291 N68-18262 23022 09 p1291 N68-18262 posed Radio frequency sputtering techniques for applying integral cover-glass contings to silicon solar cells [NASA-CR-93410] 09 p1273 N68-18351 24878 ecting Rain impact damage, and water erosion effects on structural materials - aircraft structures, supersonic speeds, metals, plastics, ceramics, steels, and protective continues 24881 e hel-26382 09 p1337 N68-19401 onic rain erosion pro-Polyurethane coatings for su tection of metallic, and plastic minutes 09 p1356 N68-19411 9838 Nickel electroplated nonconductive coatings for run-erosion protection of aircraft structures 09 p1354 N68-19416 warm 0686 Rain erosion behavior of galvanic surface layers on teel structures es of 09 p1354 N68-19421 2519 Protective coating parameters for improving axida-on resistance and reliability of silicide coating systems flight 4385 10 p1538 N68-19623 Development of high tem strengthened materials, con aircraft gas turbine engi [NASA-TM-X-52420] 10 p1539 N68-19787 ctive Electrophoretic coating a Sermetal W to all critical su air diffuser, and combustion hod for application of ces of exhaust diffuser, number housing of T-53 1299 [VL-2488-3-0] 10 p1536 N68-20462 Low energy electron irradiation rate testing of ther-mal control coatings for spectral reflectance properties [NASA-CR-93973] 11 p1802 N68-20869 300 Design and performant control assembly contings [NASA-CR-93921] e of Mariner 5 temperature 122 11 p1788 N68-20989 Heat effects on corrosion conversion coatings on metal a [CCL-246] resistance of chromate 11 p1712 N68-21021 499 -000 Heat balance equations for or ing patterns for spacecraft tempe [NASA-CR-1041] r optimizing optical cont-mperature control system 12 p1894 N68-22391 252 for tive coatings for magnesi-13 p1994 N68-23262 420 Change in thickness a idium coating on noigh nd mechanical properties of denum determined after heat

(NASA-CR-94568)

nichium and tantalu [NASA-CR-94582]

737

ory

105

Effects of silicide co

Technical reference ma liners of petroleum fuel cor (AD-666969)

13 p2082 N68-23458

13 n2082 N68-23469

13 p2088 N68-23614

13 p2086 N68-24317

on oxidation behavior of

al for protective interior

Flame spraying coating process for improved corro-ion resistance of steels, ceramics, and composite saterials

Irradiation effects on thermal control coatings of OAO [NASA-CR-94684] 14 p2369 N68-24465 Wear and corres tant contings for steam MTI-68TR131 14 p2263 N68-24507 Dip coating metho battery tape separator [NASA-CR-94766] r manufacturing sterilizable 14 p2193 N68-25105 Optical properties as silver and dielectric file [NASA-CR-73228] nd stability of vacuum deposited a coatings 14 p2374 N68-25326 Coated tantalum alloys as for leading edge regions of I [NASA-TM-X-60249] and refractory metal coatings hypersonic cruise vehicles 14 p2273 N68-25345 Heat resistant protects propellant rocket engines [NASA-CR-89349] stings for use in liquid 15 p2482 N68-26156 Computerized thermal co for astellite protective contin [AFML-TR-67-353] 16 p2799 N68-27069 16 p2687 N68-27241 [PIBMRI-1385-67] coatings to prevent sitrogen Palladium and plat ingression and embrittle [NASA-TM-X-52324] 16 p2681 N68-27693 Electron probe X ray microanalyzer applied to material failure study, bonding, and other metallureical [NASA-TN-D-4526] 16 p2672 N68-28249 re coatings of iridium on um, and tungsten 17 p2900 N68-28655 High temperature pr tantalum, niobium, mol [NASA-CR-95569] Corrosion prevention outings formed on iron and during cathodic pro (FTD-HT-67-233) 18 p3096 N68-30807 ility of oil films to water Sulfonates effect on [RIA-68-1187] 19 p3296 N68-30956 Polographic study of corrosis (RIA-68-1210) n preventive oils 19 p3297 N68-31060 Evaluation of antistatic coatings for polystyrene con-(NAD-CR-RDTR-1111) 19 p3298 N68-31385 Effect of sprayable, str able protective coating on painted substrates [NADC-MA-6803] 20 p3509 N68-32525 Poly/metal phospi coatings and lubricas [AD-671882] tatic and protective 20 p3511 N68-32957 sical properties of 20 p3502 N68-33136 Corrosion control aircraft surfaces [NADC-MA-6731] ce equipment for naval 21 p3622 N68-33673 of organic continues 21 p3710 N68-34704 Mechanical properties of high strength alloys with plasma sprayed protective coatings [NASA-TT-F-1 | 927] 22 p3881 N68-35225 22 p3881 N68-35225 Rapid method developed for determining quality of of deposited stannate immersion coatings. [CCL-252] 22 p3882 N68-35374 Development of phase-chi control of spacecraft surfaces [NASA-CR-66695] ge coatings for thermal 23 p4185 N68-36113 Test data on commercially available protective contings for containment buildings of boiling and pressurized water reactors [IN-1169] 24 p4293 N68-37515 Oxidation of bonded and coated particle feel com-24 p4297 N68-37972 PROTECTORS
U EAR PROTECTORS NT LIPID METABOLISM Nutritional value of algae and soybean protein diet for rais 04 p0453 N68-13187 Metabolium data from chemically defined low residue diet for small primates [NASA-CR-91904] 06 n0776 Not 1604 06 p0776 N68-16061 engineering studies for eleration stresses, human ling, protein metabolism,

Cell and tissue cultures for biomass production in closed ecological systems ton irradiation effects on phosphorus absorption 09 p1262 N65-18914 ffects of Chlorella containing plant diets on human Intercranial pressure pulse we tresses up to 40 g and s eves during acceleration netabolic processes in (FTD-MT-24-244-67) 21 p3635 N68-34176 synthesis of proteins and 21 p3635 N68-34177 **PROTEINOIDS** Formation of ordered polypeptide sequences in thermal protenoid micro (NASA-CR-94534) 13 p1996 N68-23193 de formation under reduction and charac-19 p3213 N68-32146 ADENOSINE DIPHOSPHATE [ADP] ADENOSINE THIPHOSPHATE [ATP] ALBUMINS FIBRINGGEN GLOBULINS NT GLOBULINS
NT LIPOPROTEINS
NT NUCLEOTIDES
NT OXIDASE
NT OXYMEMOGLOBIN
NT PEPTIDES
NT PROTEINOIDS Biochemical studie metabolisms, bacteriop [NASA-CR-90308] ies on nucleic acids, proteins, ophages, and related topics 02 p0164 N68-11035 Fluorescence of proteins and their electron stimu-lated states (REPT.-1203) 04 p0452 N6B-13100 Structural and fuec catalyzed by enzymes [AD-661450] relationships in reacti 04 p0456 N68-13552 Minimum protein and c lumped manned spaceflight [NASA-CR-91287] ric requirements for pro-d space stations 04 p0457 N68-13776 il p1633 N68-20610 Conformation of pyrid cleotide comzymes by rotary dispersion and [NASA-CR-93963] 11 p1635 N6B-21139 Kinetic studies on [AFOSR-68-0524] ins by flush photolysis 13 p1999 N68-23292 peus protoin soque 13 p2002 N68-34256 14 p2202 N68-25178 Gas chrom a of pre-biolo Chemical evolu-olecular systems 16 p2599 N68-27879 rolling protein systhesis complexity 22 p3813 N68-35763 in biological system (EUR-3607) Longitudinal toleran 10 MeV proton linear a [INR-790/SLBAL/PL] rating structure of O1 p0101 N68-10036 core depth distribution for high energy pro tank 05 p0712 N68-14427 Liquid hydroger L-mesons in knon-[UCRL-17833] 05 p0712 N68-14430 Comparison of proton-trit reactions with nitrogen 15, as [UCRL-17790] ium, and proton-bellum 3 ed curbon 13 targets 05 p0717 N68-14720 Uniformity of large area proton beams for biology NASA-TM-X-60860] 07 p0992 N68-16785 Nuclear probe microanalysis of carbon in steel using carbon 13 nitrogen 14 and carbon 12 nitrogen 13 proton summer reactions

07 p1053 N68-17054

SUI

PROTON BEETS		SOBJECT INDEX
Adjustment of acceleration conditions and beam parameters of linear strong-focusing proton accelerator	for experiments on pencils of particles and with storage	Feasibility of two-proton decay 11 p1756 N68-21380
[TEF-513] 99 p1322 N68-18482 Telemanipulation for equipment maintenance in radioactive zones of proton synchrotron	rings on antiprotons 24 p4320 N68-38193 Design concepts and dynamic characteristics of proton accelerator waveguide separating channel	Effect of varying nuclear parameters in calculating radiochemical cross sections for incident proton and negative pion reactions in 50 to 400 MeV region [NASA-CR-94309] 12 p1922 N68-22150
[BNL-TR-180] 12 p1856 N68-22735 Application of dosimetry for measurement and anal-	proton accelerator waveguide separating channel 24 p4320 N68-38194 PROTON BELTS	Systems design and installation of powerful Soviet synchrophasotron for proton acceleration
yais of radiation effects on small objects subjected to	Inner zone proton fluxes and spectra of earth radia- tion belt - decay lifetimes for Starfish electrons	Proton induced radiation damage to silicon solar
[CEA-R-3376] 12 p1942 N68-22964 Radial acceptance of 10 MeV proton linear accelera-	[TR-0158/3260-20/-1] 03 p0412 N68-12089	cells [NASA-CR-95997] 19 p3206 N68-31622
tor [IBJ-834/SLBAL/PL] 13 p2117 N68-23655 Target mechanisms, extracted proton beams, and	Low energy trapped proton observations with Injun 4 satellite [NASA-CR-89397] 15 p2548 N68-25688	Elastic scattering of protons from calcium 40 in ranges of proton energies from 5.0 to 12.6 MeV 20 p3540 N68-32246
operation of Nimrod accelerator [RHEL/R-155] 14 p2306 N68-24746	Dynamic coupling between F2 region and protono- sphere - solution of time dependent continuity equa-	Variable energy extraction from negative ion cyclotron into external beam system
Four coupled loops for radio frequency control in beam loaded proton synchrotron [RHEL/R-158] 14 p2300 N68-25491	[NASA-TM-X-63310] 20 p3473 N68-33267	22 p3921 N68-34968 Cross sections for elastic scattering of protons by ox-
Bibliographies on beam transport and extraction for	Temporal variations of 100 keV to 1700 keV trapped protons from data recorded by scintillation	ygen measured at various proton energies 23 p4113 N68-36150
synchrotrons, and synchrocyclotrons [NP-17329] 15 p2519 N68-26434	counter on Explorer 26 - Jan. 29, 1965 - June 29, 1965 [NASA-TM-X-63320] 21 p3761 N68-34059	PROTON FLUX DENSITY Protons associated with centers of solar activity and
Effect of beam deflecting elements on closed orbit calculations for Alternating-Gradient Synchrotron	Low energy proton damage effects on useful life of	propagation in interplanetary magnetic field regions co-rotating with sun [NASA-CR-90227] 01 p0132 N68-11005
(AGS/ [BNL-12375] 16 p2725 N68-27969	netically trapped radiation belts	[NASA-CR-90227] 01 p0132 N68-11005 Inner zone proton fluxes and spectra of earth radia-
Equipment for short-lived isotope production in proton beam of synchrocyclotron and associated spec-	Solar proton flare effects on silicon photovoltaic	Inner zone proton fluxes and spectra of earth radia- tion belt - decay lifetimes for Starfish electrons [TR-0158/3260-20/-1]
troscopic analysis [JINR-P6-3773] 17 p2869 N68-29210	power system for deep space missions [NASA-CR-93922] 11 p1627 N68-20944	O3 p0412 N68-12089 Proton flux measurements onboard lunar probe
Semiconductor devices for studying fission in high energy proton beam at CERN proton synchrotron [P-885/LA, 2/PH] 18 p3138 N68-30780	Failure analysis and degradation mechanism for or- biting solar cell arrays of applications technology satel-	[NASA-CR-93231] 08 p1234 N68-18027 Time histories of intensities and spectra for low ener-
Design and performance of thermistor for measuring	[NASA-CR-94612] 13 p2156 N68-23889	Time histories of intensities and spectra for low energy electrons and protons in magnetosphere [NASA-TM-X-63125] 08 p1234 N68-18191
internal proton current in synchrocyclotron [R-619] 19 p3279 N68-31733	High energy proton damage in silicon surface barrier detectors	Electron and proton flux density data as obtained by ATS I satellite omnidirectional spectrometer
Operating characteristics of proton beam monitoring system used with particle accelerator	[NASA-TN-D-4528] 14 p2329 N68-24660 Analyses of radiation particle equivalence for	[TR-0158/3260-20/-7] 16 p2659 N68-27213
[PPAD-640-E] 19 p3281 N68-31949 Magnetic lens design to match beam between proton	damage effects in silicon transistors [BMWF-FB-W-68-19] 14 p2230 N68-24803	Solar particle observations from 24 January to 24 February 1967 correlated with solar flare activity [NASA-CR-95984] 19 p3361 N68-31506
injector and linear strong focusing accelerator [REPT-875/SLBAL/PL]	Proton and electron irradiation damage effects on bipolar transistors	[NASA-CR-95984] 19 p3361 N68-31506 PROTON IMPACT
20 p3538 N68-33250 Proton alpha reactions in light nuclei at 40 MeV	[BMWF-FB-W-68-16] 14 p2230 N68-24805 Annealing effects on minority carrier life in silicon	Cross sections for particle production in excited states resulting from impact of protons on easeous tar-
20 p3550 N68-33465	after proton irradiation [NASA-TM-X-59638] 14 p2335 N68-25392	states resulting from impact of protons on gaseous tar- gets under single-collision conditions [ORO-2591-33] 07 p1047 N68-16616
Beam transport system design for LAMPF Linac in- jector [LA-DC-9420] 21 p3676 N68-34389	Radiation damage shielding of solar cells on	Yield analysis for proton sputtering of polycrystalline gold
LAMPF 200 MHz RF power sources for proton	synchronous spacecraft [NASA-TM-X-63232] 15 p2389 N68-25736	[ORO-3557-3] 15 p2543 N68-26676 Classical binary approximation for ionization by
[LA-DC-9452] 21 p3628 N68-34406	Proton irradiation damage effects on performance of silicon surface barrier detectors [NASA-TM-X-63242] 16 p2661 N68-27456	proton impact [NASA-CR-81435] 16 p2721 N68-27538
Klystrons for blocking oscillator modulation in LAMPF	Solar cell damage from magnetically trapped protons	Optical emission produced by proton and hydrogen atom impact on nitrogen and hydrogen molecules 19 p3321 N68-30941
[LA-DC-9478] 21 p3669 N68-34407 Double drift bunching of proton beam for ac-	and electrons using output voltage data from Explorer 23 satellite [NASA-TM-X-60138] 16 p2593 N68-27541	PROTON IRRADIATION
[LA-DC-9422] 21 p3743 N69-34511	Proton damage to n and p-type silicon crystals as	Electron emission of flash-heated single crystal tung-
Calibration method for proton beam of linear ac- celerator	function of proton energy using hall effect [NASA-TM-X-60124] 16 p2744 N68-27639	sten ribbon under proton bombardment [SC-DC-66-1559] 03 p0399 N68-12785
[RHEL/R-110] 23 p4040 N68-36638 Proton accelerator tube with strong focusing mag-	Low energy proton irradiation damage to samples of aluminum and gold for use in spacecraft thermal con-	Experimental studies on high energy particle interac- tions, proton irradiation, and particle production for
netic quadrupole lenses {CERN-TRANS-67-4} 23 p4123 N68-36881	trol surfaces 16 p2681 N68-27738	radiation shielding 05 p0704 N68-13960
Bombardment of hydrogen gas target to measure	Uniform damage to silicon solar cells by fast protons or electrons	Radioactivity induced in construction materials by neutron and protron irradiations and spallation [CERN-67-25] 05 p0721 N68-14979
[UR-NSRL-3] 23 p4133 N68-37190	[NASA-CR-97418] 24 p4201 N68-38209 PROTON DENSITY [CONCENTRATION]	Backscatter of neutrons from concrete shielding ir-
Optical parameters of beam matching system between 510 keV proton injector and 10-MeV strong	NT MAGNETOSPHERIC PROTON DENSITY Mathematical model for net acid proton content in	radiated with protons [JINR-P16-3514] 06 p0887 N68-16076
focusing linear accelerator [INR-875/SLBAL/FL] 24 p4306 N68-37492	acid-base metabolism of biological systems [RM-5451-PR] 09 p1278 N68-18340	Proton irradiation effects on liver cells and tissue of primates
Coherent production of proton positive and negative pion with proton exposure of neon hydrogen bubble chamber	Proton intensities of outer radiation zone during magnetic storm	[NASA-CR-92688] 07 p0941 N68-16107 Two dimensional analysis of carbon 12 breakup from
[BNL-12674] 24 p4315 N68-37899	[NASA-CR-93765] 10 p1588 N68-20293 Mesh iteration computer program for field calcula-	Two dimensional analysis of carbon 12 breakup from reaction boron 11/p,alpha, alpha/ helium 4 groton bombarding energies between 163 keV and 2 MeV [CEA-R-3270] 07 p1040 N68-16306
Double focusing spectrometer to observe nuclear reactions at 180 deg to beam direction	tions in proton linear accelerator cavities (BNL-12537) 20 p3548 N68-33133	Proton irradiation effects on phosphorus absorption
[ANU-P-399] 24 p4257 N68-38020 Experiments on superhigh energy cybernetic proton	PROTON ENERGY	into rat tissue proteins 09 p1282 N68-18914
accelerator /textbook/ [AEC-TR-6936] 24 p4318 N66-38182	Theoretical arguments on electron and proton charge magnitude equality	Isobaric analog states in proton elastic scattering from targets of tellurium isotopes
Experimental program for studies of high energy strong and electromagnetic interactions on superhigh	05 p0710 N68-14310 Cinematographic display of observations of low	09 p1393 N68-19182
strong and electromagnetic interactions on superhigh energy proton accelerators, and particle analysis techniques	energy proton and electron spectra in terrestrial mag- netosphere	Effects of 22 MeV proton and 2.4 MeV electron radiation on boron and aluminum doped silicon solar cells
24 p4319 N68-38185 Proposed experiments for studying electromagnetic	[NASA-CR-91871] 06 p0905 N68-15232 Proton flux measurements onboard lunar probe [NASA-CR-93231] 08 p1234 N68-18027	[NASA-TN-D-4407] 10 p1577 N68-19924 Radiation damage in low energy proton irradiated
interactions on superhigh energy proton accelerator 24 p4320 N68-38189		Radiation damage in low energy proton irradiated thick copper and gold foils and subsequent annealing characteristics
Experiments with neutrinos and muons on superhigh energy proton accelerator 24 p4320 N68-38190	Geophysical satellite measurements of trapped parti- cles for estimating proton energy in interplanetary plasma [NASA-CR-93230] 08 p1220 N68-18039	[NASA-TN-D-4452] 11 p1772 N68-21219 Proton decay of nuclei heavier than tin 11 p1756 N68-21378
27 P1020 1100 00130	framework as being the contractions.	

EX

1380

1150

rviet

olar

622

) in

246 ion

968

OX-

150

189

27

by

13

24

16

6

ny

energy negative kand

Alpha and proton radioactive decay near magic umber nuclei in terms of high energy heavy ison 11 p1756 N68-21379 e effects on solar concen-Ultraviolet-pe (NASA-CR-1024) 13 p2082 N68-23560 ermanium target, and ion for separating spallation 13 p2021 N68-24071 Association between vaca es and alum num atoms in proton bombarded silicon with [NASA-TM-X-60273] 15 p2540 N68-26563 High energy solar flare proton irradiation tests of Mariner 4 subassemblies [NASA-CR-95148] 16 p2631 N68-27203 Penetration codes for solar flare proton spectrum in-ident on semi-infinite slabs of aluminum and of tissue NASA-CR-95141] 16 p2720 N68-27229 [NASA-CR-95141] age effects on performance of Proton irradiation d ullicon surface barrier d [NASA-TM-X-63242] 16 p2661 N68-27456 Proton irradiation effects in MOS and junction field-effect transistors and integrated circuits [NASA-TM-X-59313] 16 p263. N68-27638 Low energy proton irradiation damage to samples of luminum and gold for use in spacecraft thermal con-16 p2681 N68-27738 Spectrum analysis and cross sections for formation of deuterons from Li g/p,d/Li 5 and Li 6/p,pd/He 4 reac-17 p2928 N68-28665 Endothermic reactions in Shonka-type tissue equivalent plastic irradiated with monoenergetic BNWL-SA-1760] 18 p3079 N68-30786 Test equipment for in-situ optical reflectance measurement of zinc titanate over Lexan target material on RAE-A natellite after proton and ultraviolet irradiation (NASA-TM-X-63354) 22 p3896 N68-35589 High energy proton exposure of complexes of lantha-nides with diethylenetriaminepentaacetic acid for reducing preparation time of neutron deficient radiomotops of rare eartha (JINR-P12-3887) 23 p4128 N68-37047 Defect energy levels and concentrations for proton irradiated, n-type silicon single crystals [NASA-TN-D-4830] 23 p4155 N68-37051 PROTON MAGNETIC RESONANCE Proton magnetic resonance analyses on boron triha-lides with diethyl other [TR-16] 06 p0790 N68-15681 Proton magnetic resonance spectra of aromatic nitro 08 p1143 N68-17966 Proton magnetic resonance analysis or ny-onding in allphatic secondary amines 09 pl 299 N68-19378 Metal-ligand bond determined for resonance spectra, and rate com-transfer in deuterium oxide solution ed from proton magnetic constants for deuterium 11 p1658 N68-21782 Molecular state of perchloric acid and hydration of 13 p2008 N68-23081 18 p3128 N68-29757 ce spectra of dimeric and oxide determined by com-ecular weight and proton 21 p3651 N68-34251

PROTON-PROTON REACTIONS Proton-proton elastic scattering at large mom (LNF-67/59) 01 p0109 N68-10513 Meson-nucleon interactions, proton-proton reac-tions and cosmic magnetized plasma studies [AFOSR-67-2294] 01 p0110 N68-10571 Hydrogen bubble chamber a ields proton proton positive pi S-state pion-nucleon interaction affecting partial-rave nucleon-nucleon absorptions ISS-67/25] 02 p0249 N68-11707 (ISS-67/25) tion [COO-1195-125]

ns for elastic proton-proton scattering 03 p0392 N68-12521

10 p1564 N68-19719

Mathematical model to describe high multiplicity, igh energy interactions, and results with pions and

Two-temperature model for examining particle spec-tra from proton-proton and proton suclei interactions at machine energies [NASA-CR-93762] 10 p1570 N68-20294 PROTON PROTUBERANCES Solar proton flare effects on allicon photovoltaic power system for deep space missions [NASA-CR-93922] 11 p1627 N68-20944 11 p1627 N68-20944 n in three body states in proton-K meson produ PROTON RESONANCE proton interaction UCRL-179431 Phase-space model for a production in pion-proton [UH-511-18] 11 p1753 N68-20946 13 p2114 N68-23365 cout annihilation in anns and widths of proton and duminum and sodium 17 p2923 N68-28390 12 p1919 N68-21967 Relative energy position rmma ray resonances in a High energy proton-proton in particles in hydrogen bubble cha [BNL-11993] tions with charged Final states of neg [IS-T-225] 12 p1929 N68-22511 19 p3322 N68-30989 Evaluation of peripheral model for calculating on proton-proton interaction with neutron and pion for-20 p3541 N68-32281 [JINR-E2-3638] 12 p1941 N68-22921 Negative pion elastic scattering in pion proton reaction with positive nucleon resonance [DESY-68/18] 20 p3543 N66-32730 Differential cross section for deuteron production in euton-proton collisions from 1.5 to 3 GeV 15 p2514 N68-25933. 20 p3543 N68-32730 bubble and spark chamber data for parti-in in high energy proton-proton collisions 15 p2519 N68-26422 PROTON SCATTERING Cross section for kaon plus deuteron yields neutrantikaon plus two seutrons reaction and positive kao proton elastic scattering
[COO-1195-07]

01 p0104 N68-1029 cle production [BNL-12232] 01 p0104 N68-10295 sections (ANU-P/407) 16 p2723 N68-27688 Angular and energy distribe Ag and Au targets after high en [ORNL-TR-1685] tions for protons fr Mass spectra and differentia nucleon isobar production in prot ial cross sections for ol polor N68-10461 ton-proton reactions 17 n2924 N68-28434 (UCRL-17683) ross sections, ces and particle 02 p0244 N68-11438 [ITEF-501] deuterons 02 p0248 N68-11615 17 p2925 N68-28487 ring cross section ob-17 p2927 N68-28637 e approximation to calculate for normal total experiment on Cosmic gamma ray spectra from production a decay of neutral pi-mesons produced in metagalac quasi protos pro (JINK-P1-32[5] 03 p0394 N68-12592 [NASA-TM-X-63254] 17 p2963 N68-28697 X ray and proton acattering bodies of arbitrary convex geon (ECOM-2873) ng from neutron irradiated tron high en and proton-proton cross sections, and deuteron prod (BNL-12344) Neutron cross sections and spectra, proton and eutron scattering, and nuclear reactions 05 p0703 N68-13953 17 m2940 N68-29313 Regge residua, form factors, and composite particles numerical analysis of Van Hove formula for proton-toton scattering using mathematical model Hydromagnetic wave pitch-angle scattering in fluence on inward radial diffusion of low energy protons in magnetosphere [TR-0158/3260-01/-1] stical model 17 p2942 N68-29482 High multiplicity, high energy proton-proton interac-ins with six charged particles in final states 17 p2944 N68-29496 06 p0885 N68-15791 Proton-nucle studied by prot and oxygen 16 [BNL-11890] ions at 1 GeV incident energy tering from carbon 12, helium 4, ction in center of Non, kaon, and antiproton as in high energy proton pro n production in center of roton collisions 17 p2945 N68-29499 07 m1044 N68-16511 Proton spectra of de um 48 and titanium 50 [INP-594/PL] proton reaction in titani-(JINR-P15-3504) 07 p1049 N68-16703 18 p3136 N68-30621 Cross sections for elastic and inelastic neutrons protom from Ti-48, V-51, Cr-52 Cr-52, Fe-54, Fe-5 Co-59, Ni-60, Ni-62, Ni-64, Cu-63, Cu-65, Zn-64, as Zn-68 [ORNL-4182] 07 p1054 N68-171 Proton-proton and proton-neutron final state in-teractions studied with Rice University Van de Graaff 19 n3324 N68-31048 07 p1054 N68-17111 Formula for calculating differ proton-proton elastic scattering [LNF-68/25] rential cross sections of nces in nuclei of closed 19 p3330 N68-31523 (JINR-E2-3551) 09 p1389 N68-18707 Two-prong and four-prong events of 10 GeV/c pp in-teractions in 81-cm hydrogen bubble chamber [DESY-68/17] 21 p3739 N68-34275 ic processes to clustic and on scattering at high energies Computer listings for prote proton reactions [UCRL-50426] 09 p1393 N68-19033 on-proton and neutron-[INP-575/PL/PH] Beta decay coupling determined from protor [SGAE-PH-56/1967] nt ratios experimentally im in neutron decay 10 p1563 N68-19681 21 p3741 N68-34376 roton collisions 21 p3744 N68-34635 Data compilation on protonstudies on proton des-omentum transfer 10 p1566 N68-19762 Particle production in high energy proton-prot 22 p3922 N68-34983 gular distribution structure of proton-proton c scattering at large momentum transfer 22 p3924 N68-34996

proton elastic scattering

study of proton protor pion negative pion reac-

Bombardment of hydrogen gas target to measure roton-proton bremsstrahlung

UR-NSRL-3]

High energy pr

(BNL-12673)

22 p3932 N68-35676

23 p4123 N68-36893

23 p4133 N68-37190

interactions resulting in

24 p4317 N68-38019

11 p1750 N68-20740 Deuteron and proto isobaric analog reso coupling in deuteron of II and N isotopes - p [ORO-2972-47] 11 p1754 N88-21145 virogen targets 12 p1919 N68-21997 ICEA-R-3146] , and pion-pe 13 p2119 N68-23749

SUL

of [C

re

OF

90

-

d

P

Differential cross sections of elastic p-p and p-d scat-tering at small angles, and real part of p-n scattering amplitude in 1 to 10 GeV energy range [JINR-P1-3641] 13 p2119 N68-23755 Helium streamer chamber system developed for proton scattering cyclotron experiment [UCRL-16891] 22 p3877 N68-35516 Computation of multiple scattering correction to Differential cross section of proton elastic scattering by helium 4 nuclei [JINR-P1-3720] 14 p2306 N68-24765 energy loss of protons in gold at [RHEL/R-153] 23 p4118 N68-36639 Phase shift analysis of scattering cross sections and Differential cross sections of pi meson and proton lastic scattering in diffraction peak region /spark hamber measurements/ n scattering and polarizations 23 p4131 N68-37137 CEA-R-33921 Velocity dependent rand nucleon scattering analyses dent random potential for nucleon 14 p2313 N68-25116 Secondary maximum in pion-proton elastic scatter-ing measured in spark chamber 23 p4136 N68-37351 Energy levels of 1p shell nuclei excited in /p, d/ reac-14 p2314 N68-25152 Elastic scattering of protons at high energy and memenum transfer using Serber model and Bakamija Thomas theory 24 p4311 N68-37664 Left-right asymmetry and differential cross section or inelastic scattering of 40 MeV polarized protons 24 p4311 N68-37667 15 p2517 N68-26124 Interference effects and nucleon resonances for negative pion-proton elastic scattering 16 p2721 N68-27345 Optical model computation technique for neutron and proton scattering in MeV region [RE-344] 24 p4316 N68-37973 Phase shift analysis of n-n scattering at energies near 20 MeV ces in zirconium 90 from 16 p2721 N68-27346 [JINR-E1-3899] 24 p4317 N68-38028 Radiochemical analysis of neutron-proton and eutron-alpha particle reactions induced by fast reac-PROTON TELESCOPES
U PARTICLE TELESCOPES 16 p2705 N68-28016 **PROTONS** NT RECOIL PROTONS NT SOLAR PROTONS Shell theory of nuclear intermediate structure relatelastic scattering to deuteron-proton Negative kaon-proton interactions in hydrogen bub-[LA-DC-8192] 17 p2922 N68-28356 ble chamber [ORO-3065-13] 01 p0100 N68-10007 Resolution and analysis of proton-sucleus, and astic scattering experiments tic scattering experim Ratio of elastic scattering cross section for positrons 17 p2923 N68-28393 [BNL-12342] and electrons on protons IDESY-67/221 Atomic energy levels and electromagnetic branching ratios in N 15 from C 13/He 3,px/N 15 reaction 17 p2925 N68-28523 01 p0105 N68-10389 oton correlations in light nuclei
11 02 p0245 N68-11480 Neutron-protor Nuclear elastic and inelastic scattering, exchange potentials, proton scattering, and nuclear deformation studies Monte Carlo calculations of /e,e'p/ reaction for in-cident energies between 300 and 600 MeV (ISS-67/9) 02 p0249 N68-11718 02 p0249 N68-11718 17 p2928 N68-28653 Data tables for differential cross sections of elastic coton-proton and proton-deuteron scattering and for Scintillation cou inters for studying angular distributions of protons in /e,e'p/ experin proton-proton and p real part of proton-ne [SLAC-TRANS-80] 02 p0214 N68-11795 neutron scattering amplitude 17 p2932 N68-28945 Analysis of six-prong jets at 8 GeV/c positive pion-proton interactions [INR-807/VI/PH] 03 p0390 N68-12414 Amplitudes, branching ratios, and inelastic pion-sorton reactions to study resonances and their decay [UCRL-18154] 17 p2934 N68-29030 Radiochemistry cross section data tabulated for reactions involving incident protons, neutrons, and piemesons in energy ranges from 20 to 400 MeV [ORNL-3884] 03 p0314 N68-12507 Elastic scattering of protons from allicon single systals is investigated 18 p3148 N68-29588 Angular distribution of polarized proton beams scat-tered from oxygen cyclotron target 18 p3127 N68-29734 Intermediate bosons produced in proton-nucleon (NEVIS-1531 03 m0392 N68-12510 K sigma N parity determined using crystal containing polarized protons as target [UCRL-17230] 03 p0392 N68-12517 Complex angular momentum theory for elastic proton and neutron scattering by carbon and nitrogen nuclei [TUEP-68-12] Rocket measurements of fluxes and spectra of rapped protons near solar minimum during magneti-18 p3133 N68-30272 Differential cross sections for elastic and inelastic scattering of protons from Sn 120 [ORNL-4252] 18 p3133 N68-30350 cally quiet period [AFCRL-67-0461] 18 p3133 N68-30350 04 p0570 N68-13008 Slow neutrons and high energy protons used to study nucleus, X ray diffraction, and theory of neutron scat-tering from liquids [BNL-50059/7-462/] 05 p0704 N68-13971 Optical model analysis of angular distributions for lastic scattering of protons with cosmotron to study IORO-1316-57] 18 p3134 N68-30420 Proton spectra of deuteron-proton reaction in titani-um 48 and titanium 50 [INP-594/PL] 18 p3136 N68-30621 High energy charge cross sections measurement for incident protons and atomic hydrogen in various ganes and spectra of platinum in decay of gold-195 [ORNL-TM-1988] 05 p0708 N68-14224 Proton scattering from heavy rotational and vibra-Beam loss distribution and shielding experiments to evaluate radiation problems for proposed 200 GeV strong focusing proton synchrotrom [UCRL-1797] 05 p0711 N68-14406 19 p3321 N68-30936 Proton total reaction cross sections of carbon and optical model analysis of proton carbon elastic scattering Injector systems for strong-focusing 200-BeV proton 19 p3325 N68-31135 05 p0644 N68-14604 Formula für calculating differential cross sections of proton-proton elastic scattering [LNF-68/25] 19 p3330 N68-31523 Data compilation for he eutron-deuteron reaction helium 3 neutron-proton and on and scattering cross sec-19 p3330 N68-31523 Energy levels of chlorine using reaction S/p, gam-[CCDN-NW-6] 05 p0716 N68-14680 ma/Cl (COO-1120-71) Delayed protons of tellurium 111 produced by pal-ladium 102/carbon-12,3n/reaction [JINR-P6-3494] 05 p0716 N68-14688 19 p3334 N68-31744 Polarization and cross section proton scattering from beryllium ta 20 nd cross section measurements for target 20 p3541 N68-32329 Proton intersecting storage ring properties, and reference bibliography on colliding beam experiments 03 p0720 N68-14976 Proton and neutron scattering on deuterium and carlow values of momentum transferred to sed in liquid hydrogen bubble chamber 07 p1041 N68-16357

20 p3546 N68-33050

22 p3924 N68-34995

CEA-R-3291]

of hydrogen [BNL-1 [877]

Digital computer program for calculating radial dis-ibution of dose for 100 to 300 keV protons incident

07 p1050 N68-16806

Bevatron and spark chamber measurements of neutron-proton scattering from 6 to 30 GeV/c 22 p3924 N68-34992

High energy elastic scattering of pinns, kaons, and stiprotons from protons

Antihyperon, hyperon, and two body reactions in K-meson and proton collisions [UR-875-2]8] 08 p1216 N68-18013 08 p1216 N68-18013 Energy loss of protons in Be, Al, Si, lucite, sapphire, 09 p1410 N68-19194 matic quantities for two-body and quasi two-tooproduction on protons tabulated -77] 09 p1396 N68-19262 body photopro ISLAC-771 BRIGIT computer program for proton elastic scattering resonance [ORO-2972-34] 10 p1561 N68-19531 amic polarization of protons by solid state effect red on Er-doped and Nd-doped Y ethyl sulfates 10 p1487 N68-20038 Strange particle resonant states from pion proton in-11 p1749 N68-20661 Production of kaon-antikaon pairs in pion-proton in-teractions 11 p1750 N68-20776 Recent proton and electron precipitation measure-ents in auroral zones ments in aur 12 p1866 N68-22093 Angular distributions of protons from lithium reac-tions at low deuteron energies [IBJ-849/I/PL] 12 p1925 N68-22274 12 p1925 N68-22274 Attenuation of neutron fluxes generated by high sergy protons in iron aqueous mixtures (RC-TT-1278) 12 p1925 N68-22352 energy protons in [NRC-TT-1278] Proton-induced reactions on light and medium weight nuclei, and nuclear reactions effect on efficiency of germanium and silicon detectors of protons [USC-136-132] 12 p1927 N68-22404 rectors of protons 12 p1927 N68-22404 Total reaction cross sections for protons between 10 and 22 million electron volts on carbon 12 and calcium [LA-3842] 12 p1928 N68-22460 Feynman graph analysis for pion angular distribu-tions in proton-antiproton annihilations into mesons [LYCEN-6757] 12 p1932 N68-22617 Mathematical model for pion angular distribution in proton-antiproton annihilations
[LYCEN-6751] 12 p1932 N68-22629 Resonance production in the roton interactions at 3.9 GeV/c in the negative pion plus UH-511-17] 12 p1935 N68-22694 Neutral K-meson cross section measurements on ns at low energies 12 p1936 N68-22734 Measurement of pion electroproduction cross sec-tion from protons [LAL-1185] 12 p1936 N68-22738 12 p1936 N68-22738 Negative pion capture by hydrogen in hydrogenous (JINR-P13-3653) 12 p1941 N68-22927 Single pion photoproductic [DESY-67/35] on protons 12 p1941 N68-22928 Survey on neu rticle, neutron-proton, ron, and neutro tritium reactions 13 p2114 N68-23232 [NYO-1082-10] Rho meson production and decay in pion-proton in-teractions at 2.26 Bev/C 13 p2117 N68-23554 Six-prong interactions of 16 GeV/c pions with 13 p2120 N68-23783 Study on superconducting proton linear accelerator in high energy range [NP-17272] 13 p2050 N68-24265 Characteristics of singly and doubly charged parti-cles in primary cosmic radiation during low solar activi-13 p2123 N68-24324 Pion-proton-neutron reactions using propane bubble tamber JINR-P1-36771 14 0 N68-24475 Energy requirements for proton production by elec-tron impact of hydrogen plasma [NASA-TM-X-52344] 14 p2304 N68-24657 Differential cross section and production angular dis-tribution data from kaon-proton interactions in hydrogen bubble chamber hydrogen bubble of COO-1195-116) 14 p2305 N68-24675 Pion proton elastic scattering experiments and phase ift analyses shift analyses [UCRL-18001] 14 p2306 N68-24794 Gamma ray production from cosmic proton-an-tiproton interactions [NP-17316] 14 p2340 N68-24813 Incidence of radiation indi lethality in space 14 p2199 N68-24876

EX

in K-

1013

hire,

194

two-

262

cat-

531

fect

in.

661

in-

776

ire-

993

ac-

174

igh

52

um tm-

04

10

60

17

in

29

14

14

c.

8

7

Helium and carbon /p.2p/ reaction 14 p2309 N68-24949 stants and basicities determined for selected organic oxides [NUS-R-518] 14 p2216 N68-24982 Structural design and cost estimates for billion elec-tron wolt proton synchrotron [NP-17274] 14 p2236 N68-24988 Single pion production in positive pion-proton in-14 p2311 N68-25057 Pion-proton high energy reaction analysis by means of alpha heavy plate spark chamber [CEA-R-3209] 14 p2314 N68-25165 14 p2314 N68-25165 Horizontal cryostat for polarized proton targets [CEA-R-3172] 14 p2239 N68-25549 Low energy protons and electrons in earth magneto-(NASA-CR-88242) 15 p2548 N68-25676 Optical model transmections for neutron-pr coefficients and cross reactions in unstable isomeric nuclei (UCRL-50359) 15 p2512 N68-25692 Polarization in pion proton scattering at various nergy levels 15 p2514 N68-25947 Muon proton elastic scattering cross section at high omentum transfer 15 p2514 N68-25948 Absorption cross sections for electron capture by it protons in hydrogen, helium, nitrogen, and argon 15 p2515 N68-26018 Six prong interactions of pions and protons and resultant particle production and distribution [INR-837/VI/PH] 15 p2525 N68-26776 Polarization of lambda hyperons in neutrino reaction with protons 15 p2527 N68-26952 Pion-proton interactions, elastic scattering, and esonance production and decay 16 p2719 N68-27159 Neutron bombardment of tritium target and analysis n emission of protons, deuterons, and tritons 16 p2719 N68-27163 on emi Pion-proton elastic scattering with scattering cross 16 p2720 N68-27187 Electrons and protons in long lived streams of ener-[NASA-CR-95732] 16 p2753 N68-27464 Neutron proton surface delta interaction in spherical odd mam nuclei [SGAE-PH-64/1968] 16 p2723 N68-27740 Mesons and spectator protons in deuterium bubble chamber 16 p2723 N68-27818 Differential cross sections for elastic scattering of ons by protons, and application of Regge pole theory differential cross sections 16 n2724 N68-27839 Elastic scattering of high energy protons on various (JINR-E1-3708) 16 p2727 N68-27981 High energy interactions of protons with heavy nuclei of emulsions [JEN-174-DF/I-52] 17 p2926 N68-28563 Quantum statistical model applied to pion and kaon distribution and production in proton-antiproton an-17 p2926 N68-28601 Cross sections and wave analysis in single pion production by kaons on proto [UCRL-18131] 17 p2931 N68-28937 Timue irradiated with eutrons to study induced r tion in astronauti [NASA-CR-95722] 17 p2827 N68-29371 Two body final states paractions at high energies ced in kaon-proton in-17 p2943 N68-29491 Comparative analysis of characteristics of selected final states from positive kaon proton interactions at high energy 17 p2944 N68-29494

Six prong negative pion pr GeV/c incoming momentum

Magnetic analysis of protor bombardment of vanadium \$1 [JEN-181-DF/I-55]

Multiprong events in 25 BeV/c negative pion proton

olon interactions at 11

17 p2944 N68-29497

17 p2944 N68-29498

18 p3127 N68-29717

production by deuteron

ILA-39581

Proton effect on hydrogen line glow in polar auroras (FTD-MT-65-478) 18 p3068 N68-30101 Laboratory simulation of lunar luminescence using neteoritic material and ultraviolet and proton irradia-AFCRL-68-02351 Vector meson d DESY-68/61 Compton scattering from protons at 90 deg in energy range 550 to 1130 Mev Radial acceptance of 10 MeV proton linear accelera-Production of tritium from helium irradiated by high energy protons Proton, chlorine, and rubidi resonance in antiferromagnetic manganese chlorides and rubidium nuclear magnetic erromagnetic crystals of rubidium Positive kaon plus proton yields positive kaon plus megative pion plus delta resonance interaction at 4.6 and 9 BeV/c [UCRL-18201] 20 p3546 N68-32996 Radiative proton deuteron interactions at 197 MeV 20 p3547 N68-33074 OGO-A scintillation protons in solar coumic rays [NASA-CR-96278] FORTRAN program for calculating particle spec roduced in high energy proton-proton collisions wo temperature statistical model two temperature stat [NASA-CR-96317] Antiproton-proton positron pair and antip two gamma rays for in 1.50 and 2.50 GeV/c ihilation into electron n-proton annihilation into Energy spectra and angular distributions of protons oduced by irradiating copper with 14.3 and 16.6 tion and design of du particle accelerators (LA-DC-9421) Polarization of protons i in elastic scattering of polarized protos [UCRL-18137] Electron-proton charge difference determined by large measurements on magnetically suspended iron Pion-pion scattering effects in proton-antiproton an-ministrices at 2.5 GeV/c nce production effects on pion pair angular m of reaction pion proton approaches limit of S wave pion pion elastic scattering in pion proton in-Virtual proton Compt ffect and electron /muor test of quantum ele trodynamics (LNF-68/38) ferences (CERN-68-32) Triton-proton reactions of zirconium and tin isotopes Omega neutron, phi neutron at 2.10 BeV/c and nega-ve pion proton elastic scattering at 1.89 and 2.10 Reaction negative kaon plus prot pion plus negative pion plus prot GeV/c studied in hydrogen bubble c [COO-1195-111] 23 a proton yielding positive a proton at 4.1 and 5.5

18 p3164 N68-30131

analysis of pion-proton

18 p3137 N64-30699

19 p3324 N68-31083

20 p3540 N68-32254

20 p3415 N68-32267

to detect 3 to 90 MeV

20 p3591 N68-33302

20 p3551 N68-33548

20 p3552 N68-33557

21 p3735 N68-33777

21 p3743 N68-34513

21 p3743 N68-34516

22 p3913 N68-34856

22 p3925 N68-34997

22 p3925 N68-34998

22 p3927 N68-35150

22 p3927 N68-35158

of wide angle electron reement with quantum

22 p3927 N68-35159

22 p3932 N68-35645

23 p4111 N68-36015

23 p4113 N68-36138

23 p4114 N68-36213

23 p4118 N68-36662

negative pion system

n reaction 23 p4121 N68-36783

action of pions in

natron proton ion

Cosmic gamma rays from metagalactic proton- an-[NASA-TM-X-63368] Observation of zero i ic spin for negative pion COO-1428-841 23 p4128 N68-37041 n transfer experiments of yielding neutral pion plus ni synchrotron 23 p4128 N68-37042 ICOO-1749-21 Infrared adsorption lines in rutile or deuteron trapped near cation of vi (COO-1434-04) of valence 3 23 p4156 N68-37126 24 p4210 N68-37431 on hydrogen e charge exch ecular orbitals atom system symmetric 24 p4305 N68-37472 24 p4211 N68-37545 High energy two prong interactions in negative pion COO-1428-71] 24 p4315 N68-37872 ata on strange particles ions at 5.0 GeV/c 24 p4315 N68-37903 m negative pion-proton in [COO-1428-72] Rapid contraction of protostars to stage of quasi RIFP-661 10 p1590 N68-19573 protostellar disks and prior to Hayashi track 16 p2757 N68-27383 Outer rings in stellar eve [NASA-TM-X-61135] Mathematical model for ad interstellar clouds as spectra of proto and interstellar close (NASA-CR-95938) 19 p3363 N68-31168 Gravitational insta star formation bility of interstellar medium and 21 p3769 N68-34223 Breadboard and prototype models developed for solar constant measuring in (NASA-CR-90098) 01 p0064 N68-10624 nt package for study Prototype space fligh of circadian periodic [NASA-CR-91062] Saxon reactor special data on prototype designant chemical shim en [WCAP-3269-59] ly irradiated to obtain aterials for use in large Flight prototype m (NASA-CR-92047) r flash analyzer 11 p1699 N68-21440 Thermal scale m theory for predicti prototypes 14 p2372 N68-25088 Medium energy physic cs program - prototype linear accelerator dev (LA-3884-MS) 16 p2636 N68-27021 Feasibility of thermoela craft prototype wing tanks tem for producing air 16 p2590 N68-27946 for use in prototype 20 p3533 N68-33369 console prototypes for devices 21 p3645 N68-34663 configuring control and INASA-TM-X-611961 ory, design, fabrication, and testing [NASA-CR-12111 24 p4240 N68-37906 NT AMOEBA NT MICROSPORES NT SPORES agnetic field effects on cell division and growth of INASA-CR-913991 04 p0432 N68-13160 PROTUBERANCES
NT PROTON PROTUBERANCES Steady and fluctuating airle surrounding structure of tre tunnel /16T/ [NASA-CR-61994] ads on protuberance and monic propulsion wind 22 p3801 N68-35786 ere, and flow visualization ex-wind tunnel on series of cylin-aturn 5 protuberances

SU

pe

N

THE LE

flig

loc [A

for [S

IA

PA A

COL

ele [R

(A

PSY

PROVING

THEOREM PROVING

Logical structure of evidence evaluated as quantita-ve measure of reliability of legal proof 05 p0760 N68-14391

Mathematical models used for determining sig-nificance of feature and other data to identify in-dividuals for criminological proof 05 p0761 N68-14393

Operational rendezvous techniques demonstrated during Gemini project 05 p0740 N68-14942

PRTR [REACTOR]
U PLUTONIUM RECYCLE TEST REACTOR PSEUDORANDOM SEQUENCES

Methods for generating pseudor from nonuniform statistical distributio [NASA-CR-62051] 11 p 11 p1734 N68-21843 Three variable self adaptive flight control system

with discrete interval binary noise perturbation signals 12 p1851 N68-21931 Comparative analysis of two concepts in generation

15 p2491 N68-25686 of uniform pseudorandor [NASA-TM-X-60370]

PSYCHIATRY

Conference of Air Force behaviorial scientists dealing with personnel selection, psychiatric and psychological treatment, radiation sickness, and related research activities [AD-665846] 11 p1642 N68-21795

Roles of flight surgeon and psychiatrist in evaluation at treatment of psychiatric syndromes 11 p1642 N68-21796

Psychiatric selection for hazardous duties and stress psychophysiology related to aerospace research activi-ties

11 p1638 N68-21798

PSYCHOACOUSTICS

Biophysical model for hearing process, auditory dis-imination of time and signal intensity, and pitch dis-imination as function of tone duration 04 p0462 N68-13474

to obtain potential mechanisms for in by subliminal means Literature survey to ob

inal means 06 p0797 N68-15147 [RADC-TR-67-463] Effects of attention ditude of acoustic reflex ding conditions on mag-

[REPT.-751] 09 p1285 N68-18266

Basic studies of binaural interaction, including effects of signal intensity and duration on critical bands, auditory perception, and resp (TRACOR-68-593-U) 15 p2401 N68-26384

Psychophysical experiment in human response rate detection of auditory signals

16 p2596 N68-27188 Noise reduction in small enclosed structures in terms physiological and psychological effects of physiological and [NASA-CR-1155] 20 p3605 N68-33266

PSYCHOLOGICAL EFFECTS

NT OCULOGRAVIC ILLUSIONS

Argus project research on psychological effects of ocial isolation and sensory deprivation 01 p0010 N68-10410 (REPT.-31)

Physiological and psychological effects of prolonged exposure to low intensity magnetic fields [NASA-CR-90223] 02 p0166 N68-11758

Social significance, and psychological and physiolog-ical effects of technological advances

03 p0429 N68-12085 Psychopathological analysis of sensory deprivation of weightlessness effects during manned space flight 04 p0455 N68-13196

Physiological and psychological effects relating to dryness in high-altitude jet flying [NASA-TT-F-11295] 04 µ0462 N68-13479

Aerospace medicine and hiology bibliography on physiological, psychological, and environmental effects on man during serospace flights
(NASA-SP-7011/43)] 05 p0611 N68-14671

Aerospace medicine and biology bibliography on physiological, psychological, and environmental effects on man during aerospace flights [NASA-SP-7011/427] O5 p0611 N68-14725

Physiological and psychological effects of 62 days of ed confinement of six young men

[NASA-TT-F-11399] 07 p0945 N68-16643 Biological, medical, and engineering studies for manned space flight - acceleration stresses, human tolerances, space flight feeding, protein metabolism, and life support systems d life suppor PRS-447321 09 p1280 N68-18906

Influence of psychological stresses resulting from physical situation of experiments and degree and com-plexity of fidelity of environmental simulation used [7-298] 09 p1290 Ne8-19288

Optical illusion effects in astronaut vision during 10 p1478 N68-20560

Psychological factors related to tolerance of confinement in fallout shelter (REPT.-75111-3F) 11 p1636 N68-21339

Effect of signal duration on detection for gated and CONTINUOUS NOBE [NASA-CR-94734]

14 p2221 N68-24671 Human psychological reactions and later psychotic and psychosomatic effects of confinement in prisoner of war and concentration camps [NASA-TT-F-11787] 17 p2820 N68-28564

17 p2820 N68-28564 Psychological importance of time in time sharing

(BBN-1687) 19 p3218 N68-31891 Human perception of angular acceleration during and after rotation [NASA-CR-96631] 21 p3635 N68-34013

High intensity intermittent audio and visual stimuli fect on human behavior and physiology AD-673970] 24 p4205 N68-38486 effect on h [AD-6739701

PSYCHOLOGICAL FACTORS

Reliability of human performance in production process - psychological factors - conference [AMRL-TR-67-88] 02 p0170 N68-11396 Classification of human error for psychological relia-

02 p0171 N68-11397

Monte Carlo simulation of molecular approach using simple multiplicative model of human behavior, and comparison to molar approach 02 p0171 N68-11398

Physiological and psychological factors related to rofessional photointerpretation 06 p0776 N68-15033

Psychological appr g models in manual oach to human operator engineer-

06 p0781 N68-15912

Psychological, psychophysiological, and psychiatric actors indicated by routine electroencephalograms and in flight crew selection 08 p1128 N68-17579

Psychological and social factors in using off-duty time during long-duration space flights [NASA-CR-93834] 10 p1477 N68-20265

Psychological factors related to tolerance of confine-ent in fallout shelter REPT.-75111-3F) 11 p1636 N68-21339

Psychological literature survey relevant to develop-ing military aircraft surface camouflage schemes to minimize visual detection [NADC-AC-6806] 13 p2006 N68-23784

Socio-psychological surveys as basis for making in-rnational political and technical decisions on jet air-raft noise reduction procedures 14 p2189 N68-25629 [INC/C4/P8]

Aerospace medicine reports on psychological and hysiological problems of supersonic and space flights 17 p2819 N68-28516

Psychological factors in thinking direction during problem solving [RTS-4098] 20 p3410 N68-32506

PSYCHOLOGICAL SETS

Psychological factors in thinking direction during problem solving [RTS-4098] 20 p3410 N68-32506

PSYCHOLOGICAL TESTS

Measure of conceptual structure complexity by im-reasion formation - Personality tests and human premior behavio (TR-5) 02 p0172 N68-11658 Conditioned suppression technique for studying X

ray stimuli in primi 03 p0304 N68-11942

Error estimate for probabilition in form discriminating data [IZF-1967-17] ty choice axiom applica-96 p0777 N68-15267 Mental performance in mild oxygen deficiency 09 p1290 N68-19443

ent from others on task ence and conformity 10 p1476 N68-20061

Statistical testing and correlation of means, variances, and covariances with applications for psychological testing theory
[TR-76]

16 p2693 N68-27068

Increasing success and failur making task on perceived inform [TR-9] re in com plex decis ation quality 16 p2604 N68-27415

PSYCHOLOGY

MILITARY PSYCHOLOGY PSYCHOACOUSTICS PSYCHOLOGICAL SETS

Personal relations and communication processes in groups, physiological and psychological conditions of conformity, and methodology of social research [AD-664256] 09 p1287 N68-18406

Human psychological engineering factors in develop-ment and implementation of display media 12 p1827 N68-22316

Bibliography on using information theory in AD-6647731 13 p2003 N68-23165

information on Soviet research in d application of communication theory telepathic communication Summary in telepathy and a techniques to tel nication 19 p3218 N68-32034

Methods and results of early and recent Soviet theoretical and experimental research in telepathy 19 p3218 N68-32035

PSYCHOMETRICS

Conditioning to large-scale displays in extraction of information [RADC-TR-67-411] 02 p0168 N68-11164

Paradoxial color perceptions obtained from rotating 02 p0170 N68-11337

Effect of systematic variations in perceived scoring rormulas on test performance [NAMI-1010] 06 p0777 N68-15204

Computer position profile for analyzing, and selecting computer personnel [TR-53] 06 p0813 N68-15944

Least square generalized sca mation with variable loss functio [AD-664506] d scale free matrix approxi-

09 p1357 N68-18257

Effect of aroused testing conditions on measurement of fear of failure in thermatic apperception tests administered to male high school students tudents 13 p2003 N68-23239 [TR-25]

Stability of Edwards personal preference schedule [NAMI-1019] 18 p3016 N68-30715

Empirical comparison of factor structure reproduc-ions in association measures of binary variables AD-671074] 19 p3300 N68-31104 tions in associa [AD-671074]

T value limitation tables of probability distribution in human behavior [AMRL-TR-67-161] 22 p3814 N68-35857

PSYCHOMOTOR PERFORMANCE

Effects of sleep deprivation on subject - EEG, task performance and phychological responses [SAM-TR-67-59] 02 p0164 N68-11050 Four hour psychomotor performance levels of sub-cts in simulated manned orbital laboratory

SAM-TR-67-55] 02 p0165 N68-11078 Workmanship relation system - human reliability nship to total production

02 p0171 N68-11399

Psychophysiological char ties after prolonged bed rest inges in human body activi-04 p0455 N68-13195

Physiological reactions of pilots during simulated egress from Voskhod spacecraft [JPRS-44209] 06 p0773 N68-15339 06 p0773 N68-15339

Human operator describing functions with visual and tactile displays

06 p0780 N68-15906 r interactions during per-ntrol tasks using high inertia im display and control systems man sensory-motor ance of manual contr

tracking systems - optimu for tracking missiles 06 p0781 N68-15915

Peripheral and central adaptive dynamic response characteristics of human operator in manual control 06 p0783 N68-15921

Psychological and physiological models for describ-g biological processes of controlled eye and forearm ovement during target tracking operations 06 p0783 N68-15922

Monkey performa ance testing apparatus for deter-

mining radiation effects [AFRI-TN67-1] 13 p1998 N68-23171 Afferentation effects on eye movements with and without visual control [RAE-LIB-TRANS-1280]

14 p2203 N68-24406

Least squares spectrum time series analysis method for evaluating human physiological and psychomotor performance

14 p2197 N68-24862

DEX

27415

ses in

8406

elop-

2316

y in

3165

h in

2034

oviet

2035

on of

1164

ating

1337

oring

1204

lect-

5944

rosi-

3257

ment ad-

1239

e 1715

duc-

104

m in

857

tank

050

078

tion

tivi-

195

339

906

rtia

915

nse

121

nib-

222

71

Alertness and psychor keys during flight esponses in two mon-14 p2199 N68-24870 Prolonged bed rest effects on gravity tolerance and psychomotor performance of [NASA-CR-62073] 14 p2200 N68-25095 Perceptual motor skills experimental design and man machine system [IZF-1968-6] 15 p2399 Nas-25203 Heart rate of change parameters and performance of cognitive, perceptual, and psychomotor tasks under [NASA-CR-92203] 18 p3014 N68-30150 U.S.S.R. studies in space biology and medicine - life apport systems for manned space flight, human hysiological and psychological stress tolerances, and tobiological experiments. exobiological experii [JPRS-46456] 21 p3631 N68-33909 nkeys during weightless 21 p3632 N68-33910 Effect of auxiliary magn ation display on side looking radar target recog [AMRL-TR-67-134] 22 p3818 N68-35945 Antihistamine compounds effects on psychomotor performance and physiological responses at three simu-lated altitude levels. 23 p3996 N68-36017 [AM-68-15] or responses to light, color, and geometric form stimuli [SMRL-525] 24 p4208 N68-38440 PSYCHOPHYSICS NT PSYCHOACOUSTICS Auditory threshold measurer [AD-660011] ents in humans 02 p0170 N68-11393 Bibliography psychophysics AD-663906] on signal detection theory and 08 n1136 N68-17876 PSYCHOPHYSIOLOGY Psychophysiological me formance during operation [AGARD-CP-14] ical measures to assess pilot per-erational flight environment 03 p0309 N68-12798 in human body activi-04 p0455 N68-13195 Visual and auditory signal responses, including chroatic adaptation, binaural and monaural phenomena, and other psychophysiological da [NASA-CR-93854] 10 p1477 N68-20369 Isolation effects on time perception and its physiological correla [NADC-MR-6718] 10 p1469 N68-20457 Psychiatric selection for hazardous duties and stress psychophysiology related to aerospace research activi-ties 11 p1638 N68-21798 Curare effect on effort function of isometric muscle [USAMRL-765] 13 p2000 N68-23715 Effects of circadian psychophysiological function terplanetary spaceflights rhythm disruption on one of cosmonauts during in-14 p2196 N68-24635 Effects of hypnotic sedatives on quality of sleep, arousal characteristics, and psychophysiological performance of humans and effects on visual acuity tests.

14 p2198 No8-24866 Psychophysiological effects of long overwater flights on crews due to lack of visual orientation, and need for physical fitness and rescue operations training ETD-MT-24-124-67] 18 p3013 N68-29985 Circadian rhythms and effects of long distance flights on psychophysiological responses of passengers and (FAA-AM-68-8) 18 p3010 N68-30277 Modeling of physiological adaptation processes on electronic computer [RTS-4419] 20 p3405 N68-32510 Process development of system for digital computer processing of psychophysiological data to obtain high stress tolerance personnel [NASA-CR-1122] 22 p3816 N68-35102 Effect of differential rear selected body organs of Macaca [ARL-TR-66-8] d rearing environments on Macaca mulatta 22 p3811 N68-35388 Geomagaetic field effects on psychophysiological processes of interplanetary spacecrews and communicating with extracterestrial life (JPRS-46464) 23 p.3997 N68-36248

Pilot performance under conditions of hypexia or oxygen breathing at high pressures
[JPRS-46656] 23 p4001 N68-37345 Conditions contributing to variability in pulse (TR-28) 24 p4204 N68-38077 PSYCHOTHERAPY Conference of Air Force behaviorial scientists dealing with personnel selection, psychiatric and psychological treatment, radiation sickness, and resultd research activities
[AD-665846] 11 p1642 N68-21793 11 p1642 N68-21795 Roles of flight surgeon and psychiatrist in evaluation and treatment of psychiatric syndromes 11 p1642 N68-21796 Short-term group therapy for late adolescent airmen 11 p1642 N68-21797 PSYCHROMETERS Development and testing of mortarboard psychromotor for fuel moisture readings [WBTM-T&EL-3] 19 p3276 N68-3(1)8 PTM [MODULATION]
U PULSE TIME MODULATION PUBLIC ADDRESS SYSTEMS Design, and performance of battery operated circuit fur public address system [FTD-HT-66-635] 08 p1180 N68-17886 PUBLICATIONS U DOCUMENTS **PULMONARY CIRCULATION** Effects of hypoxia on pulmonary arterial pressure in ogs and serotonin levels in pulmonary arterial blood AFOSR-67-2735] 07 p0946 N68-16821 (APOSR-67-2735) Pulmonary circulation and blood and gas distribution in lungs during prolonged space flight 10 p1466 N68-20156 On-line study of pulmonary nitrogen washout by [AMRL-TR-67-77] 11 p1639 N68-20795 Pulmonary hypertension in rats resulting from ox-NADC-MR-68021 22 p3811 N68-35382 Pharmacological improvement of capacity of pulmonary circulation at high altitud [ARDG/FE/-FE-348-2-F] 23 p3997 N68-36155 PULMONARY FUNCTIONS Pulmonary pathological response data on four sul ects after breathing conditioned atmosphere and beir [NASA-CR-92540] 06 p0775 N68-15866 Weightlessness effects on pulmonary gaseous diffusion during space flight 10 p1465 N68-20155 Pulmonary functions and respiratory reflexes during space flight 10 p1466 N68-20157 Respiratory reflexes for clearing epithelial surfaces of respiratory mechanisms during space flight 10 p1466 N68-20159 Characteristics of pulmonary ventilation and oxygen and carbon dioxide alveolar tensions in atheletes be-fore, during, and after exposure to Mexico City al-titudes 14 p2200 N68-24886 Acute pathological effects and mechanisms of injury in cats vibrated erect with vertical sinusoidal motion 14 p2200 N68-24888 Changes in pulmonary ventilation, gas metabolism, and energy expenditure of cosmonauts during (SAM-TT-R-942-0468) 22 p3811 N68-35434 Gravitational and inertial force environment effects on cardiovascular and respiratory functions in dogs and [NASA-CR-97192] 23 p3998 N68-36568 PULMONARY LESIONS Pulmonary scintigraphy in lung edema [NASA-TT-F-11902] 21 p3638 N6B-34802 Mathematical model eigenvalue calculations for white dwarf stars as possible pulsars [NASA-TM-X-61028] 18 p3163 N68-29869 r hypothesis using Q values sosity, period, and spectrum 23 p4166 N68-36239 Red supergiant pulsar hypoderived from stellar luminosity, [NASA-TM-X-61284] PULSATING FLOW
U UNSTEADY FLOW

PULSE AMPLITUDE Energy scale for pulse height distributions from mma ray spectrometers based on inorganic scintilla-(ORNL-4118) 01 p0103 N68-10235 Pulse pile-up equations for finite channel width effect on spectrum broadening [DOUGLAS PAPER-4389] 05 p0639 N68-13987 Signal processing for high resolution pulse amplitude (BNL-11794) 05 p0660 N68-14210 Limiting pulsed on number of linear elec [NP-17078] current increase proportional to ectron accelerator sections 05 p0642 N66-14539 Digital technique for re tra by time to pulse heigh [AFOSR-67-2784] ding time dependent spec-05 p0662 N68-14699 16,384 channel puli cidence gamma ray spec nuclear physics research [USNRDL-TR-67-135] alse height analyzer for coin-actrometry in radiochemical and '06 p0846 N68-15726 tude, pulse width human ing discrete outputs in resented Gaussian random Asynchronous pulse am operator model for pro-response to continuously. Pulse height and pulse shape data telemetered from sounding rocket flight of directional neutron detector [NASA-CR-92683] 07 p1086 N68-16913 Statistical correlation Fourier amplitude ap NVO-1163-861 10 p1518 N68-19512 Least squares method of analysis of growth decay counting data and time dependent gamma ray pulsa-legist spectral data obtained from mixtures of genetically related nuclides [USNRDL-TR-64-5] Digital computer tech iques for analysis of pulse USNRDL-TR-68-4) 11 p1696 N68-20646 dization of de coup Regulator for base line st SGAE-E-9/1967) 11 p1674 N68-21316 Monte Carlo code for ca tribution due to monoenergorganic scintillators [ORNL-4160] dating pulse height dis-ic neutrons incident on 12 p1929 N68-22543 Love wave magnification in seismic signal strength (NVO-1163-80) 13 p2058 N68-23286 Harmonics, pulsation ampi tion of Cepheid variable stars [NASA-CR-87250] ide, and viliratory mo-16 p2756 N68-27467 System design for identifying channels of pulse analyzer memory data display [TR-170] Numerical least square plex pulse height spectra [NASA-SP-3044] method for resolving com-17 p2945 N68-29520 Fixed angle scattering m ture analysis [REPT.-894/II/PS] od for X ray crystal struc-18 p3077 N68-30574 Fission chamber pu counter for nuclear res [CONF-661020-18] ssor, and proportio rol system 18 p3118 N68-30676 nagnetic charges by com-Counic ray search for for puring scintillation pulse a 21 p3760 N68-33689 Excitation mechanism for cepheid pulsations 21 p3765 N68-33832 Intercranial pressure pulse stresses up to 40 g and biosynthesis of proteins and m [FTD-MT-24-244-67] waves during acceleration metabolic processes in ucleic acids 21 p3635 N68-34176 waves during acceleration intercranial pressure postresses up to 40 g 21 p3635 N68-34178 Pulse amplitude and transient response of semiconductor radiation detectors to fission fragments
22 p3949 N68-35074

SEGO, computer code to pulse height spectra to get in [NASA-CR-97254]

Pulse height analyzer, photometer, and secondar vidicon for space application

PULSE AMPLITUDE MODULATION

Amplitude modulated radiopulse flip-flups for or
puter applications

for unfolding acintillation acident energy spectra 23 p4129 N68-37068

imaging astronomic

23 p4066 N68-37413

06 p0805 N68-15255

Optimal linear receiver for digital pulse amplitude nive channels [E-68-1] es pulse amplitude pulse width model of Asynchro human operator [NASA-CR-87265] 15 p2400 N68-26158 Cluster suppression by pulse amplitude modulation for coherent radar [TR-0158/3230-46/-9] 15 p2429 N68-26688 Maximum likelihood receiver for digital data transmission via pulse amplit [NASA-CR-78333] liation 16 p2622 N68-27382 Design of multiple cha with solid acoustic delay li [FTD-MT-66-132] pulse height analyzer 19 p3278 N68-31495 [RADC-TR-68-147] 19 p3253 N68-31828 Systems analysis of performance of M-ary orthogonal and M-ary PAM feedback communication 22 p3832 N68-35009 PULSE CODE MODULATION NT DELTA MODULATION Data handling system for 8 bit biorthogonal teleme-er coded pulse code modulation with afficient synchronization [NASA-TM-X-63043] 03 p0323 N68-12543 Time, band type, and bit rate noise effects on in-oduction of error in pulse code modulation/frequen-modulation link [TM-61] 03 p0323 N68-12659 Flight evaluation of por pulse code modulation sig-orbit of Nimbus C satellite [NASA-CR-91138] , control, thermal, and subsystems during first 03 p0418 N68-12680 Intermodulation interference effects on pulse code modulation,frequency mod [AFETR-TR-67-9] on error rates 04 p0478 N68-13252 Analysis and minimization of futctions, second order proces in pulse code modulation teleme [NASA-CR-91666] ization of error between sample er processes and their facsimiles 05 p0629 N68-13948 Device for converting voltages into proportional umber of pulses 06 p0810 N68-15463 Review of existing gray code counters for digital con-06 p0810 N68-15464 and data compressor for advanced vehicle se code modulated telemetry system with borne pulse code m adaptive capability [NASA-CR-92673] 07 p0962 N68-16361 Design and function tests of medium resolution in-ared radiometer pulse code modulated telemetry unit for Nimbus C experi [NASA-CR-93509] 09 p1305 N68-19208 Coder decoder system for impared with PCM systems pseudo ternary codes [ESRO-TN-6] 13 p2036 N68-23985 Measuring equipment bandwidth of frequency ration radio transmission (SRDE-67010) id method for occupied uluted-pulse code modula-14 p2223 N68-25100 Experimental determination tion signal to noise ratio, and m for pulse code modulation analy n of pulse code modula-methods of signal analysis og data 15 p2422 N68-25784 13 p2422 N68-25784
Operational experience with airborne and ground magnetic tape PCM system used in flight tests of aircraft 17 p2853 N68-29190 Pulse code modulation telem etry data system 19 p3237 N68-31233 Code-pulse error correcting decoders for codes transmitted by sequential or parallel pulses [FTD-HT-23-515-67] 19 p3241 N68-31624 ide, and performance of Block diagram, operating m pulse code modulation teleme

netry 19 p3245 N68-32116 Construction, testing teristics of H-01 wavegur coasted aluminum tubing testing, and transmission charac-waveguide stretch formed by dielectric

20 p3450 N68-32533

20 p3440 N68-33353

21 p3658 N68-34129

and PCM command or atmosphere sounding

nibility of using pulse code modulation iques for long distance telephone transmission oaxial cables

PCM telemetry encoder scoder for recoverable upper

(BMWF-FB-W-48-33)

Design, manufacture, and testing of Nimbus B PCM femetry subsystem, bench test equipment, and ound stations [NASA-CR-96892] 22 p3833 N68-35147 Self-synchronizing, edulation telemetry al coded pulse code communicating with n for com unmanned spacecra [NASA-TR-R-292] 23 p4018 N68-36333 d application uantized measurements modulation, data comand application to puls pression, and predictive [NASA-CR-97197] 23 p4021 N68-36729 Processing of pulse code telemetry data [DLR-FB-68-54] modulated satellite 24 p4226 N68-37987 PULSE COMMUNICATION arch time of periodic pu e sequence in pulse flux 01 p0044 N68-10326 Performance prediction signal transmission over fr [NASA-CR-93249] error analysis for digital lispersive channel 08 p1148 N68-17885 Waveform distortion in arlington detector for M-ary p maximum likelihood ulse frequency modulation signals [NASA-TN-D-4294] 09 p1302 N68-18542 Design of random signs 10 p1495 N68-19741 Method of computing eric distortion of NASA-CR-94602) 13 p2027 N68-23610 Satellites for independent positions and to voice and digital communication (REPT.-67-C-316)

14 p2220 N68-24501 Wideband digital techniques for troposc [C&S-68-TR-2623] and detection 15 n2427 N68-26369 [AFCRL-68-0179] 16 p2618 N68-27026 Digital reading sys metry equipment 19 p3241 N68-31614 oders for codes

Code-pulse error correct transmitted by sequential or p [FTD-HT-23-515-67] 19 p3241 N68-31624 Ternary codes for rege tive digital tran 21 p3656 N68-33781

ce and optimiz n of linear and adaptive rison with pulse code 21 p3658 N68-34141

methods for optimizing n systems - correlation rformance of communic tection using matched fil 22 p3833 N68-35132

Space com 23 p4024 N68-37417

PULSE COMPRESSION

asic categories for puls lications to spacecraft is 63 p0322 N68-12320

oncyclic binary codes 05 p0631 N68-14758 [JPRS-44088] ession waveforms with he in radar systems 06 p0799 N68-15560 Synth [TG-934] Straightforward analysis of signal distortion with ap-plications to wideband ionospheric dispersion [MTR-444] 11 p1663 N68-21581

Pulse compression a renomenon in chirp sign ation of spin echo

19 p3329 N68-31330

PULSE DOPPLER RADAR NT MONOPULSE RADAR

minating Doppler or range ambiguities related using repetitive waveforms in radar with using repetit [NRL-6631] 13 p2028 N68-23916 PULSE DURATION

Transient analysis of arterial fluid lines with respect to time domains and pulse width [NASA-CR-990] 03 p0306 N68-12494 Current pulse shortening effects in linear accelerator [SLAC-TRANS-73] 05 p0698 N68-14250 Effect of external high frequency oscillation source on shortening of current pulses in linear accelerators [SLAC-TRANS-75] 05 p0715 N68-14592

response to continuously pres ented Gaussian random 06 p0782 N68-15918

Pulse tran nsformer between s lifler for improved ti conductor counter me signal registration 12 p1850 N68-22630 [KFK-617] Asynchro de pulse width model of

human operator [NASA-CR-87265] 15 p2400 N68-26158 Apparatus for electric pulse o differential capacitance and lectrochemical reactions measurements leadi electrochemical reacti (NASA-TT-F-11772) 18 p3075 N68-30259

PULSE DUBATION MODULATION Pulse pile-up equations for finite chi fect on spectrum broadening [DOUGLAS PAPER-4389]

05 p0639 N68-13987 trol of servomotor with linear feedback [UCRL-17617] 05 p0639 N68-14203 Pulse width modulated polled to Maximum Pr ed switching voltage regulators Power Point Tracking /MPPT/

space power systems [NASA-CR-93413] 09 p1274 N68-18503 discrete time systems with se modulation of control 18 p3049 N68-29798

PULSE FREQUENCY MODULATION

Conditioning to large-scale displays in extraction of information [RADC-TR-67-411] 02 p0168 N68-11164 Frequency hopping modulation-demodulation stem with sequential decoder for multiple satellite ommunications channels

04 p0477 N68-13212 frequency modulation

Statistical analysis of pul-systems with white noise inpu [NASA-CR-96822] 21 p3662 N68-34565 Describing functions for statuse frequency modulated uni for stability analysis of integral sted unity feedback closed loop

[NASA-CR-96783] 21 p3674 N68-34594 Design, manufacture, and type qualification testing f programmable premodulation filters for NRZ pulse signal conditioner [NASA-CR-92346]

24 p4225 N68-37833 PULSE FREQUENCY MODULATION TELEMETRY Dual detection system for proces

ocessing PFM telemetry oring platform tapes 04 p0479 N68-13375 data from interplanetar [NASA-TM-X-63062] Resolution limit analysis for pulse frequency modula-08 p1151 N68-18247

Waveform distortion in maximum likelihood arlington detector for M-ary pulse frequency modula-in signals tion signals [NASA-TN-D-4294] 09 p1302 N68-18542

Dual detection system for processing AIMP satellite pulse frequency modulated telemetry data [NASA-TN-D-4561] 13 p2038 N68-24310 nt of pulse duration modula-

Design and develope tion multiplexer for tele [AMRL-TR-66-164] 14 p2229 N68-24418 Lectures at ESRO si ion for telemetry, er school on instrumenta-ellite localization, and

synchronization [ESRO-SP-11] 19 p3282 N68-32113 Characteristics of frequency r odulation telemetry 19 p3245 N68-32115

Block diagram, operating pulse frequency modulation de, and performance of netry 19 p3245 N68-32117

alation telemetry data Saturn pulse fre NASA-CR-61938 a compressor 21 p3659 N68-34156 Impact acceleration and FM/AM telemetry [NASA-TM-X-61204] red by accelerometers 21 p3693 N68-34442 ry system - bit-sync lock de-

23 p4024 N68-37419

PULSE GENERATORS Nanosecond pulse generator using avalanche (NRL-6539) 02 p0187 N68-11165

P

Power burst facility critical experiment reactor system control rud measurements [GEMP-560] 05 p0693 N68-14222 for testing linearity of mul-09 p1340 N68-18462 DEX

5918

2630

sel of

6158

eding ce of

0259

h ef-

3987

with

4203

ators PPT/

8503

with

9798

on of

1164

3212

4565

egral loop

4594

7833

RY

3375

dela-

8247

hood dula-

8542

ellite

4310

dula-

4418

entaand

2113

2115

ce of

2117

data

4156

eters

4442

k de-

7419

nche

1165

ctor

4222

mul-

Operational problems of using brushes as current ac-emulators in homopolar generator 09 p1275 N68-18904 cumulators in he (EP-RR-18) Test equipment for calibrating telemetry and pulse CM-R14-231 10 p1506 N68-20407 Servo design for speed balance Canberra Homopolar Generator [EP-RR-8] ce controls of rotors on 11 p1627 N68-20895 Safety studies on 1000 kW motor generator set sup-plying Camberra Homopolar Generator field [EP-RR-10] 11 p1627 N68-20924 Heat generation measured during operation of Can-berra Homopolar Generator arranged to supply 5 measurest magnet [EP-RR-9] 11 p1627 N68-20941 11 p1627 N68-20941 Skin effect and heating studied in steel rotors of fast-discharge Canberra Homopolar Generator [EP-RR-2] 11 p1627 N68-20942 Temperature, voltage drop, and dynamic stability seasured on Canberra homopolar generator with two stors connected in series 11 p1628 N68-21049 Construction and operation of blanking generator for Bendix multiplier in time of flight mass spectrome-(JUL-507-PC) 11 p1630 N68-21371 Design, operation, and te toroid for precision pulse ge [UCRL-17639] cruture compensation of 12 p1874 N68-22413 Precautions for decreasing pa to interference around nuclear r [CEA-R-3333] ulse amplifier sensitivity reactors 14 p2293 N68-25163 Technique for radio netic field [EGG-1183-428] 15 p2423 N68-25881 Time signal controlled pulse generator for triggering data gathering radar unit [ECOM-5191] 18 p3036 N68-30348 quids and difference by laser beams 19 p3316 N68-31399 Filament formation is frequency generation by tw [AD-6706[5] Time domain analysis of pulse generator [RADC-TR-68-147] 19 p3253 N68-31828 Design and operation of tr [ECOM-2953] ent voltage simulator 19 p3254 N68-31977 Rapid rise current pulse ge fast compression experiment [IPP-4/57] ors in mace range for 20 p3552 N68-32280 IFTD-HT-23-765-671 20 p3434 N68-32353 Feedback controlled 20 kW magnetic pulse genera-tor circuit description [UCRL-71084] 22 p3809 N68-35920 PULSE HEATING Pulse heating method for specific heat measurements on metals up to melting point [CEA-R-3287] 07 pl 100 N68-17141 Luxembourg effect in silicon used to study pulsed microwave heating of electrons, and change in electrical resistivity resulting 18 p3149 N68-29682 PULSE MODULATION NT DELTA MODULATION Ultimate boundedness form of stability for nonlinear 01 p0043 N68-10319 Nanosecond pulse generator using avalanche (NRL-65391 02 p0187 N68-11165 Theoretical and experimental st for switching high power in pulse m [ECOM-00 [23-F] 03 al study of new concepts se modulators 03 p0330 N68-12076 resonance pulses for ns in solids 04 p0558 N68-13467 ction linear electron ac-Pulse shortening in tw (SLAC-TRANS-74) 05 p0641 N68-14269 n probes, pulse techniques, plasma interaction studies 05 p0725 N68-14420 Wave propagation, plass cyclotron waves, and beam [SU-IPR-198] Mathematical model of predicting system stability [JPRS-45244] ear pulse system and 12 p1853 N68-22758 Parameters in snalog /dc/ and digital /single electron ulse count/ modes of processing data from photomul (NASA-CR-94737) 14 p2231 568-25648 for wideband cathode ray beam ncies from dc to 12 GHz 20 p3452 N68-33025

PULSE POSITION MODULATION llium amenide laser (MIC-TR-21) Pulse position mod telemetry for gas gun as (AD-6613121 Metals, and trans 03 p0349 N68-12173 tion modulutio ground station for sound NASA-TM-X-630701 of p0811 N68-15745 Ground station phase locked servo system for decoding pulse position modulation signals from sounding rocked.

[NASA-TM-X-63097]

07 p0967 N68-17010 07 p0967 N68-17010 propellant aprays [NASA-CR-93662] Design and fabrication lary piece using pulse parties [AD-469627] e telemeter units for artil-modulation gallium arse-Transient interfe 18 p3085 N68-30852 Dusign of pulse posit nication system [NASA-TN-D-4814] stion optical come 22 p3834 N68-35174 NT MONOPULSE RADAR Synthesis of pulse compression waveforms with weighted finite frequency combs in radar systems (TG-934) 06 p0799 N68-15560 Comparison of airborne X band weather radar per-remains with ground based S band radar system based a tiantiferstorm detection capability Q.756-NSSL-37] 06 p0799 N68-15598 (FTD-HT-66-554) Excitation mecha D2 pulsed lasers [FTD-HT-66-521] Wideband random signal radar s system 11 p1660 N68-20793 ar with feedback and obstent pulsed detection by savings over no feedba 15 p2425 N68-26193 Lutter radar echoes at 6 and 12 m wavelengths analysed to obtain lunar surface scattering data [NASA-CR-95405] 17 p2967 N68-28611 Radir signal design for op 19 p3235 N68-30885 Doppler signal analysis for C band pulse radar [AFCRL-68-0176] nd processing techniques photo devices SCL-DR-48-111 19 p3237 N68-31193 nRL-MR-1895) distribution of radar sensing average anguers from sea surface, [NRL-MR-1884] 22 p3836 N68-35563 PULSE BATE ne device for continuous guise and requiration rate a 07 p0950 N68-16676 Time spread of pulses p d by beta particles in IBJ-067/IA/E) 13 p2135 N68-23700 mance procedures, and aplifier and count rate Circuit applications, maint cospusion tests for pulse a S-1055) meter applicable to reactor (OBML-TM-1638, PT. 14) 17 n2889 N68-29408 variability in pulse (TR-36) 24 p4204 N68-38077 (FTD-HT-67-448) PULSE TIME MODULATION Invariance of composite pulse program control and ability of discrete compensator described by pulse Two-photon absorp fide using pulsed laser 18 p3050 N68-29829 or with time com-18 p3077 N68-30500 PULSE WIDTH AMPLITUDE CONVERTERS Pulsed liners, qui [FTD-MT-67-31] enel airborne of casing of signal seconlogical p Theory of laser pu FTD-HT-67-245] 05 p0632 N68-14994 Generation, detect treshort optical pulses [G-920479-8] ty of dc-to-pulse width converter for enelog-to-digital of NASA-TM-X-63271] onverter applications 17 p2863 N68-29440 NT O SWITCHED LASERS

Bibliography, theory, and experiments on optionizing in bulk semiconductors for millimeter was

02 p0259 N68-11439

primate retina structure 03 p0305 N68-12158

everal diffusely reflecting

05 p0671 N68-14122

NASA-CR-860071

(DOC.-12047-TDR1)

07 p1005 N68-16735 etal vapors for pulsed laser 07 p1005 N68-16942 Dynamic model for plasma heating by pulsed laser 07 p1063 N68-16954 Pulsed ruby laser holograms of reacting liquid 09 p1415 N68-19439 dies of emission from 10 p1536 N68-19922 Radiometric methods for mea (NBS-TN-418) suring laser output 10 p1536 N68-19935 High-energy pulsed liquid lase [TR-68-826.2] 10 p1536 N68-19944 ce of pulsed argon ion lasers 10 pt537 N68-20280 Output energy of resonant laser during switch off of 11 p1708 N68-20722 tational levels of H2 and 11 p1646 N68-20797 Photodiode system for synchronized switching of 12 p1884 N68-22131 of acctone and carbon lasers 13 p2110 N68-23958 Raman emission in mixtures sulfide excited by pulsed ruby Thermal model for retinal de mage induced by pulsed 14 p2200 N68-24887 Pulsed solid state laser injection system for testing 15 p2479 N68-26791 ated sir 17 p2897 N68-29018 distribuof temperature distribu-o neodymium laser pulsed 18 p3091 N68-30253 ITESNEDL-TR-68-36) 18 p3084 N58-30322 d formation of ultrashort Mode locking in lase 18 p3085 N68-30682 or of multi-subunit particles on se of ruby laser as light source 19 p3287 N68-30896. Heat transfer analysis of pulsed laser rod of finite [FTD-HT-23-769-67] 19 p3287 N68-31425 High current and low pr re oscillations in pulsed 19 p3287 N68-31438 ctrum of cade 20 p3566 N68-32790 Optical devices for cishonar flecting telescopes for space as ser tracking of passive satellites r space experiments, astronomy, and pulsed 20 m3590 N68-33178 fiors, and masors 20 p3493 N68-33279 emission power 20 p3493 N68-33281 monurement of vi-23 p4072 N68-36339 Pulsed ruby laser h s of hyperpolic rocket MSA-CR-97225] 23 p4161 N68-36641 Pulsed ruby Inter of INASA-CR-973551 ting system 24 p4265 N68-38160 PULSED RADIATION Pulsed neutron techniques for determining nuclea arameters of subcritical lattices of partially enriches (MIT-2344-07) 03 p0376 N68-12541 Time depends ulsed source in II BNL-TR-154]

[IN-1085]

[LGI-67/11]

[AD-663534]

Computer program, GRIPE-2, for analysis of experi-ental data taken in pulsed-neutron experiments N-1085]

Luminosity, and electron temperature in pulsed heli-um discharge spectrum

Pulsed echo ultrasonic velocity measurement

05 p0724 N68-14179

07 p1063 N68-16951

08 pl180 N68-17878

d plasmas in magnetic field

PU

PYL

-

E

PYR

PYRE

FOR

PYRI

T

Beam pulse and precise flight timing technique used for measuring nuclear reactions producing neutrons [ORNL-P-3206] 10 p1562 N68-19588 Low energy pulsed electron Statis (UCRL-50215) 10 pl512 N68-19665 induced electron pu ilses in organic liquids 11 p1649 N68-21028 [TID-24223] ar system for adiabatic compres Pulsed then sion of dense plasma [IIF-LA-4] 13 p2125 N68-23373 Pulsed neutron method for determining pulse response of subcritical reactor [CEA-R-3336] 14 p2293 N68-25092 Electron decay in pulse irradiated gases, radiolytic udies of ions in organic media, and solvated electrons (RRL-2310-223) 14 p2219 N68-25440 Hydrogen emission [NASA-CR-88231] 15 p2457 N68-25719 Cohn model for pulsed neutron reactivity in reflected reactors 16 n2703 N68-27218 Pulsed magnetic field methods of metal stamping at [FTD-MT-24-144-67] 18 p3082 N68-30508 Pulsed electromagnetic plasma acceleration and gas dynamics research [NASA-CR-96227] 20 p3555 N68-32550 Detection of supernovae pulse by gamma ray telescope and atmospheric scintillation method [NASA-TN-D-4732] 20 p3582 N68-33370 Measurements of particle emission produced by in-teraction of high power laser radiation with tungsten (AD-672093) 21 p3701 N68-34718 Spectral transmission measurements on fused silica during and after exposure to pulsed neutron irradiation [NASA-CR-1191] 22 p3912 N68-35826 Pulsed electrical power generation from magneti-cally loaded explosives 24 p4322 N68-37447 Computer program for finding peak energies from channel numbers with precision pulser employed to [BNL-12622] 24 p4314 N68-37860 Klystron oscillator designed for reduced excitation power use at nanosecond pulte rate [FTD-HT-23-974-67] 24 p4237 N68-38318 PULSEJET ENGINES Experimental thermodynamic and gas-dynamic study of combustion processes in pulsejets [DLR-FB-68-49] 23 p4187 N68-36543 PULSES NT ELECTRIC PULSES
NT GEOMAGNETIC MICROPULSATIONS
NT GEOMAGNETIC PULSATIONS
NT MICROPULSATIONS FORTRAN 4 computer program for computing radi-al and vertical displacement time functions for seismic-pulse propagation in solid half space overtain by solid layer [NVO-1163-105] 10 p1519 N68-19553 Synchronizer for delayed trigger circuit of oscil-scope sweep to study long series of nanosecond pulses [IFVE-SEF-67-12-K] 11 p1700 N68-21451 Compact pulse counter and serial encoder for use in third stage instrumentation system of Delta launch INASA-TM-X-631721 12 p1844 N68-22423 Propane bubble chamber with pulsed magnetic field [BMWF-FBK-68-02] 17 p2869 N68-29277 Memory tubes with barrier grids for shielding radar om nonsynchronous pulse noise 19 p3241 N68-31599 Shape of pulses generated by alpha particles in sil-on radiation detectors [REPT.-887/LA/E] 19 p3280 N68-31818 Sinusoidal pulse test method to account for variation of shock spectra with damping [NASA-TM-X-61198] 21 p3789 N68-34346 PULVERIZING U GRINDING [COMMINUTION] A-994

PUMICE Cratering in basalt and pumice targets by hyper-elocity impact of aluminum projectiles NASA-CR-61569] 08 p1250 N68-17561 velocity impact of an [NASA-CR-61569] Hugoniot equation of state measurements for sand-one, basalt, limestone, pumice, quartz, and polycarbonate resin [NASA-CR-73230] PUMP IMPELLERS Damping, and shaft load deflections in rotary screw Liquid fluorine pump, impeller, and inducer corro-sion resistance to cavitation flow [NASA-TM-X-1573] 16 p2672 N68-28241 NASA-TN-D-42821 PUMP SEALS Materials evaluation, design and fabrication work, and low pressure testing to develop high temperature hydraulic system actuator seals for use in advanced su-NASA-CR-91054] Lubricating mechanism, cage design, and heat eneration of ball bearings for liquid hydrogen tur-opumps, and design factors of contact seals for liquid fluorine pumps [NASA-TM-X-52415] AXIAL FLOW PUMPS
CENTRIFUGAL PUMPS
CONDENSATION PUMPS
ELECTROMAGNETIC PUMPS **FUEL PUMPS** ION PUMPS JET PUMPS TURBINE PUMPS VACUUM PUMPS Anticavitation device for creating backup pressure on line of output into pump of closed hydraulic system [FTD-HT-66-671] 02 p0215 N68-11201 Ultrasonic inspection of \$182 cylinders of high pres-sure pump KRS [TN-6607.256] 02 p0218 N68-11815 Ultrasonic inspection of 8182 cylinders of KRS high TN-6607.257) Ultrasonic inspection of \$182 cylinders of KRS high pressure pump cast iron parts [TN-6607.258] 02 p0218 N68-11817 Electronic circuit for detection of R-wave of electrocardiac signal for control of time cycle of heartassist pumps [NASA-TM-X-1489] Prototype, portable pump and cleanup system for motor driven, rotating shield plugs [ANL-7379] 11 p1741 N68-21166 Design criteria and performance characteristics of multistage centrifugal pumps with sodium lubricated, hydrodynamic shaft bearings and oil lubricated mechanical face seals [LA-3782] Hydrodynamical and mechanical design layout for two-speed hydraulic turbine inducer, compositer simula-tion of pumping system and test facility performance, and study of demonstration unit [NASA-CR-72378] 12 p1961 N68-22325 Glass circulation pump with variable flow rate for gas UUIP-5471 Design of mixed flow pumps and fans (SP-928) 20 p3485 N68-32460 Improved suction performance of pumps by using su-percavitating inducer [SP-930] 20 p3460 N68-32461 Inductive effects of traveling magnetic field on liquid metal flow through pump [FTD-HT-67-479] PUNCHED CARDS Aperture card techniques for collecting and recording air sampling data (Y-KB-78) Permanent computer si orage memory unit using metallic punched card [FTD-MT-24-284-67]

trol applications [FTD-HT-23-916-67]

Technique for converting key punch into punched card read for use in digital computer systems [AFRRI-TN67-4] 18 p3039 N68-29684 Authority Health and Safety Branch plant fault code and punched card system for recording and storing data on UK-REA plants and macket reaction (AHSB/S-R-127) 19 p3314 N68-32104 17 p2877 N68-28631 Punch card printer for wiring harness documentation [NASA-CR-97150] 23 p4025 N68-36319 PUNCHED TAPES Punched tape data input unit providing circuit decimal-to-binary conversion [FTD-HT-66-795] 03 p0326 N68-12491 02 p0219 N68-11879 FORTRAN input-output for tapes and direct Processing devices [ORNL-TM-2142] 15 p2434 N68-26677 Translator developed to convert complex strip chart records to digital format punched tapes for computer 17 p2872 N68-28842 analysis [NP-17501] 23 p4026 N68-36584 PUNCTURING U PIERCING PUPILLOMETRY Pupillometric experiments to measure work capacity and task complexity 03 p0348 N68-12654 06 p0783 N68-15924 PUPILS ion reduction from co 08 p1183 N68-18124 [TR-21] 19 p3315 N68-31071 PURGING Thermal design of aluminized Mylar insulation system for cryogenic storage tanks - helium purging 05 p0756 N68-14653 PURIFICATION NT AIR PURIFICATION Nuclear power systems applied to purification of sea water [TRG-1536/R/] 04 p0466 N68-13062 Removal of silicon dioxide from plutonium rocessing anion exchange resin by sodium hydroxide (RFP-1037) 05 p0617 N68-14029 Crystallization techniques for single crystal growth, materials purification, and structure control of ingots and castings 02 p0218 N68-11815 07 p1065 N68-16383 02 p0218 N68-11816 Fluoride volatility processes for chemical separation and purification of plutonium from waste materials RFP-1048] 09 p1298 N68-19265 and purificat [RFP-1048] 02 p0218 N68-11817 Radiation effects in solids - atomic displacement in solids, secondary electron emission from solids, purifi-cation methods, and statistical analysis of data [AFCRL-68-0019] 11 p1774 N68-21570 05 p0613 N68-13999 Purification and precision pelletization of sulfur for entron dosimetry [K-1720] 12 p1838 N68-22633 Purification of plutonium with ion exchange resins [EURAEC-1639] 13 p2013 N68-23544 Molecular sieve absorption for hellum purification in heavy water reactors
[CEA-R-3366] 14 p2291 N68-24836 11 p1705 N68-21207 High purity vanadium by metallothermic reduction vanadium trichloride of vanadium tri 15 p2405 N68-25854 Research facility activities on ion exchange, organic chemical purification, crystallization, and zone melting [NBS-TN-429] 15 p2412 N68-26115 12 p1961 N68-22325 Separation and purification of manganese leaching solution using high temperature and pressure methods [BM-RI-7166] 18 p3028 N68-30495 15 p2475 N68-26775 fon exchange, solvent extraction, and electrolysis in purification of high grade inclum [BARC-324] 18 p3030 N68-30591 Summary information on progress in separation and urification of stable gaseous isotopes and thermal diffusion researc [MLM-1430] 20 p3556 N68-32933 Literature survey of air regeneration in scaled environments [TDCK-50963] 20 p3410 N68-32451 Two methods for purification and crystallization of con metal powders 03 p0344 N68-12508 [Y-1614] 21 p3706 N68-34732 Thermodynamics of tory metals, and vacu nics of pilot scale purification of refrac-d vacuum melting of vanadium and 11 p1670 N68-21532 (CEA-R-3390) On-line punched eard reader for Minsk 1 computer [FTD-MT-24-287-67] 11 p1670 N68-21600 23 p4078 N68-36938 PURIFIERS U PURIFICATION Punched card machines, sorters, tabulator, and com-uter in data processing system used in automatic con-PURINES NT ADENINES 17 p2859 N68-29075

NT CAFFEINE

Paper chromatography and mass spectrometry for analyses of pyrimidine and purine bases [NASA-CR-95336] 16 p2600 N68-28051

Absorption of pyrimidines, purines, and nucleosides by copper, nickel, cobalt, and tron montmorillonite [NASA-CR-89255] 21 p3649 N68-33906

PURITY

mical and radiochemical purity control Routine che of chromium 51 preparations (INR-811/XIII/C) 03 p0315 N68-12566

Computer program for interpretation and determina-tion of elemental impurity levels from spark source mass spectrograph photoplates [IS-1093] 09 p1311 N68-18875

Luminescence analysis technique for detecting impurities in corundums and rubies

16 p2660 N68-27370 Solvent purity meters for monitoring nonvolatile residue content of cleaning solvents
17 p2888 N68-29327

Rolling metals and bimetals in vacuum and inert gas atmosphere to ensure purity of product [FTD-MT-24-197-67] 18 p3082 N68-30536

Molecular structure corrections for applications of theory of corresponding states to nonapherical pure haids and mixtures 21 p3679 N68-33769

Pursuit tracking and compensatory tracking models for mimicking human operators under conditions of high frequency inputs

06 p0782 N68-15919

Functional analysis of pursuit problems based on eory of momenta [NASA-CR-93739] 10 p1547 N68-19856

Pilot performance using compensatory and pursuit tracking displays with rate and acceleration control dynamics and disturbance input [NASA-CR-1042] 16 p2627 N68-28272

PWM [MODULATION]
U. PULSE DURATION MODULATION

PYCNOMETERS

Equipment and techniques for determining density volatile corrosive liquids at temperatures above 64 deg C [K-L-6163]

04 p0513 N68-13874

PYLON MOUNTING U AIRCRAFT PRODUCTION

PYLONS

Survey of literature on aerodynamic loads associated with external carriage of pylon mounted stores adjacent to wing-fuselage combinations [ARC-R&M-3503] 02 p0159 N68-11785

PYRAMIDAL BODIES

Flow distribution around pyramidal centerbodies of pet engine inlets 07 p0934 N68-16781

PVRANOMETERS

Calibrating method for Angstrom pyrgeometers and comparison of nocturnal radiation measurements with radiosonde data over Berlin, Germany 14 p2282 N68-24417

Integrating pyranometer for climatological observer ations and mesoscale networks PB-177740] 19 p3361 N68-31684 stations and mer

PYRAZINES

NT AZINES NT CYANURATES NT METHYLENE BLUE

Electron spin resonance spectra analyses on radical nions of pyridine, pyrimidine, and pyrazine in liquid [UCRL-17743] .05 p0623 N68-14421

PYREX (TRADEMARK)
U BOROSILICATE GLASS

PYRIDINE NUCLEOTIDES

Conformation of pyridine nu ucleotide coenzymes by rotary dispersion and [NASA-CR-93963] 11 p1635 N68-21139

PYRIDINES

2

2

Electron spin resonance spectra analyses on radical nions of pyridine, pyrimidine, and pyrazine in liquid

(UCRL-17743) 05 p0623 N68-14421 Raman and infrared spectra of liquid pyridazine, and deuterated pyridazines

09 pl297 N68-19133 Thermally stable polymers and mechanism of yridoin condensation

13 p2014 N68-23568

Urinary pyrimidines in rats after whole body X ray ir-[USNRDL-TR-68-15] 13 p2002 N68-24218

PYRIMIDINES

NT MITOCHONDRIA

NT THYMIDINE

NT THYMINE

Electron spin resonance spectra analyses on radical sions of pyridine, pyrimidine, and pyrazine in liquid [UCRL-17743] 05 p0623 N68-14421

Paper chromatography and mass spectrometry for analyses of pyrimidine and purine bases (NASA-CR-95356) 16 p2600 N68-28051

Absorption of pyrimidines, purines, and nucleosides by copper, nickel, cobalt, and iron montmorillonite [NASA-CR-89255] 21 p3649 N68-33906

PYROCERAM [TRADEMARK]

Thermal-stress analysis of pyroceram ra [APL-TG-980] 16 n277 16 p2775 N68-27040

Zonal sensitivity of large area pyroelectric radiation (RRE-TRANS-172) 12 p1876 N68-22693

Dielectric temperature change effects observed in ferroelectric and pyroelectric substances [NASA-CR-1080] 15 p2535 N68-25972

PYROGEN

Numerical analysis of gas pressure, temperature, and burning area during ignition transient in hypothetical pyrogen ignited solid propellant rocket enginer. NASA-CR-91778] 05 p0732 N68-14368

YROGRAPHALLOY
U COMPOSITE MATERIALS
U PYROLYTIC GRAPHITE
U REFRACTORY MATERIALS

PVBORVDBOLVSIS

Pyrobydrolysis procedure for determining chlorine and fluorine in zirconium oxide and zirconium (AECL-2799) 09 p1294 N68-18761

PYROLYSIS

Reaction kinetics of gaseous unimolecular isomeriza-tions of cyclobstane and cyclopropuse [AFOSR-67-2449] 03 p0312 N68-12225

Metabolic activities of osmophilic yeast in limited ater environment and pyrolysis-infrared analysis of oils and natural materials 03 p0306 N68-12322

Decomposition of polyoxymethylene and polyoxymethylene discretate in phenol solutions.

[TIL/T-5474] 04 p0467 N68-13421

strained chlorinated Pyrolysis of sterically erchlorotoluene and dodect

Organic chemistry studies dealing with pyrolysis sechanisms, isotopic data analysis, shielding effects, esonance apectra, extractions, and photopolymeriza-05 p0620 N68-14145

nts on high tempera-

ture polycarbonate pyrolytic pro [NASA-CR-91659] ducts 05 p0682 N68-15002 Electrechemical oxidation of zinc, thermal decomposition of silver oxide, and solubility determinations of silver oxides in potassium hydroxides [NASA-CR-92546] 06 p0770 N68-15856

Dicarbahexaborane and C-methyl derivatives pyroly-

w pressures (TR-3) 06 p0796 N68-16059

Injection systems for high resolution columns, and pyrolysis gas chromatography for structure elucidation and characterization of volatile organic substances organic substances 06 p0796 N68-16069

Estimation of thermal decomt tonium hexafluoride in process at [ANL-7347] mposition rates of plu-streams 07 p0936 N68-16461

Temperature effects on calcidin nitrogen stream, and under co [NASA-TT-F-11435] um carbonate pyrolysis 08 p1144 N68-18071

on of organic tin compounds 09 p1293 N68-18528 [AROD-6151-1-C] Pyrolysis experiments conducted to study reactions of halogenated methanes used in aircraft fire fighting [DLR-FB-68-04] 10 p1487 N68-20038

Heat transfer in thermally decomposing ozone mix-tures in turbulent flow past solid surface 10 p1614 N68-20137

Gas phase thermal decomtion of methyl azide 10 p1491 N68-20237

Radioisotopes to provide thermal energy for vacuum stillation and vacuum distillation-vapor pyrolysis in (AMRL-TR-67-158)

11 p1739 N68-21041 Residue analysis of thermally decomposed iso-anatopentammine cobalt perchlorate Morate 11 p1652 N68-21137 SC-CR-67-28411

Molecular structure changes in polyacrylon libers during pyrolysis. [RAE-LIB-TRANS-1272]

12 p1893 N68-22017 Mass spectrometric analysis of pyrolysis products from heating in vacuum of polymeric materials [UCRL-13332] 12 p1835 N68-22419

Mass spectra and pyrolysis of some atomatic-fluoroaliphatic compounds [RAE-TR-67251] 12 p.1837 Mass 2240

Preparation of europium oxide by reduction, pyroly-AERE-R-56701

13 p2016 N68-23736

Mass spectrometric study of thermal decomposition of perchloric acid and chlorine dioxide in gas phase. (RPE-TR-66/13) 14 p.2214 N68-24832 Thermal analysis on pyrolysis of charring ablator materials. [NASA-TM-X-59641] 14 p2373 N68-25277

Molecular structure effects on thermachemical pro-perties of phenolic resins and related polymers NASA-Th-X-99844 | 15 p2447 N68-25634 Mans spectroscopic analysis of volatile products from protysis of polyphenyls [CONF-661553-6] | 15 p2419 N68-26724

Coking reactions of pyrolysis gas in charring ablation material INASA-CR-1065] 15 p2579 N68-26817

Pyrolysis and thermal cracking on burning rate of 16 p2791 N68-27007 [TR-5]

Mass spectrometer pyrolysis of ammonium perchlorate at low pressure [NASA-TM-X-59227] 16 p2609 N68-27418

Products of pyrolysis of simple organic molecules by a chromatography

16 p2609 N68-27717

Rapid linear pyrolysis of thermoplastic solid fuels by intense heat flux levels to simulate combustion [NASA-CR-66616] 17 p2985 N68-28607 Pyrolysis, phase comp for Zr-Ca-P2 oxide syste 18 p3090 N68-30124

lysis chamber for analy-Gas chromatograph an sis of isothermally degrad [USNRDL-TR-68-41] mers 18 p3027 N68-30417

Relationship between nyl chloride and thermal [NASA-TT-F-11733] lar structure of polyvi-position product 18 p3032 N68-30855

Pressure effects on thermal decomposition of pota-um chlorate and mercuric oxide and synthesis of lith-in superoxide compounds 19 p3221 N68-30924

on of uranium hydride powder, with methane, and method of urunium monocarbide (JEN-177-DME/I-22) 19 p3221 N68-30

Intermediacy of azomethine nitrens generated from 3 benzyl 4 phemyi 1.2.4 oxadiazolone 5 by either pyrol-ying or photolyin [NASA-CR-59925] 19 p3223 N68-31268

Optical and electron mic spiral growth of pyrolytic cart pyrolysis of methane [ORNL-TR-1890] croscope observations is bon deposits produced by 19 p3298 N68-31598

Differential thermal analysis for studying ablative [TR-0158/3250-40/-7]

19 p3298 N68-31794 pethylene 19 p3231 N68-31921 Pyrolysis of tetrafis (PUBL-68-1)

Thermal doc 19 p3232 N68-31922

Transformation of repyrolytic decomposi (FTD-MT-66-123) 19 p3295 N68-32031

bic phase (RTS-4586) 20 p3421 N68-32665

vinylidenc fluoride and 21 p3708 N68-34374 [NASA-TN-D-4817]

[HDL-TR-1398, PT. 2]

Chemical reaction-plane approximation in ablation

Preparation and pyrolysis of aromatic hydrazones and hydrazonium salts for use in thermal reaction but-

23 p4185 N68-36072

23 p4005 N68-36187

Literature review on pyrolysis of ammonium REPT.-61 23 p4006 N68-36233 Reduction of silver by zinc, thermal decomposition of silver oxides, amalgam electrodes for use in alkaline batteries, and gas evolution at electrodes [NASA-CR-97223] 23 p4009 N68-36586 Reaction mechanisms for pyrolysis of polyacrylonitrile 24 p4214 N68-37680 Electrochemical oxidation of zinc and cadmium in tium hydroxide - thermal decomposition, and ition of silver oxide on sinc anodes [NASA-CR-97353] 24 p4216 N68-37812 Gravimetric investigation of thermal decomposition of ammonium perchlorate in presence of metal addi-[FTD-MT-24-359-67] 24 p4217 N68-37980 Synthesis and pyrotysis of aliphatic hydrazones for thermal batteries [HDL-TR-1400] 24 p4201 N68-38221 PYROLYTIC GRAPHITE Design problems in use of graphite as structural and oderator materials in nuclear reactor 01 p0095 N68-10807 Thermal conductivity and electrical resistivity measurements of polycrystalline graphite [TRG-1437/C/] 01 p0153 N68-10943 Structure dependence of diamagnetism in pyrolytic [NASA-CR-90546] 02 p0225 N68-11783 Basal plane emittance of pyrolytic graphite at high temperatures [TR-0158/3250-20/-10] 03 p0356 N68-12256 Hugoniot equation of state for pyrolytic graphites (LA-DC-8411) 03 p0423 N68-12470 High temperature tests of dimensional changes ac-companying plastic deformation of pyrolytic graphite [NASA-CR-91832] 05 p0681 N68-14797 Ceramic-coated and pyrolytic graphite-coated fuel 06 p0872 N68-15014 Stress dependence of tensile creep rate in carbons and pyrolytic graphite [NASA-CR-92706] 07 p1011 N68-16484 Creep deformation mechanism of pyrolytic graphite at high temperatures in response to stress [NASA-CR-92748] 07 p1011 N68-16526 Isosteric heat mea nts for krypton adsorption on annealed pyrolytic graphite 10 p1489 N68-20117 Crystal structure and thermodynamic properties of graphites and carbons, and radiation effects on structure and properties [GA-7905] 11 p1739 N68-20985 Dimensional measurements and mechanical propu-ties of irradiated pyrolytic graphite 11 p1739 N68-20986 [GA-7100] Gaseous exidation of vitreous carbon and various graphites at high temperatures 11 p1719 N68-21305 X ray diffraction and optical techniques for deter-ining fine microstructure of boronated pyrolytic gra-AMMRC-TR-68-02] 11 p1719 N68-21313 Neutron irradiation effects on mechanical properties of pyrolytic and single crystal graphite [TID-24233] 12 p1894 N68-22485 Room temperature strength of pyrolytic graphite as affected by microstructure and boron content [AMMRC-TR-68-04] 13 p2088 N68-23428 Computer program for effects of irradiation on operating lifetimes of pyrolytic carbon coated fuel IORNL-TM-21271 16 p2705 N68-28030 Preparation and preirradiation of pyrolytic carbon oated solgel uranium dioxide particles for X-basket-2 irradiation experime [ORNL-TM-2097] 17 p2915 N68-28940

Uranium contamination in pyrolytic carbon and all-icon carbide coating on uranium carbide fuel pellets [GAMD-8325] 22 p3912 N68-35818

Oxidation of bonded and coated particle fuel compacts by steam [ORNL-4269] 24 p4297 N68-37972 PVROLYTIC MATERIALS metals and alloys, polymers, rials, and techniques for treat-Research studies on meta-ass, and pyrolytic materials, ing and investigating them [NASA-CR-90231] 02 p0223 N68-11013 Oxidation kinetics of tetrafluoroethylene com-bustion, and carbonyl fluoride pyrolysis [AFOSR-68-0099] 09 p1294 N68-18628 Inhalation toxicity of brom methane pyrolysis products in rats 09 n1280 N68-18748 Pyrolytic silicon nitride dielectric for integrated cir-[NASA-CR-995] 09 p1355 N68-18849 Microradiographic determination of pyrocarbon outing thickness on plutonium oxide spheres LA-3814] 11 p1703 N68-20963 Dynamic response data of pyrolytic boron nitride to SC-RR-67-29471 12 p1896 N68-22949 Pyrolytic tungsten deposition and flow rates, and ydrogen/tungsten fluoride ratios for mandrel sizes and (ORNL-TM-2074) 12 p1892 N68-22956 High temperature research and density measure-ments for graphite from impregnated pitch [GA-8376] 15 p2489 N68-26534 Parameters affecting pyrolytic carbon coatings of muclear fuel particles in vortex bed [SGAE-M-16/1968] 16 p2704 N68-28009 Pyrolytic carbon coating of microspheres by en-ained fluidized bed furnace [ORNL-TM-2113] 16 p2705 N68-28049 Roentgesographic anisotropy determination on pyrolytic carbons using texture gosiometer and Geiger [SGAE-M-17/1968] 16 p2692 N68-28062 Diffusion profiles of barium in allicon carbides using neutron acti [GAMD-8326] m in pyrolytic carbon and treation 22 p3912 N68-35858 Pyrolytic carbon coated fuel particle oxidation using helium-low water vapor mixtures [ORNL-TM-2199] 24 p4213 N68-37633 **FYROMETERS**

NT RADIATION PYROMETERS
NT THERMOCOUPLE PYROMETERS

Modified line reversal pyrometer for measuring tem-perature profiles within gaseous reaction zones located above burning surfaces of composite solid propelland above burning surfac [NASA-CR-90226] oute solid propellants 01 p0127 N68-10995 Photographic pyrometry techniques and applications high temperature physics in high temperature physics [NASA-TT-F-11407] 05 p0658 N68-14019 Molten steel temperature measurement in electron beam furnance by color py {UCRL-TRANS-10215} 14 p2266 N68-25445 Pyrheliometric measurements - World Meteorologi-cal Organization Conference, Brussels, May 1966 [OMM-209-TP-109] 21 p3689 N68-34115 On atmospheric turbidity and its bearing upon pyreliometric measurements 21 p3689 N68-34116 Characteristic geometric function of Davos pyr-21 p3690 N68-34117

Simplification introduced in study of geometry of pyrheliometers and their consequences 21 p3762 N68-34118 Pyrheliometric me rcumsolar radiation its with special regard to

21 p3690 N68-34119 influence of atmospheric turbidity on calibration of 21 p3690 N68-34120

Results of pyrheliometer comparisons made in Pot-sdam with regard to recent investigations on influence of circumsolar sky radiation

21 p3690 N68-34121 atic strips heating compensation in Angstrom eliometers 21 p3690 N68-34122

Sources of dissymmetry and their consequences on pyrheliometric measurements 21 p3690 N68-34123 Characteristics of experin nental prototype of ab-21 p3690 N68-34126

Pyrheliometric reference scale for world radiometric 21 p3690 N68-34127 Calibration and optical sensitivity of photoelectric yrometer with chopped light beam 23 p4064 N68-36983

Pyrometric methods for actual temperature mea-24 p4353 N68-37611 surements during continuous therr [NASA-TT-F-11932] 2

PYROMETRY
U TEMPERATURE MEASUREMENT PYROPHORIC MATERIALS

Safe handling and accident prevention of radioactive ad pyrophoric materials and pyrophor [TID-24236] 21 p3677 N68-34730

PYROTECHNICS

Evaluation of sificone resin for pyrotechnical appli-06 p0858 N68-15948 Pyrotechnic shock tests for Mariner Venus 67 flight

[NASA-CR-94152] 11 p1790 N68-21760 Susceptibility of Apollo service module to mechanical shock transmitted from pyrotechnic separation line
14 p2365 N68-25527

Pyrotechnic shaped charge aerospace vehicle stage and shroud separation systems development [NASA-TM-X-1607] 17 p2976 N68-28869 Pyrotechnic-actuated calorimeter for flight research at lunar return velocity /Project Fire/ [NASA-TM-X-61210] 21 p3781 N68-34801 Acceptability of missile stage separation devices [ONERA-TP-615] 23 p4161 N68-37155

PYROXENES NT ENSTATITE

Mossbauer spectra of orthopyroxenes at low tem-NASA-CR-953571 16 p2612 N68-27982 PYROXYLIN

U CELLULOSE NITRATE

YRROLES NT INDOLES

Thermal degradation and stability, and ther-mogravimetric analysis of Pyrrone polymeric films [NASA-TM-X-60323] 15 p2490 N68-26874 Mechanical properties of polyimidazopyrrolones, and radiation resistance of polymeric films [NASA-TM-X-59873] 16 p2691 N68-27814

Synthetic production and spectral characteristics of new porphines and salt components 17 p2843 N68-29278

Theory and experiments in ne eactions on pyrroles and pyrron ents in new types of substitution 17 p2847 N68-29523

sis of pyrrolidinone-base muscarinic agent unsaturated amides by isomerization and ring 19 p3223 N68-31153

Beta substitution methods for syntheses of dipyr-methenes

23 p4007 N68-36315

Carboxylation and cond-linones and isoindolinones tion reactions of pyr-23 p4016 N68-37360

1

to [F

sin [S

P3V AIRCRAFT U P- 3 AIRCRAFT

0

Q FACTORS

Organic scintillation detectors for measurement of dose equivalent and quality factor in mixed neutron samma radiation INR-785/XIX/D] 01 p0102 N68-10166 Frequency sweep techniques for Q measurement of superconducting tellurium cavities [BNL-11702] 02 p0240 N68-11616 Superconductors for use in high-Q microwave cavi-05 p0701 N68-14450

Niobium stannide to obtain high Q factors for refrigerated radio frequency preselector that reduces interference in radio communications 05 p0636 N68-14459

Dose rate and quality factor measurements on tissue equivalent phantom after neutron beam irradiation [LA-TR-68-8] 12 p1934 N68-22670

Interference reduction techniques employing phase control, feed forward, Q multipliers, and crystal filters [RADC-TR-68-8] 13 p2029 N68-24029 High Q inductance simulator for microminiature cir-

21 p3670 N68-34693 pole Q in integrable int INASA-TM-X-612351 Iterative network os s and quality indices for 23 p4036 N68-36440 using ruby laser output O factor mos FTD-HT-23-735-67) 24 p4265 N68-38237 Q SWITCHED LASERS Particle acceleration by evaporation pressure using Q-switched laser beam [NASA-CR-927] 01 p0072 N68-10467 ulated Ram in computed from Qsch laser [REPT.-8581] 02 p0220 N68-11765 Two photon photoelectric effect spectrum of cesis iodide film using Q-switched ruby laser and zeno flashlamp as light sources (REPT.-838) 07 p1004 N68-1645 07 p1004 N68-16459 Stimulated compton scattering of electrons by Q switched ruby laser 11 p1708 N68-20630 Output energy of reso both mirrors [FTD-HT-66-554] er during switch off of 11 p1708 N68-20722 pumped am dihydrogen phos (REPT.-874) 11 p1768 N68-20726 Mode locking of organic dye on of mode-locked laser ic dye lasers, optical rectifica-laser pulses, nanosecond light amplification, and carfluorescent decay tin bon dioxide laser puls [F-920479-6] 11 p1709 N68-20798 11 p1709 N68-20845 Quantum mechanical theorems scattering and la ry of stimulated resonance user synchronization by FTD-MT-66-87] 12 p1915 N68-22129 Photodiode system for synchronized switching of 12 p1884 N68-22131 Q-switched ruby laser for development of laser triggered spark gap CERN-67-33 13 p2079 N68-23570 Acoustic self trapping of high power Q switched pulsed laser beams [REPT-9204] 13 p2079 N68-23912 Preliminary data on effects of laser radiation damage to retina and cornea in test animals [AD-667555] 13 p2002 N68-24127 Plasma production by high power Q switched ruby [WERL-3472-9] 16 p2740 N68-28302 O switched lasers and reflected polarized harmonic diation and generations 18 p3085 N68-30799 TR-563 Retinal injuries in monkeys from neodymium, car-bon dioxide, and Q-switched lasers [AD-670852] 19 p3210 N68-31466 Solid state laser rad [WRE-TN-PAD-146] 20 p3492 N68-32447 ower Q switched lasers, y measurements in alu-Plasma production by high po d electron energy and densit minum plasmas (WERL-3472-10) 21 p3750 N68-34372 Q-switched laser and to study effect of laser ra [FTD-MT-24-214-67] ed output power used m Plexiglas 22 p3894 N68-35282 Initial Q switched laser ting and passivation film [TRW-06415-6003-R000] 22 p3847 N68-35299 Q switched ruby laser reflectance enhancem single and polycrystalli (SAMSO-TR-68-283) 22 p3952 N68-35955 Electron emiss witched lasers ion from solids under influence of Q 23 p4151 N68-36589 wer Q switched laser 23 p4073 N68-36886 ction by high po [WERL-3472-8] Far infrared laser construct in measurements, Q switchi on and operation, direct [NASA-CR-97315] 24 p4264 N68-37839 Multi-prism Q switch lase prisms on mutor and serio mounted on outer fixed annual [FTD-HT-67-404] consisting of rotating of reflecting prisms

24 p4265 N68-38301

O VALUES Theory and experiment gions of strong fields virometer [NASA-CR-91801] nts of ion introduction into re-Tabulated data of Q values for three particle reac-ons on nuclei hydrogen-2 isotope to calcium-48 [BMWF-FBK-67-91] 16 p2730 N68-28118 hadrupole con effects in hea DAS-TN-1281 tematics and moss ex-nuclear reactions 17 p2930 N68-28878 Nuclear Coulomb energy a (UTIAS-TI sergy of is clear structure of dysprosium isotopes in transi-region and their energy levels and ground state Q teractions with metal ([NASA-TT-F-11420] 05 p0730 N68-14876 noments of excited nd 116 and tellurium 19 p3327 N68-31170 pothesis using Q values ty, period, and spectrum 23 p4166 N68-36239 Red supergiant pulsar hyp derived from stellar luminosity [NASA-TM-X-61284] 09 p1395 N68-19193 Mosabauer effect for measu solutions of iron ions in high spir [KFKI-9/1967] ng solidified aqueo QSO [RADIO SOURCES] 10 p1480 N68-19584 ctive states in QUADRATIC EQUATIONS 10 p1562 N68-19586 (JINR-E4-3134) on prosent iffusing, reacting, and par-it convects down glow Nonlinear aberrati netic field in quadrup [IFVE-OP-67-22-K] by distortions of mag-01 p0050 N68-10118 11 p1747 N68-21450 onal potential up to tellite observations 11 p1693 N68-21616 nators for pattern Determining earth quadrupole approxim [NASA-CR-94139] (IRA-TR-12) 01 p0040 N68-10211 Angular accep 12 p1943 N68-22987 Nuclear potent and octupole defi [JINR-E4-3629] nce on quadrupole NASA-TM-X-630721 04 p0580 N68-13770 13 p2112 N68-23048 Unique solution (MRC-TSR-802) 06 p0861 N68-15321 Quadrupole mon eified lutetium 172 fINR-P-843/IA/PL1 Complex numbe quadratic equations [REPT.-67TIPO2] and finding roots of 13 p2112 N68-23077 13 p2097 N68-24259 tical com heses concerning exsitivity terms in lines of minimizing trajecto [P-3816] 13 p2152 N68-23955 molecular properti h scattering, nucle magnetic alloys, ar (RE-320J) 14 p2232 N68-24998 Generating conjugate d constrained minimization (RAC-TP-302) ons for problem of undratic function 15 p2493 N68-26478 14 p2213 N68-24699 Positron beam focusing solenoid field and quadrup [DESY-68/5] correcting codes using 14 p2236 N68-24985 R-375] 15 p2429 N68-26745 r electric quadrapole in-rties of crystalline iron 14 p2332 N68-25151 netical properties of p ffect of s ynomial values 16 p2694 N68-27247 onstructing generalized r mass motion with resis ar law and quadratic law Nuclear quadrupol termining chlorine anafer complexes 19 p3317 N68-31719 18 p3127 N68-29704 tion for equations in drupole and hypershaper effect of nucle teractions in iron comp problems of quan JINR-P4-37411 19 p3317 N68-31914 19 p3321 N68-30910 Heuristic soluti lefinite quadratic pro-23 p4086 N68-36052 [NASA-CR-96818] 21 p3693 N68-34487 QUADRATURE APPROXIMATION U QUADRATURES sign using quadrupoles nee matching 22 p3847 N68-35293 TRANS-24761 QUADRATURES sture methods of formulating Runge-Kutta Reduced prob tric quadrupole transiequations [NASA-TR-R-275] (ITF-68-7) 01 p0083 N68-10121 22 p3931 N68-35598 Algorithms for generating Ga [CS-81] usian quadrature rules 03 p0358 N68-12027 Phase accepts (CERN-68-28) 23 p4111 N68-36012 Multi-step Runge-Kutta me hods using method of Energy spectra and cross ad silicon particle interaction quadratures [NASA-TN-D-4400] (UR-NSRL-5) 11 p1729 N68-21100 23 p4127 N68-37021 Magnetic field of levitated superconducting qua Reduction of qua ns for crystallographic [LA-TR-68-5] 14 p2329 N68-24594 24 p4304 N68-38489 res for solving Boltz-QUALIFICATIONS Discrete ordin Minutes of confirmation hearing for NASA deputy 17 p2937 N68-29216 07 p1104 N68-17193 Kinetic moment equation res applied to aerody evaluation of quadra-cs of rarefied and or eve tures applied to monatomic gases [FTD-MT-66-165] epts, and qualification appropellant valve 12 p1973 N68-22972 test procedures for C-1 er [NASA-CR-61735] 18 p3062 N68-30079 Automated final cleaning for qualifying hardware system cleanliness criteria QUADRUPOLE LENSES
U MAGNETIC LENSES sing, and drying station prospace vehicle fluid QUADRUPOLES 17 p2995 N66-29334 clear deformations in pair-QUALITATIVE ANALYSIS (18-29) 02 p0244 N68-11352 ctor depth distributi Electric qua s of first two plus states 05 p0712 N68-14427 of even nucle 05 p0706 N68-14121 n and mobility of Computer program to calculate betatron parameters account order in case of any superperiod symmetric stribution of point quadrupoles in alternating sedient overhouten. AERE-TRANS-1083 06 p0795 N68-16019

05 p0708 N68-14209

n tables and graphs for 07 p0957 N68-16572

QUALITY Carbonyl and evaporation processes for phase sullibria determination of iron-nickel alloys at low mobility temperatures [MLM-1381/TR/] 12 p1838 N68-22624 Electron microscopic a mulybdite floating susper lysis of limonite and fer-13 p2017 N68-23820 Qualitative and qualitative an salysis of point source 17 p2883 N68-28761 Hydriodic acid reduction methods for determining quantity of ethylene oxide in oxyethylated products during synthesis under industrial and laboratory condi-20 p3421 N68-32670 [RTS-4267] Short lived isotope inverse ion methods developed [ANL-TRANS-632] 24 p4214 N68-37672 s in pelletized and pow-Trace impurity deter 24 p4214 N68-37742 [NASA-TT-F-11869] QUALITY Liquid metal [REPT.-3540] tal vapor quality me 19 p3281 N68-31940 QUALITY CONTROL Statistical simulation procedure for obtaining relia-bility characteristics of complex logical control systems 01 p0042 N68-10309 Design, testing, and quality control of large-area solar cell array, ground support equipment, and tools [NASA-CR-90106] 01 p0005 N68-10579 Program control methods for reliability of Apollo acceraft systems spacecraft systems [NASA-TM-X-60662] 02 p0217 N68-11527 Kolmogoroff-Smirnoff statistic to validate suppliers (SC-TM-66-613) 03 p0361 N68-12673 Limiting distribution of likelihood ratio statistics ider local alternatives to null hypothesis (5U-M126) 04 p0527 N68-12894 [FSU-M126] Automatic centering inspection machine for accu-nte machining of parts (Y-1594) 05 p0666 N68-14549 Industrial preparedness in electronic defense indu ure for production tests 05 p0670 N68-14963 Design data and error effects for tools, tool holders, and machine systems in ultransmir or of the hine systems in ultraonic grinding 06 p0850 N68-15472 Reliability engineering in manufacturing electronic (FTD-MT-65-514) 06 p0811 N68-15650 Factor analysis, and reliability bility of set bomber main-[AMRL-TR-67-196] 09 p1269 N68-18388 Operation, and performs tenance task simulatur [AMRL-TR-67-140, V. 1] nce of electronic main-

Op p1314 N68-18395
Summary of terminology and criteria used in image quality assessment and specification
[RADC-TR-67-578] Op p1380 N68-18416
Reliability predictions and effects on future aircraft maintainability and performance
[AD-664372] Op p1274 N68-18691
Reliability programs for acrospace systems and applicability of Bayes theorem in assuring component reliability
[SEF-TR-67-5] Op p1347 N68-18692
External visual inspection criteria for semiconductor derices
[NASA-TM-X-60946] 10 p1505 N68-19589
Double aampling tables for statistical quality control in nondestructive testing

in nondestructive testing [IRRL-R-1342] 10 p1534 N68-20101 Calibration maintenance and voltage control for saturated standard cells [NBS-TN-430] 12 p1820 N68-22371 Quality control program plan for sterilization assembly development laboratory [NASA-CR-94384] 12 p1828 N68-22518

Contamination criteria for examination of irradiated fast maclear eracture fuel elements [BNWL-366] 12 p1906 N68-22536 Generalized model for optimal selection of quality control test parameters 13 p2042 N68-23250

Acceptance tests of nickel cadmium secondary cells for spacecraft power supply [NASA-CR-94617]

13 p1996 N68-24162

Flight evaluation procedures and quality control in aviation achool training [TR-68-3]

13 p2007 N68-24211

Component tests and system assembly for hydrazine fuel gas distribution system of torque generator for spaceraft attitude control [NASA-CR-94762] 14 p2193 N68-25097 Acceptance test plan for Apollo telescope seismic pud and pointing system [NASA-CR-61819] 14 p2237 N68-25219

Principles and concepts of performance prediction, quality control, and reliability engineering [2V-9-0] 14 p.2265 N68-25334 Technical, organizational, and price factors affecting

Technical, organizational, and price factors affecting quality and reliability of products
[NASA-TM-X-61105] 14 p2265 N68-25364
Generation of housing quality data from aerial photographs
[NASA-CR-94929] 15 p2466 N68-25878
Environmental and quality control tests on third stage components of ELDO launch vehicle
[EV-60-0] 15 p2564 N68-26026

Spatial filtering apparatus for assessing quality characteristics of reconnaissance photographs [CAL-VE-2491-0-1] 15 p2466 N68-26103 Methode contact cracking failure and subsequent production quality control [NASA-CR-61808] 15 p2475 N68-26772

In p2475 N68-26772

ASP computer program for calculating and preparing statistics on quality control data

[DP-1127]

Acoustic and ultrasonic technology in Brazil, including inspection techniques, quality control, plastic welding, and industrial noise

18 p3056 N68-30335
Ultrasonic testing and evaluation of cast aluminum for tube extrusion [REPT-11] 18 p3081 N68-30461
Test equipment for quality control of diffraction

gramms

19 p3316 N68-31534

Mathematical models of impection along production
line and analysis of various quality control procedures
and coats

19 p3286 N68-31882

Reliability assurance of microministurized electronic
devices

20 p3447 N68-32326

Quality control under Markovian deterioration [TR-110] 20 p3489 N68-33038 Low cost complex wave machine developed for quality control vibration tests of electric and electronic missis components 20 p3489 N68-33068 Reliability control problems of high temperature microelectronics

Using modulation transfer function for quality control of photographic lenses 20 p3481 N68-33395

ing data on animal Computer programs for preeding and production color breeding and production [ORNL-TM-2210] 22 p3814 N68-35844 Multichannel iterative principles and quality indices for automatic control [JPRS-46523] 23 p4036 N68-36439 Qualitative and q methods for electronic [NASA-CR-97207] stitative accelerated testing 23 p4031 N68-36621 Probable effectiveness of NASA microelectronic reliability program and data be [NASA-CR-97217] services 23 p4031 N68-36668 Quality control method of in process manufacture of se d of technological operations f semiconductors onductors 23 p4159 N68-37320

Thermoelastic properties, quality control, variance analysis, and description of test specimens of SNAP n-and p-type thermoelastic less [MMM-8406-1757, V. 1, PT. 1]

24 p4293 N68-37527

Design, manufacture, and type qualification testing of programmable premodulation filters for NRZ pulse signal conditioner [NASA-CR-92346] 24 p4225 N68-37833

QUALITY FACTORS
U Q FACTORS
QUANTITATIVE ANALYSIS

Putonium content and isotopic assay analyses for plutonium cuntent and isotopic assay analyses for plutonium nitrate solutions

NBL-239]

01 p0024 N68-10755
Polarographic determination of copper compounds in paper

[AERDL-1910]

Analytical applications of esters of phosphorothioic and phosphorodithioic acids

[IS-T-144]

03 p0311 N68-12166

Principles of quantitative autoradiography
[EUR-3495.E] 03 p0345 N68-12739
Semi-micro analytical method for quantitative deter-

Semi-micro analytical method for quantitative determination of chlorine in highly chlorinated organic compounds

O4 p0469 N68-13525

Amalgamation method for quantitative oxygen anal-

yasi in sodium samples
[NAA-SR-12250]

05 p0618 N68-14066

Effects of strain induced austenite to martanite transformation on mechanical properties of metastable austenitic steels
[UCRL-17849]

05 p0675 N68-14481

Quantitative analysis of all detectable products appearing when radiation sensitive organic crystals of choline chloride were exposed to gamma radiation 05 p0626 NoS-14609

Quantitative analysis of body fluids by use of superconducting radio frequency resonant circuits as enaing elements in magnetic resonance devices [SAM-TR-67-70] 05 p0615 No8-14788 Hydration method for determination of sulfur in

petroleum
[NSTIC/13106/67] 06 p0790 N68-15630
Quantitative spectrophotometry method for determining minute amounts of iodide and bromide in presence of iodide, bromide, and chloride

mining minute amounts of route and oronino in presence of iodiste, bromide, and chioride [NASA-TT-F-11379] 06 p0796 N68-16094 Quantitative analysis of torsional vibration viscous damping in fluid coupling [BZ] 07 p1002 N68-16198

Titration method for uranium concentration analysis in solutions of irradiated fuel reprocessing plants (CNEA-192)
Procedure for determining plutonium in plutonium

Procedure for determining plutonium in plutonium metal using absorption spectrophotometry [96-290/W] 09 p1294 N68-18728 Experimental method for quantitatively measuring

local solar irradiation with spacecraft models (SSD-70530R) Computer calculations on quantitative behavior of night Fregion 09 p1334.N68-18977

Distillation of aqueous fluorine, and titrimetric fluorine determination [FOA-4-B-4002-24, V. 1]

Ou p p 1300 N68-19476
Quantitative method for spectrum analysis of iron, aluminum, and silicon in fluorite samples
[JEN-185-DQ/t-62] 11 p1643 N68-20594
Quantitative method of cut-bar method for measuring thermal conductivity of solids

QL

3

15

di

17

OU/

ing thermal conductivity of solids
[TR-2]
11 p1770 N68-20817
Quantitative analysis of gravimetric studies of KopetDag foredeep
[ACIC-TC-1313]
11 p1691 N68-21351

Quantitative analysis of organic compounds by X ray diffraction [AFML-TR-67-403] Il p1657 N68-21645 Gas chromatography for quantitative analysis of carbon district and carbonyl fluorides [PUBL-67-2] Il p1657 N68-21666

[PUBL.-67-2] 11 p1657 N68-21666 Quantitative measurements of responses attributed to stimulus in stimulus-subject systems [NASA-CR-62057] 11 p1733 N68-21829

Spectrophotometric method for determining microgram amounts of mercury in organic or inorganic solutions and solids [IN-1159] 12 p1836 N68-22473

Determination of fluoride in thorium aulations [NLCO-1004] 12 p1838 N68-22719 Kinetics of physical processes in carbon dioxide lasers - method for calculating populations in vibrational levels of polyatomic molecules [NASA-TT-F-11667] 13 p2079 N68-23525

[NASA-TT-F-[1667] 13 p2079 N68-23525 Quantitative analysis on radio wave scattering in disturbed autoral ionoophere [NASA-CR-94552] 13 p2060 N68-23571

[NASA-CR-94552] 13 p.2060 N68-23521 Formulas for quantitive analysis of uranium oxide in subcritical assembly of water moderated reactor [IEA-130] 14 p.2288 N68-24428 Pulse sampling electron capture detector for quantitative spectroscopy at high frequency excitation 14 p.2254 N68-24595

Quantitative analysis of nickel stainless steel alloy by spark-source mass spectroscopy [ONER-NT-125] 14 p2218 N68-25303

Quantitative separation of argon by thermal diffusion

[MLM-1483/TR/] 14 p2219 N68-25607

Gas chromatographic separation of tripeptide derivatives

15 p2407 N68-26036

ı

8

14

8

92

28

00

of

77

ric

04

17

51

45

29

73

119

25

171

192

95

by

103

ion

507

ide

Reaction kinetics of methylene-t with ethylene - use of radioactive tracers in quantitative analyses of reaction kinetics

15 p2411 N68-26098

Quantitative analysis of dimethyl benzene Raman spectra

[FTD-HT-66-800]

15 p2415 N68-26406

Determination and identification of fundamental amino acids by thermometric titration proton nuclear magnetic resonance spectroscopy 15 p2419 N68-26742

Chemical method for determining uranium in uranium oxides of high purity [CNEA-209] 17 p2845 N68-29395

Patterns, processes, dissemination, and quantitative analysis of innovative technology in liquid propellant rocket engines
[ORA-66-0006] 18 p3157 N68-29565
Fluorimetric analysis of fused uranium in sodium

fluoride [NIM-163] 19 p3222 N68-30991 Absorption spectrophotometric determination of berlium concentration in silicate and ore samples [NIM-173] 19 p3222 N68-30994

NIM-173] 19 p3222 N68-30994 Polar addition of hydrogen halides to acetylenes 19 p3222 N68-30998

Polarographic determination of hexavalent uranium as uranyl fluoride in uranous fluoride [NIM-[29] 19 p3223 N68-31110

Ouantitative analysis of weight savings from using fibrous composite materials for large launch vehicles [NASA-CR-73235] 19 p3382 N68-32071

[NASA-CR-7323] 19 p.3382 N88-32071 Quantitative chemical analysis of amino acids by gasliquid chromatosraphy of N-trifluoroacetyl m-butyl esters

20 p3432 N68-33420
Polarographic cell for quantitative determination of coxygen in various solutions [RTS-4688] 22 p3819 N68-34871

[RTS-4688] 22 p3819 N68-34871 Cryotrapping technique for modifying commercial gas chromatographs to permit gas anulysis and quantitative analysis of gas mixtures [FSN-AD9-01-68-1] 23 p4060 N68-36027

[FSN-AD9-01-68-1] 23 p4060 N68-36027 Pu 236 quantity determination of parts per million in Pu 238 [MLM-1486] 24 p4292 N68-37468

Trace impurity determinations in pelletized and powdered uranium dioxide nuclear fuels [NASA-TT-F-11869] 24 p4214 N68-37742

QUANTIZATION U MEASUREMENT

QUANTIZER U COUNTERS

QUANTUM AMPLIFIERS

Pulsed lasers, quantum amplifiers, and masers [FTD-MT-67-31] 20 p3493 N68-33279

Optical properties and applications of regenerative optical quantum amplifiers 20 p3493 N68-33280

Quantum phase noise and plasma-induced phase noise in He-Ne lasers [NASA-CR-97345] 24 p4264 N68-37775

QUANTUM COUNTERS
High precision Faraday cup and quantameter for Stanford Linear Accelerator Center
[SLAC-PUB-395] 19 p3281 N68-31917
Calibration and performance of Cambridge electron accelerator quantameters
[CEAL-1040] 20 p3483 N68-33432

QUANTUM ELECTRODYNAMICS

Coherent bremsstrahlung and pair production on diamond single crystals

[DESY-67/23] 01 p0106 N68-10423

Brown-Twiss stellar interferometer measurement of autocorrelation function for incoherent sources [NASA-TM-X-55657] 02 p0214 N68-11825 Physical, quantum, and plasma electronics studies on

Physical, quantum, and plasma electronics studies on photodiclectric effect, holography, resonance and plasma recombination

06 p0819 N68-15542

High energy physics research including current algebra, pion-pion interaction in kaon decay, quantum electrodynamics, symmetry, quark models, and crossing matrices

19YO-3829-181

07 p1042 N68-16422

Hadronic contributions to anomalous magnetic moment of muon and Lamb shift in hydrogen atom examined by means of identity

97 p1042 N68-16448
Microwave research electromagnetic wave propagation, electronic equipment, field theory, lister optics, plasma physics, semiconducting film, information theory, and computer control [PIBMR1-R-452-32-67]

07 p0978 N68-16927

Spontaneous emission model for atomic system subjected to strong, near resonant field 07 p1052 N68-16944

Stokes operator, and photon correlation functions for statistical analysis of electromagnetic field 07 p1052 N68-16945
Anti-correlation effects in multiple mode elec-

tromagnetic field optics
07 p1037 N68-16946
Quantization integral for computing eigenvalues of

Quantization integral for computing eigenvalues of Schroedinger equation by Wentzel Kramer Brillouin method

O7 p1037 N68-16947

Generalized Hamiltonian for quantum mechanical model of multiple mode laser amplifier 07 p1006 N68-16948

Perturbation method for determining normal modes and eigenvalues of optical cavities with circular resonators

07 p1037 N68-16949 Multiple stream method for instability analyses on plasmas. 07 p1063 N68-16950

Photoproduced muon pairs for testing quantum electrodynamics [AFCRL-67-0674] 11 p1750 N68-20713

Non-quantum mechanical derivation of macroscopic polarization-magnetization tensor from system of charged particles [NOLTR-67-190] 11 p1752 N68-20938

Quantum electrodynamics and processes involving hadrons and electromagnetic interactions [SLAC-PUB-370] 11 p1753 N68-20947

Electromagnetism in moving, conducting media solution to problems involving static and radiation fields of static charges, and radiation fields of barmonic current sources

[NASA-CR-1025]

11 p1747 N68-21444

[NASA-CR-1025] 11 p1747 No8-21444 Measurement of pion electroproduction cross section from protons [LAL-1185] 12 p1936 No8-22738

Dynamics of nonharmonic substitutional impurity in dynamic host lattice [NYO-3699-23] 12 p1957 N68-22830

Check of quantum electrodynamics in electron electron scattering [NP-17322] 14 p2307 N68-24812 Dirac-Schwinger covariance condition, and applica-

tions to quantum electrodynamics
14 p2315 N68-25230
Data review of high energy work in quantum elec-

trodynamics
[LNF-68/17] 15 p2515 N68-25960
Asymmetric photograduction of muon pairs of

Asymmetric photogroduction of muon pairs of hydrogen as test of quantum electrodynamics [HEPL-534] 15 p2520 N68-26477

Spontaneous radiation of light and quantum electronics

16 p2622 N68-27300

Modified Hamiltonian formalism for obtaining commutators of currents and use of renormalized quantum electrodynamics [ITF-67-43] 16 p2725 N68-27963

Structural inconsistency of quantum electrodynamics of higher spin fields

16 p2730 N68-28133

Interference of nonidentical particles
[JINR-P2-3763] 17 p2941 N68-29423

Feynmen techniques of quantum electrodynamics used to develop theory of interaction of Mossbauer gamma rays with crystals containing resonant muclei p 93346 N68-30898

Field theory and nonlocality in quantum electrodynamics 19 p3323 N68-31038

Dynamical equations of Bugoliubov axiomatics solved for spinor electrodynamics 19 p3324 N68-31092 Virtual proton Compton effect and electron /muon/proton breassstrahlung as text of quantum elec-

trodynamics (LNF-68/78) 22 p3927 N68-35158 Synchrotron measurements of wide angle electron proton bremustrahlung and agreement with quantum

LNF-64/46] 22 p3927 N68-35159 Semi-empirical quantum mechanical calculations of necessarie mechanical calculations of celecular electronic structure of organic molecules 22 p3823 N68-35169

Lagrangian formalism for describing infinite multiplet quantity fields
[TUEA-68-16] 22 p3932 N68-33671

Research project abstracts on nuclear structure, Hartree-Fock approximation, quark model, quantum electrodynamics, and three body problem 23 p4118 N68-36581

QUANTUM GENERATURS
U STIMULATED EMISSION DEVICES

QUANTUM MECHANICS NT PAULI EXCLUSION PRINCIPLE

Generalization of sum rules for quantum mechanics by direct application of closure relations for eigenstates of hermitian operators

01 p0104 N68-10296
Matrix elements tabulated for two-center problem of quantum mechanics
(JINR-P4-3403) 01 p0111 N68-10635

Quantum mechanical study of transition probabilities, Einstein A coefficients, and oscillator strengths of band systems of distorate molecules [NASA-CR-975] 02 p0242 N68-11037

Numerical solutions of Schroedinger equation with acreemed Coulomb potential for bound electronic states in hydrogenic ion [NRL-6556] 02 p0243 N68-11223

Computer methods for calculating eigenvalue and eigenvectors of real symmetric matrices arising in problems of molecular quantum mechanics [NASA-CR-983] 02 p0230 N68-11903

Numerical analysis of two-center problem in quantum mechanics [JINR-P2-3009] 03 p0397 N68-12720

Quantum mechanical calculations for molecular orbitals of light metal diatomic hydrides, oxides, and halides

[AROD-3835-38-P] O4 p0546 N68-12893 Quantum mechanical calculation of diatomic molecule force constants and elastic properties of crystals using extended Hueckel theory [D1-82-0649] 04 p0557 N68-13366

Quantum phase geometry for internal degrees of freedom of isolated systems and modification of high energy particle interactions (INR-524/V/PH) 05 p0710 N68-14314

Numerical calculations on two center problem in quantum mechanics [SC-T-67-0952] 05 p0711 N68-14417

Review of studies in infinite-component fields and self-coupled representation of Lorentz group [CTS-HE-67-6] 05 p0712 N68-14435

Coherent state applications to quantum statistical mechanics [NYO-3699-16] 05 p0713 N68-14489

Quantum mechanics and statistical mechanics applied to solution of biological and chemical problems chemical bonding, resonance, spin, and transport phenomena [NASA-CR-91663] 05 p0626 N68-14582

Tables of terms for two-center problem of quantum mechanics [SC-T-67-0953] 05 p0717 N68-14719

Quantization effects in bulk galvanomagnetic properties of N-type indium antimoride [TR-9] 06 p0893 N68-15300

Lasers, quantum mechanics, ion exchange properties of sirconyl phosphate, electrochemical processes, thin layer chromatography, chemical analyses, reaction kinetics, and radiation (FTD-MT-64-359) 66 p0793 No8-15951

Time charge parity, time-reversal invariance, and kaon-meson decay symmetry
[TH/224] 06 p0888 N68-16102

Three body problems in quantum mechanics, and calculation of wave functions of bound and scattering systems (ORNL-TM-2008) 07 p1043 Nn8-16498

Calculation of photoionization cross sections of nitrogen and oxygen atoms and ions in excited states using quantum defect method

O7 p1051 N68-18844

Quantum mechanical theory of adsorption of inert gas atoms on crystal surface [NASA-TT-F-11493] 08 p1210 N68-17739

Quantum theory of many particle systems
[AFOSR-68-0100] 09 p1390 N68-18723
Quantum mechanical model for atom energy, and

Quantum mechanical model for atom energy, and sequential filling of quantum levels by electrons (NASA-TT-F-11490) 09 p1390 N66-18235 Simple assistempirical correlation for angular anisotronical correlation for angular anisotronical correlation.

Simple semiempirical correlation for angular anisotropy of nuclear fission by neutrons [ANL-TRANS-548] 09 p1393 N68-19054 Quark model for relations between nonleptonic decay amplitudes of hyperons, and mesons [JINR-P2-3603] 09 e1394 N68-19079

SUL

fec (IS

of a

emi maci [NP

(TR

loca [SL

Qi field [NA

Qu yapid [JIN

Qu [NP-

(JIN)

Qu

(TH/

Neo

INAS

Non tation

spaces

-

QUANTUM NUMBERS Phase space distri reay into four pions decay into f (IS-T-210) 09 p1395 N68-19178 Unitary relativistic model of quantum field theory without ultraviolet divergences [JINR-E2-3266] 10 p1561 N68-19513 Superposition principle in qua ntum mechanics 10 p1561 N68-19547 Relativistic quantum analysis on luminous electron positron pair production, and photon emission in mag-netic field 10 p1566 N68-19751 (NASA-TT-F-11618) Quantum mechanical theory of electrode processes 10 p1483 N68-19797 Systematic search for non-relativistic systems with remarked symmetries C.47.81 (IC-67-8) 10 p1560 N68-20421 Construction of relativistic qu antum theory model 12 p1914 N68-22023 Quantum mechanical theory of stimulated resonance Raman scattering and laser synchronization by photodiode FTD-MT-66-87) 12 p1915 N68-22129 Quantum mechanical analysis of stimulated sonance Raman scattering during transition from presonant to resonance scattering ring 12 p1922 N68-22130 Limitable dynamical groups in quantum mechanics-general theory and spinless model [IC-67-28] 12 p1924 N68-22220 12 p1924 N68-22220 Relativistic quantum field theory with local interac-tions in indefinite metric space [SU-1206-131] 12 p1916 N68-22392 12 p1916 N68-22392 Method of solving wave equation with additive 12 p1927 N68-22410 Nuclear structure and nuclear reactions in amework of nonrelativistic quantum mechanics framework of nonrelate [BMWF-FBK-67-82] antum mechanics 12 p1931 N68-22595 Quantum mechanical methods for calculating energy transfer in molecular collisions [CALT-532-19] 12 p1931 N68-22605 12 p1931 N68-22605 Calculation tables for matrix elements of atomic quantity operators of partially filled shells [ANL-TRANS-563] 12 p1935 N68-22729 Asymptotic behavior of cross sections of elastic and inelastic particle processes
[JINR-E2-3655] 12 p1941 N68-22912 Joint coordinate momentum interpretation of quantum mech (JINR-E4-3687) method for statistical 12 p1941 N68-22918 Quantum mechanical collision theory applied to in-terpretation of relative biological effectiveness [ORNL-4215] 13 p1998 N68-23199 Photoelectron counting statistics produced by fully quantum mechanical laser [NASA-CR-94546] 13 p2079 N68-23392 CP violating weak currents [ISS-68/3] 13 p2117 N68-23651 Quantum mechanical calculations involved in nitric oxide atomic oxygen reaction [AFCRL-68-0137] 13 p2019 N68-23906 Quantum effect of electromag [AFCRL-68-0127] netic potentials 15 p2518 N68-26318 Relaxation of local perturb tion in quantum vibrational system [FTD-MT-24-92-67] 15 p2544 N68-26768 Kinematic equations and Regge trajectories for equal a ns and quantum mechanics of equal and unequal mass scatter-[AD-668537] 16 p2717 N68-26968 Simplified integral equi relativistic quantum mechan [SLAC-79] ns for solving non-three body problem 16 p2719 N68-27137 um theories of gravity 16 p2713 N68-27179 Canonical and covariant qualification [AFOSR-68-0642]

theory, and m [NP-17357] Rotational energy of three-par [ITF-67-49] Quantum mechanics of photon counting, optic coherence, and space-time correlation of light beams [TR-0158/S3816-88/-1] BCS theory and quantum my tending zero sound and super body problems [PEL-159] Drift field and field gradie ciency of radiant energy pho Field interaction with di alization of field operator [ITF-67-25] Quantum mechanical stu-various compressions using Hartree approximation Hartree approximatio [FOA-4-C-4346-23] Current and density of Approximate analytical solutions of quantum mechanic JINR-P4-3741) Quantum limit magnetoresistive ty scattering for spherical Fermi s Field theory of elementary sumption that each particle is qui ject extended in space and time [RIFP-76] Quantum mechanical equaphere gas at high temperature [REPT.-68/25] Proposed method for me [CEAL-1042] Classical approach to quantum and wave phenon Quantum mechanical analysis of high resolution nucleur magnetic resonance spectra and related com-puter program [INR-P-908/XVIII/PP] 16 p2608 N68-27240 Method for solving problems of emphasis on reducing quantum mec to quasiclassical form and applying Brillouin method Two applications of perturbation theory in molecular uantum mechanics 16 p2723 N68-27781 [ITF-67-53] Scattering of quantum charged particles by elec-tromagnetic plane wave field [JINR-P2-3753] 16 p2727 N68-27979 Conference on quantum a weak interactions, and highe [CERN-68-23, V. 1] Scattering by repulsive singular potential with power ngularity in quantum mechanics
15, 47, 521
16, p.2731, N69, 28175 ativistic systems and q d wave equations, scattering quantized fields and local in-(ITF-67-22) 16 p2731 N68-28175 Quantum mechanical model three body problem for interacting and colliding particles, and use of perturbation theory 24 p4307 N48-37535

invariance and quantum and classical effects of it, and model of internal space of elementary 17 p2920 N48-28547 oling and isobars using ntum mechanics 17 p2929 N68-28708 thanics, kets in Wigner r potentials 17 p2940 N68-29290 ticle system 17 p2941 N68-29422 Quantum mechanical study of electron gas in terms of one and two particle distribution functions. 18 p3126 N68-29686 Quantum mechanical Kubo expressions used to find electrical and thermal conductivity, and shear visposity of degenerate Lorentz electron gas in study of stellar 18 p3163 N68-29932 chanics studied in ex-18 p3154 N68-30342 Quantum mechanics using perturbation theory for higher order effects in Coulomb excitation excitation 19 p3320 N68-30691 Coherent state applied to quantum statistical 19 p3346 N68-30899 nt effects on quantum effi-loelectric cells 19 p3348 N68-30929 Generalized equivalent potential method for calcu-ting multichannel scattering and particle scattering mplitudes at nonzero spin 19 p3321 N68-30975 orn approximation and convergent kinetic equati-quantum mechanical treatment of static transpo omena in nondegenerate plasmas 19 p3338 N68-31023 antum mechanical calculations of three body 19 p3323 N68-31027 sum theory of 19 p3350 N68-\$1029 ives model for renor-19 p3325 N68-31112 19 p3331 N68-31554 19 p3333 N68-31699 ion for equations in 19 p3317 N68-31914 rity of electron impurinurface 20 p3565 N68-32690 ry particles based on as-is quantum mechanical ob-21 p3735 N68-33813 ion of state of hard-21 p3793 N68-33965 g electron g factor 21 p3745 N68-34700 22 p3933 N68-35718 ns of quasiclassics with n mechanical ogustions lying Wentzel-Kramers 22 p3936 N68-35848 chanics and field theory, symmetries 24 p4307 N68-37534

Three body problem in qua

17 p2925 N68-28488

Coherent state applied to quantum statistical mechanics Nuclear binding energy in many body problem with Gaussian potential [ITF-67-46] 19 p3328 N68-31246 Binary kernel method for calculating quantum statistical distribution functions of hard sphere system 20 p3544 N68-32922 **QUANTUM THEORY**

ovariant quantum mediate particle local currents
24 p4311 N60-37690 tion of composite (JINR-P2-3847) Vibrational relaxation uding multiple quantum of harmonic oscillators in-24 p4215 N68-37785 **QUANTUM NUMBERS** Mathematical model of quantum osci asonic absorption coefficients in quanti elds in approximation of relaxation time 05 n072 [NASA-TT-F-11417] 05 p0729 N68-14810 3A-11-1141)
unntum numbers of boson resonances, considering
n nonets, boson L clusters, strangeness baryons,
e-pion resonances, and allowed and forbidden
nances of two-body decay modes

06 p0885 N68-15852 Possible multiplicativity of lepton quantum number which distinguishes mu-neutrino from e-neutrino [JINR-P2-3601] 09 p1393 N68-19037 telation between nucleon clus aber of shell model wave function 13 p2121 N68-24060 Doubly excited states of hydrogen of high quantum number and electron atom ionization [NASA-TM-X-63214] 14 p2305 N68-24734 seous radiation of light and quantum elec-16 p2622 N68-27300 Quantum numbers and mechanics, kets in Wigner theory, and matrices for nuclear potentials [NP-17357] 17 p2940 N68-29290 iculations of Rydberg-ic molecules, and solu-for bound states 18 p3025 N68-30232 Jacobi-Gauss quadrature calcula Klein potential energy for diatomic m tion of wave equations resulting for b [ORNL-TM-2167] 18 WKB method for solution of configural interaction of terms in system of two charged particles [JINR-P4-3842] 24 p4321 N68-38339 QUANTUM STATISTICS Coherent state applications to qu mechanics (NYO-3699-161 05 p0713 N68-14489 Characteristics of weak interactions, universal Fermi interaction, classical selection rules, and lepton conser-05 p0720 N68-14974 Quantum mechanical calculation for density of states and Fermi energy for charged particles in uniform mag-netic fields [AD-662907] 06 p0888 N68-15149 Statistical models for many particle production rocesses emphasizing angular momentum conserva-[DESY-67/25] 07 p1053 N68-17056 Parafields repres of isospin and stras [JINR-P4-3602] in of inner degree of freedom 12 p1937 N68-22787 Nonrelativistic quantum mechanics for particle in-rractions under gravitational forces NTH-68/2] 15 p2506 N68-25725 (NTH-68/2) Equilibrium properties of boson systems at low tem-peratures 16 p2720 N68-27167 Quantum statistical distribution functions or system of hard sphere fermions with spin 17 p2923 N68-28374 Quantum statistical model applied to pion and kaon listribution and production in proton-antiproton an-initation reaction 17 p2926 N68-28601 omas-Fermi-Dirac model for calculation of ic hyperfine splitting and unpaired electron densi-17 p2927 N68-28632

Proin qua Inte Euclid relativ [ITF-6 Sym Wights (ITF-6 Gree INP-I Quan mulas u rent flu

19 p3346 N68-30899

23 p4125 N68-36969

01 p0102 N68-10138

ced for quantum scaler fer space time 01 p0105 N68-10391

functions used to determine transition proba-id expected values of single particle operators

Nonleptonic weak is ponent wave equations [COO-1428-28]

Fock represent fields in two-dime (JINR-P2-3392)

24 p4299 N68-37658

Quan and cor or absor [AFCR Kaell Fock sp irreda gebra of ITF-67

stulation studies of de Haas-Van Alphen ef-rical nickel crystals fect in spher (IS-T-169) 01 p0123 N68-10471 Probability of simultar quanta using Dirac disper [TG-230-T523] ission of two light 01 p0109 N68-10544 ted superconvergence a for static models 01 p0114 N68-10839 TH/217) ions in quantum theory Collinio of transport phen [WIS-TCI-225] 02 p0246 N68-11535 Calculating T-odd angu-mission of two mixed a lar correlations at cascade amma-quanta by polarized [NP-16951] 02 p0247 N68-11577 eory of laser osc Quantum the [TRG-057-2] 03 p0349 N68-11993 Existence of scattering matrix in Wightman approach to axiomatic theory of nonrenormalized in-[JINR-P2-3086] 03 p0389 N68-12348 Analysis and appli local quantum fields [SLAC-PUB-250] n of high energy behavior of 03 p0393 N68-12572 Quantum theory of scalar field and electromagnetic field models for Cauchy problem
[NASA-TT-F-11243] 04 p0595 N68-13346 Quantum field theory or rapidly increasing spectra [JINR-E2-3472] ry relativistic model with ion 05 p0709 N68-14276 meral relativity 05 p0700 N68-14311 Quantum field theory [NP-17143] 08 p1212 N68-17393 Quantum theory of many particle systems [AFOSR-68-0100] 09 p1390 N68-18723 Infinite fine struc plets in quantum field theory [JINR-P2-3606] 09 p1392 N68-18982 Quantum mechanical theory of electrode processes 10 p1483 N68-19797 Formalism for C-number generating functionals of quantum field theory [TH/68/6] 12 p1913 N68-21848 12 p1913 N68-21848 reportical contributions of Soviet scientists to search on elementary particle interactions, quantum erry, and quarks 14 p2303 N68-24604 Necessity of production amplitudes in quantum field 14 p2309 N68-24926 Light as information [NASA-TT-F-11743] 15 p2506 N68-25729 ons of canonical commu-field theory for Hilbert Nonequivalent representation relations in quar-(ITF-67-39) 15 p2521 N68-26486 Problems of Hamiltoni quantum field theory an and Lagrangian formalisms (ITF-67-42) 15 p2522 N68-26546 Integral representations of vacuum expectations in Euclidean quantum field theory and consequences in relativistic case [TF-67-50] 15 p2524 N68-26720 n within framework of lum field theory 16 p2725 N68-27960 Symmetry and its violi ightman axiomatics of qu [FF-67-32] Green function techniq theory for system of fermio [NP-[7413] is in quantum many body 16 p2731 N68-28169 Kinetic energy spectra and wave functions to con-oct individual and collective particle features of nuclei uring deformation for two body interactions Interactions 17 p2924 N68-28456 molecular properties and tion for gases 17 p2926 N68-28535 ed to calcu ns of klystron cavity saps 17 p2864 N68-28700 or absorption using perturb [AFCRL-67-0688] ion theory 17 p2936 N68-29212 Kaellen-Lehmann spectral energy distribution for Fock space in quantum field theory analysis [JINR-P2-3740] 17 p2939 N68-29273 Irreducibility of infinite representations of Lie al-gebra of rotation group R sub 3 Normal form of operators in Fock space [JINR-P2-3739] 17 n2941 N68-29429

Current algebra and quantum field theory a (AFOSR-68-1131) tary particles 18 p3135 N68-30519 Classical approach to um theory and wave 18 p3138 N68-30781 d fast electrons with incled systems 19 p3344 N68-32050 interactions of plasmons in bounde [ORNL-TM-2101] on gas with anomalous agnetic fields 19 p3344 N68-32069 Quantum theory of magnetic moments in in [NASA-TM-X-61035] colocal quantum field tors, 5 matrix theory. Conference proor theory, Hilbert spa-and space-time func [IINR-P2-3590] 19 p3336 N68-32107 ld in De Sitter spacem theory 20 p3547 N68-33077 Statistical med [UCRL-71060] ionized gates 20 p3558 N68-33145 tum field theory 20 p3550 N68-33448 Functional formali elation of quan Summary res 22 p3913 N68-34863 istry to spin free 22 p3820 N68-34900 experiment described and quantum theory of radiation 22 p3928 N68-35369 [AFCRI -68-0338] High energy upper is forward fixed momen plitudes that satisfy ana quantum field theory [REPT.-64/23] for forward and nearly transfer scattering am-properties of axiomatic 22 p3929 N68-35495 Quantum theory of el auned by gravitational of NASA-TM-X-61285] gas in magnetic fields 23 p4140 N68-36362 Quantum theory of p ctor correlations 23 p4152 N68-36699 wave modes for inter-Quantum theory of traveling ally modulated lasers 23 p4072 N68-36705 Classical and quantum 23 p4120 N68-36711 Mathematical logic and logic of physical systems, and quantum theory in Hilbert space [IC-68-35] 23 p4109 N68-37070 -potential method for it wave equations for n JINR-P2-3900] 23 p4135 N68-37274 Variational calculation of golecular crystalline hydrogen renergy correlation between n of ground state energy for drogen with equation of state tween particle motions 24 p4309 N68-37577 Behavior of diffraction peak for particles with arbitrary spins 24 p4314 N68-37835 OUARKS Photoproduc [DESY-67/20] ction of leptonic quarks 01 p0101 N68-10039 ark model and high energy particle production DESY-67/191 01 p0103 N68-10275 iei for electromagne (MIT-2098-359) 01 p0115 N68-10901 Detecting thermal irop method, and so d quarks by mass spectrometers, oil ocumulation of quark ions on metal (IAE-1285) 02 p0247 N68-11578 tor beta decay through arrent algebra 02 p0248 N68-11592 diative corrections to vectors ble modification of quark of 02 p0249 N68-11820 r programs and experi-03 p0391 N68-12452 em in symmetry breaking one and quarks 05 p0710 N68-14341 onance scali-i-particle met R-F2-34541 rk model for re one between nonleptonic ns, and mesons 09 p1394 N68-19079 decay amplitudes [JINR-P2-3603] es in quark model and appli-Equation for meson sta cation to meson bootstra (AD-665663) 11 p1749 N68-20589

ZITAND THAT QUARTE Quark model analysis on positive and segative baryon mass splittings [IC-67-27] ntion by mount of Axial co 12 p1938 N68-22798 Racic rules and symm (PUC-937-285) es of quark model 13 p2114 N68-23303 Additive quark model an energy multiple particle pro [IBJ-881/VI/PH] d experimental data for high 13 m2121 N66-23926 Lambda to dama hyperon ratio in isospin-1 S-wave antikaon nucleon reaction in quark model [LPTHE-TH-226] 13 p2122 Non-24303 Theoretical contributions research on elementary participants, and quarks of Soviet scientists to cle interactions, quantum 14 p2303 N68-24604 Quarka, symmetries and groups [PUC-937-294] 15 p2520 N88-26458 Groups, symmet (PUC-937-304) 15 p2522 N68-26543 S matrix theory for particle classification from Regge theory for quarks [IC-68-14] 17 p2928 N68-28648 17 p2928 N68-28648 ry particles, and Bethe-nd antiquark interacting ector field 18 p3126 N68-29660 Quark models of ele Relativeitic quark field the reducing S matrix elemen ery, and general formulas is to expectation values of IDESY-68/11) 18 p3139 N68-30803 Quark model as ctivity and ancieon [JINR-P2-3819] 20 p3547 N68-33064 drop techniques used in harged particles called Optical spectroscopy and oil-arch for stable fractionally o [COO-1112-155] 20 p3547 N68-33096 in effect of quark existence on Model theory to expla tigh energy scall (UCRL-18251) 21 p3742 N68-34473 Quark model - propert [PUC-937-324] es, structure 21 p3743 N68-34488 nis for describing high to body collisions 22 p.3922 No.8-34980 Regge pole and quark a duction processes 22 p3923 N68-34965 s investigated using odels 22 p3930 N68-35549 model of free effective Baryon current algebra in guarks [ITF-67-54] 22 p3933 N68-35687 Docay distribution framework of quark m [TPJU-19/67] ces discussed in 22 p3937 N68-35864 Regge trajectories and re [IC-68-36] s in quark model 23 p4128 N68-37027 in classifying low lying meson states (CALT-68-162) 24 p4313 N68-37780 U MINES (EXCAVATIONS) QUARTZ Chemical analysis of quartz monzomites and as-sociated gruss from Fremont Lake area, California [NASA-CR-90048] 01 p0035 N68-10180 X ray scattering by binary liquid metal system, and the scattering from barium titansee near Carle point (R-3) 02 p0258 N68-11329 [R-3] derivatives of isotropic NASA-CR-913031 Coefficient of frio ASA-CR-61439) onance for determining stalline quartz 06 p0894 N68-15522 Electron paramag radiative defects in in [FTD-HT-47-426]

06 p0815 N68-15670

SU

ZZZZZZ

[3]

ty fi

RADA

RADA

[NA

for o

Fi

L

IAD

chart [NR

Cu circu (NEI

for d

Phi and a [SAA

Rei

NAS

Sur direct rogati [RAD

Str

freque (AD-4

[AD-6

Ope

Stati P68-3

[NRL-

radar a (TI-03-

Desi

Des

Co

internal reflection spectroscopy of powdered quartz [NASA-CR-92572] 06 p0796 N68-16097 Temperature performance measurements for temperature compensated quartz oscillators [ECOM-2896] 09 p1313 N68-18333 Energy loss of protons in Be, Al, Si, lucite, sapphire, 09 p1410 N68-19194 Search for magnetic field induced optical second harmonic using quartz, ADP, nickel, and glass 15 p2535 N68-25998 Transient radiation effects on transmission loss and reflectance in optical glasses and quartz [LA-DC-8636] 17 p2952 N68-28358 Hugoniot equation of state measurements for sand-stone, basalt, limestone, pumice, quartz, and polycar-[NASA-CR-73230] 17 p2877 N68-28631 Characteristics of Stokes light and hypersound generated by Brillouin scattering of ruby laser light in iquids and fused quartz [AFCRL-68-0112] 17 p2897 N68-29016 Spectrophotometry of lunar topography based on hervations by quartz spectrometer and horizontal [NASA-TM-X-61023] 18 p3161 N68-29672 Aging rate of coldweld sealed quartz crystal resona-tors in single sideband units [ECOM-2946] 18 p3046 N68-30071 quartz and nilicon carbide crystals (AFCRI-68-0236) [B n3022 Meeting of Recitation of Excitation and propagation of coherent elastic ul-trasonic waves in piezo quartz at 114 GHz 19 p3352 N68-31167 Effect of adsorbed water on wetting properties of borosilicate glass, quartz, and suppliere [NRL-6703] [9 p3297 N68-31318 Theory and design principles of the monolithic crystal filter 21 p3673 N68-34182 Mounting technique and electrical properties of sin-sideband filter for quartz crystal COM-2972] 21 p3661 N68-34424 ECOM-2972] Two theta value tables from X ray analysis of quartz [JUL-533-CA] 22 p3918 N68-35637 Nondestructive shock tube tests of Sandia thick quartz gages (SC-TM-67-807) 23 p4083 N68-36650 QUARTZ TRANSDUCERS Quasi-static calibrations for determining quartz, piezoelectric type, pressure transducer sensitivity from 20 to 477 deg & [NASA-TM-X-1479] 02 p0214 N68-11867 Thick quartz transducers for measuring high intensi-shock pulses in shock tube tests IC-DC-67-3204] 12 p1880 N68-23012 ty shock pulses in si [SC-DC-67-3204] Quasars and strong radio sources, dense star systems evolution, stellar collision dynamics, cosmic ray elec-trons, intergalactic hydrogen absorption lines, and stel-04 p0575 N68-13307 Quasar model based on relaxation oscillations in su-Permassive stars NASA-CR-913361 04 p0576 N68-13362 Source of red shifts in absorption spectra of quasars NASA-CR-91731] 05 p0737 N68-14553 [NASA-CR-91731] Interferometer observations of angular dimensions of quaser 3C 237B [WRE-TN-APD-9] 07 p1081 N68-16687 Model for quasar continuum radiation with applica-tion to 3C 273B [SU-IPR-213] 10 p1587 N68-20180 Radio astronomy study of galactic radio sources in north polar region 10 p1598 N68-20535 Evidence for particle acceleration on galactic scale used on radio galaxies observations and radio emission from quasars [NASA-CR-84764] 16 p2753 N68-27390 Radio emission from two quasi-stellar synchrotron sources and theoretical thermal history of intergalactic hydrogen gas 17 p2964 N68-28348 Optical and radio emission properties of quasars 20 p3583 N68-33564 Multitemporal theory of relativity and its applica-ons to quasars and elementary particles 21 p3739 N68-34212

QUATERNIONS [BNL-11717] weidment spe [NRL-6602] temperatures [COO-1054-41] QUEUEING THEORY JPRS-432491

Mathematical models of controlled queueing syste with priority assignment optimization, and minim waiting loss QUASI-PARTICLES
U ELEMENTARY EXCITATIONS QUASI-STEADY STATES 06 p0864 N68-15585 Attenuation effects resulting from bombardment of olar D region by high energy protons generated by lar flares - effects on non-inverse frequency squared Analysis of single queue system for two priority equest flows 06 p0864 N68-15586 absorption events 17 p2879 N68-29098 Queueing reward system with several customer Mathematical model for computing equilibrium pro-erties of one dimensional self-gravitating stellar IP-37721 09 p1357 N68-18265 Performance of queueing simulator for generating random time intervals of simulated queueing system 10 p1512 N68-19866 (NASA-TR-R-289) 20 p3588 N68-32978 QUASI-STELLAR RADIO SOURCES Ladder processes for constru process in continuous time theorems, with results applied to structing basic stochastic ie and obtaining limit QUASILINEARITY U NONLINEARITY 10 p1547 N68-20015 [TR-34] Impedded semi-Markov analysis on time dependent and asymptotic distributions for queueing and waiting Pauli algebra and restricted Lorentz group [REPT.-1] 22 p3900 N68-35389 AD-665783] 11 p1725 N68-20/68 QUENCHING (COOLING) Queueing model and Monte Carlo program for scheduling computer time in computing center.
[AD-665687] [1 p1666.N68-20803 Flame extinguishing properties of aqueous jellies used as plasticizing agents in blasting explosives sting explosives 02 p0177 N68-11464 Convergence and cost minimization in queueing system with exponentially distributed service and con-stant interarrival times Measurement of metal crystal defects resulting from n or quenching 03 p0352 N68-12551 15 p2490 N68-25672 Cryogenic quenching of aluminum and titanium alloys for rapid cooling without distortion [NASA-CR-91344] 04 p0514 N68-12853 Closed networks of queues 16 p2619 N68-27089 04 p0514 N68-12853 Waiting time distribution for two line system with changeover times in queueing theory analysis [TR-35] Nitrogen quenching of spurious thermoluminescence ancient limestone eory analysis 18 p3103 N68-30016 04 p0561 N68-13700 Controlling input to multiple facility multiple queue-Fracture properties of quenched and tempered steel [TR-22] 19 p3303 N68-32157 08 p1186 N68-17678 Thermal quenching of X ray luminescence in alkali halide phosphor crystals vay stack languages 22 p3844 N68-35582 Checking automata ar [SDC-TM-738/045/00] 08 p1226 N68-17996 Quenched residual rocket motor heat for vac-08 p1231 N68-18066 [NASA-18th-A-03147]

Quenching potentials for diffusion and kinetic propane flames, and influence of electric fields on vibration combustion modes of gaseous fuel

18 p3185 N68-29845 RA-28 ENGINE Gross thrust and air mass flow in performance testing of RA-28 turbojet engine [ARC-R&M-3538] Alloy strengthening by fine oxide particle dispersions, and splat cooling process for alloy development [NASA-CR-95871] 18 p3091 N68-30233 19 p3358 N68-31251 RABBITS Caffeine, and strychnine effects on rabbits and dogs after exposure to transverse accelerations 04 p0454 N68-13190 Tensile and hardness tests, and work hardening of Zr-Cr and Zr-Nb-Cr alloys after quenching and temper-Microwave radiation effects on rabbit eyes 07 p0947 N68-16938 18 p3094 N68-30570 Phosphorescence quenching for calculating permeability of polymeric films to gases [TR-0158/9250-01/-5] Electroencephalographic studies on rabbits under conditions of hypoxia [NASA-TT-F-[1405] 07 p0948 N68-17156 20 p3510 N68-32660 Transverse acceleration effects on rabbit troops acetylcholine content and cholinesterase activity acetylcholine content and cholinesterase activity 8 p1131 NoS-17748 Critical field behavior of superconducting thin films of lead, tin, and indium quenched on substrates at low Correlation of electroencephalograph shifts and food procuring reflex of rabbits during increasing hypoxia 08 p1131 N68-17749 21 p3757 N68-34741 Annealing kinetics of vacancy defects in quenched gold at temperatures between 200 and 600 deg C 22 p3948 N68-34964 X ray irradiation visual cell stimulation in rabbit Electron attachment of electrophilic gases for high temperature plasma quenching [NASA-CR-66568] 22 p3943 N68-35358 (ORO-3599-1) 16 p2600 N68-28053 Clinical and morphological characteristics of hemodynamic responses in eye vascular system of rab-bits exposed to transverse accelerations 17 p2818 N68-28506 Mathematical theory of stationary queue applied to lephone communications Clinical and histological studies of effects of high energy electroms on skin and tissue of rabbits [CEA-R-3294] 22 p3814 N68-35897 01 p0028 N68-10214 Joint distribution of virtual busy period for M/G/I queue [AD-659062] n of virtual waiting time and residual Effect of superhigh frequency electromagnetic fields on conditioned reflex regulation of cardiac and respiratory activity in rabbits [JPRS-4652] 23 p4001 N68-37285 01 p0084 N68-10293 Technical cybernetics - automatic control systems, ucueing and reliability theory, stochastic processes, attern recognition, logic circuits, scheduling, and al-RACETRACKS [PARTICLE ACCELERATORS] Longitudinal magnetic field calculated for Sirius acetrack stellarator 01 p0041 N68-10301 14 p2324 N68-24898 Mathematical model and algorithm for multichannel queueing system with irregular group arrival of de-manufa INP-TR-16191 Low energy electron beam for investigating magnetic surfaces on straight section of racetracks [NP-TR-1632] 14 p2300 N68-25401 01 p0042 N68-10306 Two queues in series with finite intermediate waiting som examined in terms of imbedded semi-Marko RACON BEACONS
U RADAR BEACONS AD-6564831 RADAR 01 p0086 N68-10980 ADAR

T COHERENT RADAR

NT CONTINUOUS WAVE RADAR

NT DOPPLER RADAR

NT METEOROLOGICAL RADAR

NT MONOPULSE RADAR

NT MONING TARGET INDICATORS

NT OPTICAL RADAR Closure property of probability generating functions and random walk results connected with queues [AD-662238] 06 p0863 N68-15492 Queueing theory for mathematical methods of technical cybernetics

06 p0864 N68-15584

DEX

stem

5585

iority

5586

8265

m 9866

0015

ndent

0768

n for

0803

5672

2089

with

0016

ueue.

2157

5582

esting

11251

dogs

3190

6938

under

7156

blood

7748

food

Xia 17749

rabbit

28053

s of

28506

high

35897

fields spira-

37285

Sirius

24898

gnetic

25401

PULSE DOPPLER RADAR
PULSE RADAR
RANGE AND RANGE RATE TRACKING
SATELLITE-BORNE RADAR
SEARCH RADAR
SECONDARY RADAR
SIDE-LOOKING RADAR
SURVEILLANCE RADAR
TRACKING RADAR Polarization characteristics of parabolic dish anten-(JPRS-46240) 20 p3439 N68-33222 cidence (TN-1967-54) RADAR APPROACH CONTROL Analytical treatment of broadband random signa (AFCRL-67-0602) Cost estimates and economics of radar approach ontrol systems, and landing aids for airport surface raffic (SRDS-RD-67-28) 04 p0438 N68-12879 der m ndar cross section of sun NASA-CR-929951 Two rapid scan radar/display techniques evaluated for use in aircraft-contained zero-zero landing system [NASA-CR-73184] 07 p1022 N66-16635 Pulse compression signals of n [JPRS-44088] oncyclic binary codes 05 p0631 N68-14758 Design concepts for optimal radar systems [RM-5475-PR] 10 p1496 N68-19872 of reentry wa (TM-6/331) Weather clutter reduction for radar approach con-Sequential signal design for communication and radar equipment based on amplitude modulation policy ISURC-68-11 18 n3111 N68-30860 Design and field evaluat brightness radar display equips staliation /BRITE-1/ [SRDS-RD-68-28] on data on improved ent for airport tower in-12 p1843 N68-22049 Integral transforms for 2n di-unction of n variable radar signals mensional ambiguity 20 p3530 N68-33587 (OSURF-2430-4) 15 p2424 N68-26069 or air truffic control Thin lens model and Fourier methods in optical signal processing for radar applications Apollo command a decrease due to reentry ([NASA-TN-D-4784] [FAA-RD-68-28] 24 p4227 N68-38145 18 p3033 N68-29822 RADAR ASTRONOMY nentals of radar /textbook/ 22 p3836 N68-35487 Ionospheric research in anter radio astronomy, and radar astr [RS-71] RADAR DATA nnas, related equipment, [FTD-HT-67-192] Radar and a 01 p0058 N68-10643 Synthesis of optimum rad ty function as error criteron signals utilizing ambiguianalysis [NASA-TM-X-63008] lonospheric physics, and radar and radio astronom research programs of Arecibo/Puerto Rico/Ionospher ic Observatory [SEL-67-089] 04 p0499 N68-13097 23 p4017 N68-36148 RADAR ALTIMETERS U RADIO ALTIMETERS 04 p0499 N68-13097 SEL-67-URV)
Developing space radio and radar astronom, sethods and large sperture radio telescope 10 p1596 N68-20380 contours for satellite tracking actual line-of-sight visibility [NASA-TM-X-63038]

Radiation reasons Time signal controlle data gathering radar un [ECOM-5191] RADAR ANTENNAS Summarized information on at radio frequencies of mod radiation environments, planets, and spa-Radiation patterns and side-lobe levels synthesized r circular radar antenna arrays (AFCRL-67-0621) 11 p1787 N68-21801 Microwave attenu based on analysis of ti [MW-52] [NELC-1501] 02 p0183 N68-11775 Far field patterns, ele it design, and feed systems Bibliography of publications of work in radar and for electronically steerable ante [NASA-CR-91383] na systems 04 p0475 N68-13044 (ESD-TR-68-56) 15 p2449 N68-26331 Digitalization syst ircraft flight control Polarizat (MTP-521 ization properties of parab op p1301 N68-18332 Radar investigations of solar sy stem planets 16 p2756 N68-27297 RADAR DETECTION Large antenna systems - construction difficulties, arabolic reflectors and antenna arrays, and aperture RADAR ATTENUATION Clear air turb Radar attenuation measuren interference of rocket engine ic [NASA-CR-61625] synthesis (NRL-66281 adar detection syste NASA-CR-911371 nized exhaust gases 09 p1303 N68-18664 09 p1302 N68-18380 Structure and foundation behavior of missile range radar towers observed for effects of antenna operations Attenuation and scattering effects on rain detection by radar [TR-0158/3525-09/-1] [AD-664764] 10 p1496 N68-19904 Bibliography on re to space flights, and a [NASA-CR-93738] 13 p2102 N68-24174 Computer plotted range, height, and elevation angle charts for radar antenna [NRL-6650] 10 p1497 N68-19976 RADAR BACKSCATTER
U BACKSCATTERING current distribution effects on radiation patterns of (NELC-1321) PADAR BEACONS Vehicle aspect, attitude, and motion data for As-trobee 1500 Flight 16.05 US - calibration data and curves for radar beacon, antenna, pressure, and tem-perature Integrated random vibration-electrical test method for demonstrating performance of rendezvous radar NASA-TM-X-63009) 01 p0137 N68-10141 porting equipment used with air traffic control radar leacon systems [RD-68-1] 14 p2364 N68-25509 Phase amplitude monop and accuracy investigation [SAAB-TN-64] radar, signal processing 15 p2423 N68-25804 Refractivity variations measured by use of radar antennas at both ends of wave propagation path [NASA-CR-95479] 17 p2849 N68-28656 Fight tests of airborne beacon range altitude moni-ter feasibility model for interrogating air traffic control radar beacon system transponder-equipped aircusti [RD-68-48] 23 p4097 N68-36019 m and difference radar patterns by single ctional antenna for aircraft recognition and inter-RADAR DESPLAYS
U RADARSCOPES Flight test and evaluation of airborne radar systems of determine separation information NA-68-38] 23 p4098 N68-36871 (RADC-TR-68-140) 18 p3033 N68-29774 (NA-68-38) Structural vibration, disp frequencies of radar tower di [AD-669239] rement, and reson RADAR BEAMS ring antenna operation 18 p3034 N68-29830 Conceptual development of long wave radar display based on processed plan position indicator and cross beam raster scan techniques (NASA-CR-73185) 07 p1023 N68-17008 Design and operation of X band polarization radar antennas compatible with pulse Doppler radar [AD-669670] 18 p3034 N68-29839 MTR-418) Review of Thomson scatter the [NASA-CR-85738] Operation of coupled antennas to form X band radar sterferometer to use Venus radar echoes to map 15 p2429 N68-26707 monostatic acattering planets surface [ESD-TR-68-18] Motion parameters fr 18 p3164 N68-30080 Radar hurricane rese 24 p4224 N68-37721 Statistical decision theory applied to radar antenna processing for surface target detection in clutter [P68-35] 18 p3037 N68-30375 m radio wave p ML-67291] RADAR CHAFF Matrix-fed circular antenna array for continuous RADAR CORNER REFLECTORS [NRL-6696] Electromagnetic fields in focal region of paraboloid flector calculated from Debye-Picht-Luneberg dif-19 p3237 N68-31289 Design and development of integrated microwave components for electronic steering module of phased radar arrays [T1-03-63-03] 19 p3244 N68-31920

fraction integrals [AFCRL-67-0486]

RADAR CROSS SECTIONS

Radar cross sections for to using exact Mie theory [ECOM-5142]

19 p3244 N68-31920

Antenna designs for Thomson scatter radar factory for sounding in 90 to 2000 km range 20 p3438 N68-33061

08 p1148 N68-17914

tally reflecting sphe 01 =0031 N68-10824

Tables of electromagnetics section of conducting scattering amplitude and 06 p0883 N68-15111 omagnetic scattering of screte target 06 p0802 N68-16055 a, and average 07 p1076 N68-16518 08 p1148 N68-17928 Electromagnetic scattering properties of bistatic adar cross sections of meteorological coherent-doi adar angel models 12 p1842 N68-21913 Diffraction analysis of m r cross section of sec-rec body of revolution 17 p2854 N68-29288 radar cross section effects 22 p3833 N68-35140 01 p0028 N68-10248 Recursive digital filter for velocity estimations from FPS 16 radar information [WRE-TN-ISD-81] 17 p2855 N68-29446 e generator for triggering 18 p3036 N68-30348 Data reduction and tra-missile ranges and trackers [DR/CWG-104-67] 19 p3236 N68-30971 atology for Montreal a activity radar data 20 p3524 N68-33231 iple radar signals and 21 p3661 N68-34405 activity variations, and raphy with abstracts 03 p0339 N68-12251 of targets in clutter and aposite targets 04 p0478 N68-13263 sing of resources related 10 p1521 N68-19870 19 m3236 N68-30974 or nuclear cloud indication using radar mapping ECOM-2966] 22 p3905 R66-35326 Meteor radar system for wind and density measure-tents in upper atmosphere Weather data recording as for nuclear cloud indication us [ECOM-2966] 23 p4092 N68-36375 Binary integration method fi selection in radar testing procedi [NELC-1550] od for optimum threshold ocedures 24 p4229 N68-38330 ADAR DIRECTION FINDERS
U RADIO DIRECTION FINDERS RADAR ECHOES

NT CLUTTER

NT LUNAR RADAR ECHOES

NT VENUS RADAR ECHOES Profile curve for body of revo erse diffraction method using ross section as function of aspect evolution obtained by in-ing only backscattering sect angle 04 p0543 N68-12978 Tabulated data on radi counding for October 1967 [REPT.-256-F] echoes for ismospheric 04 g0499 N68-13177 d tropical storm effects 07 p1017 N68-16540 equency radar chaery, e, lunar echoes, groun ection, and echoes from 2 satellite E-TM-PAD-223) 07 p0963 N68-16592 Shape classification ecording of radar da NASA-CR-92667] s of meteor ochoes, and 07 p1063 N66-17074 of Venus atmosphere based ion cross section 08 p1238 N68-17480

S

R

[J

fo

RAI

sis (N.

inst [N/

radi

M

Ra

[NA

Ra

Statistical analysis of antenna fading patterns for mospheric drift, and ionospheric structure determination [IIB-20] 08 pl175 N68-18205 Experimental data on behavior and parameters of falling chaff communications channels at high altitudes [ECOM-0202-3] 09 p1301 N68-18355 Radar analysis of hall storms over Peking /China/ during 1964 [EMM-67-161] 09 p1367 N68-18404 Silver iodide seeding and radar echoes from convec-(SR-23) 10 p1520 N68-19662 Radar signal spectrum distortions produced by volume and surface distributed scatterers 11 p1661 N68-21428 Ground radar reflection coefficient analysis on [NASA-CR-94294] 12 p1843 N68-22044 Laser backscatter calculations and ruby laser radar measurements of atmosphere [NASA-TM-X-61083] 13 p2079 N68-23359 theodolite pibal evaluations, and structure of hailst Double theo aluation and movement, developme [MW-49] ilstorms 13 p2099 N68-23740 Comparison of continuity of hail production and paths during lifetime of storm as defined by radar 13 p2099 N68-23742 Radar examination of development, movement and sucture of hallstorms 13 p2099 N68-23743 Computer program for scattering calculations on radar echo areas [ESD-TR-68-153] 13 p2028 N68-23883 Simultaneous probing of high altitude clear air turbu-lence using microwave radars and aircraft 13 p2101 N68-23935 Radar investigation of vertical structure of showers at thunderstorms based on formation of cumulonim-[T-R-532] 13 p2102 N68-24207 Auroral radar echoes and connection with geomag-etic field and ionospheric currents studied in Northern Hemisphere [NASA-TT-F-11650] 14 p2244 N68-24394 Quantitative analysis of radar echo strength as re-lated to precipitation intensity [DLR-FB-68-20] 14 p2283 N68-25041 Meteorological radar set used for quantitative mea-surements of weather schools [AFCRL-68-0013] 15 p2498 N68-26221 Computer program for calculation of backscatter by smoothly joined second degree surfaces of revolution [OSURF-2430-6] 18 p3038 N68-30682 Pulse compression application of spin echo phenomenon in chirp signals 19 p3329 N68-31330 Comparison of insects flight characteristics with ob-erved characteristics of radar dot angels P-14] 19 p3209 N68-31442

Feasibility of range gated filter and switchable band-pass for clutter control of moving target indicator unit [FSR-AD3-03-68.1] 21 p3667 N68-33819

Numerical method for evaluating geometrical optics radar cross section of general doubly curved convex (MTR-431)

Sensing average angular redistribution of radar return from sea surface, and applying method to air-borne measurement of sea state [NRL-MR-1884] 22 p3836 N68-35563 Network function determination from partial specifi-

[AFCRL-68-0349] 22 p3837 N68-35573 Measurement of wind in boundary layer by radar flections from clear air compared with wind speed ad direction obtained by radio-pilot observations 4-7394] [M-7394]

Radar scatterometer system to measure radar reflec-tivity or scattering cross sections of various surfaces as function of incidence a (NASA-TM-X-61291) 23 p4020 N68-36499

RADAR EQUIPMENT

NT PLAN POSITION INDICATORS

NT RADARSCOPES

Radio-radar telescope and related studies at Arecibo longiberic Observatory [AFOSR-67-2037] 01 p0047 N68-10617 Tracking performance of Apollo land and ship based C band radar equipment [NASA-TM-X-63049] 04 p0475 N68-12878 landmass simulation (U67-1043) 06 p0800 N68-15818

Shipboard antenna equipment and marine radar set [JPRS-44025] 06 p0817 N68-16012

Reliability and capabilities of Okean, marine radar set, for cargo and passenger ships 06 p0802 N68-16014

Dual frequency very high frequency radar observa-tions of solar and galactic noise, lunar echoes, ground backscatter via ionospheric reflection, and echoes from [WRE-TM-PAD-223]

07 p0963 N68-16592 Radar equipment, range finding, and navigation for ollision avoidance and path finding in ships FTD-MT-66-56] 07 p1023 N68-17001 [FTD-MT-66-56]

Training manual on electroautomation of airborne and shipborne radar stations [FTD-MT-64-352] 08 p1147 N68-17842

Performance analysis of propulsion system, strorocket, altitude radar, radar altimeter, and television system of Surveyor 1 spacecraft [NASA-CR-93494] 09 p1430 N68-18656

Large time-bandwidth product bandwidth modul tion for millimeter-wave sa [TR-0158/3230-46/-3]

11 p1664 N68-21599 Computerized simulation and evaluation of radar systems employing range-gated clutter filters, staggered prf, noncoherent or coherent detection, and rectifi-[R67EMH8] 12 p1844 N68-22333

Data systems, radio physics, radar equipment, and solid state physics [ESD-TR-68-10] 13 p2042 N68-23151

Systems analysis and performance tests of radar per-formance analyzer [NA-68-8] 15 p2425 N68-26173

eard in radar installs [LA-TR-68-12] 16 p2600 N68-27978

Airborne fire control radar systems for jet intercep-[FTD-HT-67-167] 24 p4226 N68-37990 Statistical properties of polarized target signal and noise in radar amplitude channels and phase meter 24 p4228 N68-38218

sembly for Helcar 3 radar set 24 p4229 N68-38284 Microwave asse [NAFI-TR-1081] RADAR FILTERS

DAR PILIERO
Low-pass comb, microstrip filter for nonreciprocal gital phase control and reciprocal filtering in S-band cen. TR.-67-482 | 01 p0028 N68-10258 digital phase control and reciprocal fil [ESD-TR-67-482]

Matched-filter responses of linear FM waveform [TR-0158/3230-46/-6] 13 p2025 N68-23143

Functional analysis of FM radar waveforms [TR-0158/3230-46/-7]

18 p3038 N68-30801 Memory tubes with barrier grids for shielding radar om nonsynchronous pulse noise [JPRS-45950] 19 p3241 N68-31599

RADAR MAPS

Computer plotted range, height, and elevation angle harts for radar antenna 10 p1497 N68-19976 INRL-66501 Supersynthesis and delay-Doppler methods of mapping radar echo power distribution across lunar

[NASA-CR-95218] 16 p2766 N68-27642 Weather data recording and detection mechanism for nuclear cloud indication using radar mapping [ECOM-2966] 22 p3905 N68-35326

Comparison of microdensitometry and television waveform analysis as expressions of observed land scape patterns on radar (TR-6) 22 p3876 N68-35378

Planetary surface imaging using superposition models derived from bistatic radar data 23 p4020 N68-36676

RADAR MEASUREMENT

In-cloud drop size distribution function measured by static radar (P-181 01 p0086 N68-10019 Receiver, phase demodulator, phase lock, output, and power supply circuits for microwave interferome-03 p0345 N68-12679 [CAL-157] Methods for modifying hail-bearing convective clouds in Caucasus, USSR [JPRS-43546] 03 p0366 N68-12721

Line-integrated refractivity measurements for evaluating atmosphere-induced radar ranging data er-04 p0478 N68-13271 [D1-82-0639]

Radar measurements or radar cross section of sun [NASA-CR-92995] its of solar corona, and average 07 p1076 N68-16518 Radar observations on tropospheric cloud comption, and distribution over United States of America d States of America 09 p1338 N68-19407

Incoherent radar backscatter measurements of F re-on electron density, electron temperatures, and ion [ESD-TR-67-563] 15 p2462 N68-26410

Meteorological radar set used for quantitative mea-surements of weather echoes [AFCRL-68-0013] 15 p2498 N68-26721

Satellite positions determined simultaneously by camera and radar systems for calibration, and triangu-lation adjustment of camera sites

(ACIC-TR-106) 15 p2429 N68-26864 Radar reflectivity measurement of lunar surface roughness for selecting possible landing sites [NASA-CR-96137] 19 p3365 N68-31594

Airborne stereoscopic camera and radar measure-ents of convective clouds during thunderstorm 21 p3720 N68-34792

RADAR NAVIGATION

Critical evaluation of literature and bibliography on frequency-dependent properties of maritime and aeronautical radar in 3 cm to 8 mm band range [DLR-FB-67-81] 07 p0964 N68-16771

Radar equipment, range finding, and navigation for oblision avoidance and path finding in ships FTD-MT-66-56] 07 p1023 N68-17001 collision avoidance [FTD-MT-66-56] Radio and radar navigation development and im-provement in U.S.S.R.

16 p2621 N68-27295

RADAR PHOTOGRAPHY

Application of spacecraft borne side-looking radar maging systems and radar altimeters in oceanic and errestrial studies [NASA-CR-89983] 01 p0056 N68-10284

Side-looking radar photography for mapping geolog-ic and topographic features [NASA-CR-91439] 04 p0499 N68-13146

Evaluating rangeland resources by multispectral photography, line-scan imagery, thermal infrared and K-band radar imagery, and spacecraft color photog-

[NASA-CR-93181] 08 p1178 N68-17671 Vegetation maps prepared from radar imagery ob-ined over several climatic environments NASA-CR-75170] 09 p1284 N68-19214

tained over several cli [NASA-CR-75170] Radar and infrared imaging techniques for dif-ferentiating rock types and delineating structural fea-

[NASA-CR-94544] · 13 p2057 N68-23210

RADAR RANGE

RANGE AND RANGE RATE TRACKING

Eliminating Doppler or range ambiguities related ith using repetitive waveforms in radar with using rep [NRL-6651] 13 p2028 N68-23916

Active infrared and passive microwave instruments for measuring integrated refractivity in evaluating atmosphere-induced radar range errors [D1-82-0639] 16 p2619 N68-27130 [D1-82-0639] 16 p2619 N68-27130

Radar modulation waverous autocorrelations for rangefinding 16 p2624 N68-27804

Tropospheric refraction and effects on coverage of long range air traffic control radar
17 p2853 N68-29107

RADAR RECEIVERS

Probability distribution derived for ground clutter ignal at input of radar receiver WRE-TN-SAD-182] 07 p0963 N68-16560

Design modifications for ground station direction ading receiver of airborne range and orbit determination system [NASA-CR-61669] 10 p1498 N68-20107

HELCAR 3 microelectronic radar receiver [NAFI-TR-1109] 11 p1664 N68-21658

Broadband receiver for direction-sensitive Doppler radar using quadrature phase shifter with constant output over large frequency range [HDL-TR-1373] 18 p3037 N68-30428

Statistical decision theory applied to finding op-mum radar receiver for signal detection in random hits noise. [FTD-HT-67-243] 18 p3037 N68-30440

Receiver bandwidth effects on range and azimuth performance of side-looking radar 20 p3481 N68-33404

RADAR RECEPTION

Digital simulation of airborne radar ground clutter 20 p3435 N68-32400

407

410

721

by

ngu

244

face

594

orm

792

on and

771

for

100

im-

295

284

log-

146

ctral

671

214

dif-fea-

210

ated

916

g at-

1130

gnal

1804

e of

107

5560

tion

107

1658

1428

op-dom

3440

1404

utter

2400

RADAR REFLECTORS

Structural design of radar antennas and reflectors 01 p0030 N68-10697 (JPRS-433331

Radar cross sections for totally reflecting spheres using exact Mie theory [ECOM-5142] 01 p0031 N68-10824

RADAR RESOLUTION

Straightforward analysis of signal distortion with ap-plications to wideband ionospheric dispersion [MTR-444] 11 p1663 N68-21581 Operation of coupled antennas to form X band radar interferometer to use Venus radar echoes to map planets surface [ESD-TR-68-18] 18 p3164 N68-30080

RADAR SCANNING

Microwave scanning beam guidance system for in-strument approach and landing [RD-68-2] 07 p1022 N68-16486

18 p3164 N68-30080

Conceptual development of long wave radar display based on processed plan position indicator and cross beam raster acan techniques (NASA-CR-73185) 07 p1023 N68-17008

Schematics and systems design for circular scanning radar with automatic data plotting and digital computer

08 pl149 N68-18020 [JPRS-445201 Unfolding antenna with mechanical scanning system for satellite applications 16 p2626 N68-27940

nced Mars exploration spacecraft 21 p3775 N68-34018 Design of advance (NASA-CR-96625)

RADAR SCATTERING

Radar scattering and surface roughness analysis sing Kirchoff-Huygens method, and literature survey n radar scattering theories on radar scattering to [NASA-CR-89977] 01 p0028 N68-10090

Lunar surface model design problems and altimeter radar signal characteristics [NASA-CR-65796] 01 p0135 N68-10669

Biased velocity esti es due to phase center motiv

in reference to radar signals (ESD-TR-67-507) 02 p0173 N68-11041

Radar scattering from plane parallel turbulent leasms slab with step function fluctuations of electron [IDA/HQ-67-6376] 02 p0252 N68-11227

Impedance loading analysis for reduced radar ackscatter from infinite cone, and sphere [R-4] 04 p0475 N68-13029

Airborne polypolarized radar data for terrain analy-04 p0479 N68-13437 (NASA-CR-91472)

Mathematical model of radar cross section of mono-static and bistatic scattering by open circular loops [REPT.-2409-3] 06 p0797 N68-15137

Flight tests of radar scattering coefficient measuring [NASA-CR-94224] 12 p1842 N68-21892

Computer program for scattering calculations on radar echo areas [ESD-TR-68-153] 13 p2028 N68-23883

Attenuation and scattering effects on rain detection [TR-0158/3525-09/-1]

13 p2102 N68-24174 Investigating Venus backscattering by Doppler effect on reflected radar signals [NASA-CR-94770] 14 p2346 N68-25148

Lunar radar echoes at 6 and 12 m wavelengths analyzed to obtain lunar surface scattering data [NASA-CR-95405] . 17 p2967 N68-28611

[NASA-CR-200]
Antenna designs for Thomson scatter radar racmsy for sounding in 90 to 2000 km range 20 p3438 N68-33061

Multiple scattering of electr derdense plasma, and transpo-ing radar backscatter [IDA/HQ-68-8936] tromagnetic waves in un-22 p3942 N68-35222

Radar scattering data validation for earth resources INASA-TM-X-612761 22 p3838 N68-35767

Radar scatterometer system to measure radar reflec-tivity or scattering cross sections of various surfaces as function of incidence angle [NASA-TM-X-61291] 23 p4020 N68-36499

Planetary surface imaging using superposition models derived from histatic radar data

23 p4020 N68-36676 Geometrical theory of diffraction used to predict specular scattering of progressing waves by edges [MTR-497] 23 p402 N68-36801 RADAR SIGNATURES

Bayes optimum detection of targets in clutter and dar signature analysis of composite targets tM-5434-PR] 04 p0478 N68-13263

RM-5434-PK)
Space, atmospheric, and earth radio science studies in wave propagation, magnetotellurics, insect flight ind radar dot angels, and radar and laser design 06 p0838 N68-15543

Matched-filter respon [TR-0158/3230-46/-6] uses of linear FM waveform 13 p2025 N68-23143

dardization of symbols representing targets on (TM-5-68) 16 p2604 N68-27337

RADAR TARGETS

Radar target imaging represented by Fourier integral peration on modified planar aperture data NRL-6623] 08 p1146 N68-17781 NRL-6623]

Computer program for calculating scattering proper-ties of targets, and physical optics formulation [OSURF-2430-2] 11 p1660 N68-20897

Visual detection of radar pip visibility thresholds on an position indicator Plan position TM-750-11 11 p1642 N68-21738

Specification of ambiguity target surfaces for radar nbiguity function synthesis 14 p2223 N68-25170

Computer program for backscatter by radar targets composed of bodies of revolution [OSURF-2430-5] 18 p3038 N68-30688

Radar signal design for operation in extended target 19 p3235 N68-30885

Inverse edge backscattering problem - new approach

22 p3834 N68-35314

Detection of meta presence of ground cl [AFCRL-68-0293] metallic objects of resonant size in d clutter 22 p3837 N68-35572

raction used to predict ing waves by edges 23 p4021 N68-36801 netrical theory of diffra ar acattering of progressin 4971

Statistical properties of partially polarized radas signals and noise, and polarization characteristics of radar targets [JPRS-40624] 24 p4228 N68-38217 24 p4228 N68-38217

rized target signal and is and phase meter 24 p4228 N68-38218 Statistical properties of po ise in radar amplitude cham

Radar polarization char shapes, terrain, and hydron ics of symmetrical 24 p4228 N68-38219

PADAR TRACKING

Radar data analysis for high-speed magnetic tape data recording in spacecraft tracking [NASA-TM-X-63003] 01 p0027 N68-10068

Recapitulation of results of lunar topography studies using radar techniques [NASA-CR-89957] 01 p0134 N68-10210

oz p0233 N68-11894 Structure of hurric [IERTM-NHRL-76] ions of thunderstorm cir-

Aircraft and radar of culations and turbulence (IERTM-NSSL-32) 03 p0362 N68-11923

Bat collisions with aircs servations of bats in vici Base, Texas [AFOSR-67-2510] and visual and radar ob-of Randolph Air Force 04 p0443 N68-13485

Radar tracking for [DLR-MITT.-67-09] le trajectory analysis 04 p0479 N68-13498

Discrete recursive estimation - optimum automated data processing method for multi-electronic tracking systems 04 p0480 N68-13600

Field appraisal and appro dar traffic control ach spacing for advanced radar traffic (RD-67-3) 05 p0686 N68-13945

Advanced radar traffic control system with computer assistance in sequencing and spacing of arrival aircraft [RD-67-2] 05 p0686 N68-13946

Radar tracking anomalies over arid interior basin [ECOM-5140] 09 p1302 N68-18425 s of drop size distribution

Bistatic radar observ (P-17) 09 p1368 N68-18556 Theoretical and no

cal design considerations for application to radar 09 p1303 N68-18618 digital tracking filters with appli [IDA/HQ-67-6715] Summary of radar radio, and optical spacecraft tracking techniques [NASA-TM-X-32400] 10 p1496 N68-19829

ing data of orbiting command le landing site determination 13 p2031 N68-24311 rendezvous radar tr module and lunar m (NASA-CR-92124)

Effects of time, frequent on accuracy of d tracking sta tion errors on accuraory analysis 14 p2347 N68-25271

in methods and devices radar operator training 15 p2399 N68-25762 improvement p used for Doppler s [IZF-1968-7]

16 p2700 N68-27132

Evaluation of space detect for European space programs n and tracking systems 17 p2911 N68-28659

Satellite localization systems

19 p3245 N68-32118 National Airspace System radar tracking backup

channel performance (NA-68-39) 21 p3660 N68-34312

Digitalization system for multiple radar signals and irreraft flight control 21 p3661 N68-36405

Shipborne autor Shipborne automatic radar multiple target tracking system using digital computers and algorithms. [FTD-MT-24-383-67] 22 p3909 N68-35409

n of rockets on climb by presetting rader 711 23 p4022 N68-36912 Acquisition of [ESRO-SN-71]

Accuracy of wind data obtained by tracking wind sensors simultaneously with two FPS-16 radars [NASA-TM-X-53752] 24 p4252 N68-38053

Development of experimental linear swept frequency modulator for aircraft satellite communications [NASA-CR-93288] 08 p1146 N68-17615

ructed with angic

Radar ambiguity functions of and angle rate and range and ran [RAE-TR-67266] ge rate as variables 12 ±1898 N68-22280 recasting of atmos Navy weather service for

[NAVAIR-50-1P-1] 22 p3835 N68-35439 Redar reflectivity analysis and lunar magnetic aterials studies based on Surveyor 7 data 24 p4343 N68-38252

Radar clutter research program for army air defense

(CAL-UB-2508-E-1) 24 p4230 N68-38475

RADARSCOPES
NT PLAN POSITION INDICATORS

Electric relay and delay circuit for RBDE-4 quick (RD-67-63) 03 p0368 N68-12391

Performance evaluations of ring shaped eweep-line, and wedge shaped sonar displays [TR-750-9] 05 p0631 N68-14632

Design study for land mass transparency recording system using laser techniques for radar display simula-

[AMRL-TR-67-58] 09 p1339 N68-18297 Design and field evaluation data on improved brightness radar display equipment for airport tower installation //RRTE-1/ (SRDS-RD-68-28) 20 p3530 N68-33587

20 p3530 N68-33587

Microwave methods compared for radial density dis-tribution measurements of plasma 01 p0118 N68-10613

Ephemerides catalog of radial distribution curves for binary stars with continuous orbits

01 p0135 N68-10659 Radial and axial concentration on distributions of self

(ARL-67-0216) 11 p1805 N68-21608 on for amorphous elec-us alloy Radial distribution func-trodeposited sickel-phospho [TR-17]

alloy 18 p3092 N68-30426 (NASA-CR-54532) flow computer program 20 p3393 N68-33230

Computer program for on calculations in cylindrical ge [ORNL-TM-1942] 23 p4101 N68-36735

24 p4341 N68-37774

Axial flow compressor design computer programs is-proporating radial distribution of total pressure and ow path or axial velocity ratio flow path or axial vel (NASA-CR-54531) 24 p4194 N68-39057

RADIAL FLOW	more menda.	
Experimental performance flow turbine with exit diffuser	evaluation of radial in-	
[NASA-TM-X-1480]	03 p0302 N68-11920	
Friction and ventilation I	omes in radial turbine	
wheels of helicopter and trans tions	CITED AND THE CONTRACTOR OF TH	
	04 p0568 N68-13850	
Operating characteristics of and radial microturbines	of partial pressure axial	
	04 p0569 N68-13853	
Calculating leakage losses is axial turbine	end clearance of radial-	
A THINK HOUSE IN THE SAME OF	04 p0569 N68-13854	
Optimum design geometry fi bine performance efficiency [NASA-TN-D-4384]	or high radial inflow tur-	
[NASA-TN-D-4384]	06 p0770 N68-15943	
Flow visualization and conta wall-jet vortex tube with radia superimposed axial flows [NASA-CR-992]	inment tests in directed- i outflow and moderate	
[NASA-CR-992]	07 p1033 N68-17131	
High temperature radial g	ps turbine design and	
(PWA-FR-2631A)	09 p1414 N68-18714	
Radial flow turbines as re	lated to Brayton cycle	
space power systems [NASA-TM-X-52298]	16 p2592 N68-27465	
Geometric problems and co sociated with radially loaded thermalization and heterogene perature test reactor core [LA-DC-9426]	reactor - calculation of ity effects in high tem-	
[LA-DC-9426]	16 p2710 N68-28298	
Visual observations to find coefficients through radial blad peller	flow distribution and ed centrifugal pump im-	
[NASA-TN-D-4282]	17 µ2872 N68-28842	
Rotor aerodynamics and development of high temperatu [PWA-FR-2806]	materials testings in re radial turbine 18 p3004 N68-30014	
Three dimensional steady rad Newtonian gas from sonic nozzi using Navier-Stokes equation	ial expansion of viscous	
[NASA-CR-95883]	18 p3063 N68-30258	
Stresses and loads on radial a cylindrical shells to study reinfo		
NASA-CR-95896)	18 p3181 N68-30578	
Radial acceptance of 10 MeV		
for	19 p3259 N68-31609	
High temperature radial gas t		
ment	ATTENDED TO SERVICE	
[PWA-FR-2936]	24 p4336 N68-38078	
Supersonic jet noise generation flow impinging on first shock ceric converging main jet flow	il region of axisymmet-	
[HM3M-CK-00100]	24 p4201 N68-38088	- 1
RADIANCE	- Minh Minh	-
Radiance and polarization of from haze and clouds	The same of the trade of the same of	1
[NASA-CR-91139]	03 p0338 N68-12030	j
Calculations of reflected and for earth atmosphere by Monte ([NASA-CR-91228]	transmitted radiance Carlo method 03 n0339 N68-12064	-
Radiance, radiant power, and	radiant energy of alu-	
minized grenade glow clouds a from 100 to 200 km	t twilight and at night	
[WRE-HSA-23]	US p1100 NOS-17243	1
Spectral radiance measurement	ots of horizon sky	RA

0 N68-15943 sts in directed- and moderate	XXXXX
3 N68-17131 e design and	N N
4 N68-18714 Brayton cycle	flu (Ji
2 N68-27465 I methods as- calculation of in high tem-	tio
6 N68-28298 tribution and agal pump im-	[N
2 N68-28842 testings in urbine	903
testings in urbine 4 N68-30014 ion of viscous uum analyzed	for [N
3 N68-30258 spherical and of openings in	86 (N.
N68-30578 sear accelera-	spe
N68-31609 gine develop-	bel
5 N68-38078 al annular jet if axisymmet-	solv
N68-38088	met [T-
cattered light	serv
ted radiance lod N68-12064	[Af
nergy of alu- and at night	L

nts of horizon sky 08 p1169 N68-17659

08 p1174 N68-18089

08 pl259 N68-18093

ents for estimating diur-

08 p1174 N68-18104

10 p1525 N68-20463

s of carbon dioxide ab-

on and radiance calculations for solid

Band models for calculating spectral radiances from homogeneous gases

Stratospheric and mesospheric temperature profiles om satellite radiance measurements at limb of earth 08 p1174 N68-18103

Meteoritic radiance and ionization observations in

sorption lines between 12 and 18 microns [TR-08183-1-T] 19 p3230 N68-31805

Radiant cooling systems with conical spikes (NASA-TT-F-11499) 07 p1097 N68-16813

Thermal testing of two stage radiant cooler for day-ight high resolution infrared radiometer NASA-CR-93291] 08 p1177 N68-17435 night high resolution [NASA-CR-93291] Integrating two-stage radiant cooler into breadboard model of day-night radiometer [NASA-CR-94603] 13 p2068 N68-23609 Design, thermal analysis, testing, and breadboard in-tegration of two-stage radiant cooler for high resolution [NASA-CR-94600] 13 p2068 N68-23710 RADIANT ENERGY U RADIATION NT ELECTRON FLUX DENSITY NT ERRADIANCE LUMINANCE LUMINOUS INTENSITY
NEUTRON FLUX DENSITY
PARTICLE FLUX DENSITY
PROTON FLUX DENSITY
RADIANCE SOLAR CONSTANT SOLAR FLUX DENSITY Calculation method for stray accelerator radiation xes of varying energies NR-P9-3402] 01 p0112 N68-10751 Synchrotron radiation intensity in inhomogeneous n charged ring NR-P9-3415-21 01 p0113 N68-10752 Equations, computer techniques, and model calcula-ms of long wave radiative transfer in planetary atspheres ASA-CR-92998] 07 p1080 N68-16598 Tables of profiles on mean intensity photospheric liation in H alpha line for moving solar prominence 07 p1076 N68-16636 Quantum efficiency of radiant energy photons in niconductors for converting radiant energy solar, clear, or fossil fuels to electric energy 08 p1225 N68-17827 Spectroscopic analysis of gas cap radiation intensity simulated Mars atmospheric probes ASA-TM-X-57250] 09 p1429 N68-19470 lux density mea megahertz frequency ASA-CR-94112] 11 p1784 N68-21464 Mechanism for origin of radiation peak in atomic ctral lines of nonequilibrium gas behind shock 12 p1861 N68-22249 trogen radiation peaks in nonequilibrium domain nd shock fronts 12 p1861 N68-22255 pustions with lambda as independent variable for ing problems of multiple light scattering 12 p1917 N68-22478 tegional distribution of radiation reflected from ural surfaces based on angular distribution measurents of intensity R-566] 13 p2061 N68-23760 adio brightness temperature and sunspot size ob-ations statistically analyzed for solar flare predic-PCRL-67-0670) 13 p2147 N68-23858 rtificial satellite recorder for measuring space-time ributions of cosmic ray intensity in energy range in-nced by earths magnetic field 23 p4060 N68-36143 unik 10 scintillation spectromete rometer measurements of ar surface 23 p4166 N68-36354 RADIANT HEATING Stationary motion of vapors from solids heated by radiation in presence of lateral spreading 02 p0280 N68-11027 Error analysis, theory, and design of transient calorimeter for convective and radiant heat flux mea-(NOLTR-68-35) 18 p3072 N68-29750 Nonstationary radiant heating of cylindrical body 18 p3190 N68-30654 Heating calculations for fission product gamma ray absorption in graphite moderators [BNWL-625] 23 p4104 N68-37170 RADIATION Radiation scattering by small particles and study of merstellar and interplanetary grains 16 p2763 N68-27506 RADIATION ABSORPTION

NT ATMOSPHERIC ATTENUATION

NT ELECTROMAGNETIC ABSORPTION

NT MOLECULAR ABSORPTION

NT PHOTOABSORPTION

NT POLAR CAP ABSORPTION

NT SELF ABSORPTION

```
SUBJECT INDEX
      NT X RAY ABSORPTION
      Photoelectric effect, Compton effect, and pair
production responsible for radiation absorption in
solids
      [R67SD55]
                                                     01 p0122 N68-10159
         Interaction of coherent light with solids and with tur-
       bulent atmospheres
(AFOSR-67-2477)
                                                    03 p0383 N68-12094
                                               n emission and absorption
         Measurement of radio
      by argon plasma
[ARL-67-0157]
                                                    03 p0401 N68-12377
         Shield analysis of Los Alamos molten plutonium
      [LA-DC-8538]
                                                    03 p0378 N68-12636
      Absorption analysis for ul
and propanol under pressure
[TR-4]
                               alysis for ultrasonic pulses in water
                                                    04 p0543 N68-12928
     Stress waves in temperature dependent viscoelastic half space subjected to impulsive electromagnetic radiation [AFOSR-67-2453] 04 p0586 N68-13043
       Low energy alpha particles effectiveness in produc-
ing thermoluminescence for equal absorbed doses in
      Gamma spectrum measurements for calculating dosage, and energy absorption factors of radiation thielding
                                                    04 p0503 N68-13726
                                                    06 p0883 N68-15049
      Atmospheric penetration of ultraviolet radiation with wavelengths of 100 A to 2,000 A calculated from rocket flight density data
                                                    06 p0842 N68-15968
        Albedo approximation model (
pefficients of fallout shelter geo
                                              del for radiation reflection
    coefficients of [AD-663570]
                                                   08 p1216 N68-18201
    Radiation absorption in plants,
radio nuclide cycle in terrestrial eco
                                                     ts, and animals, and
                                                    scology
10 p1473 N68-19654
     Theoretical radiation physics, and radiation effects in liquids, solids, and tissues
                                                   10 p1563 N68-19655
                   on absorption characteristics in visible spec-
       rum studied in argon plasm
                                                   10 p1573 N68-19808
        Boltzmann equation to describe cyclotron resonance
    absorption
[AFCRL-67-0497]
                                                   11 p1759 N68-20760
    Absorption factors for gamma energies calculated for heavy grades of reinforced concrete mixtures [JUL-509-ST] 11 p1757 N68-21398
    Radiation equilibrium in atn
Einstein absorption coefficient
[NASA-TN-D-4479]
                                                   sosphere with constant
                                                   12 p1870 N68-22861
    Gamma ray absorption technique for measuring tex-
ture of porous solids using mercury porosimeter
[CEA-R-3204] 12 p1879 N68-22929
    Quantitative analysis of solar radiation absorption by
vertebrate tissue using spectrophotometric technique
13 p1997 N68-23083
                                                 or absorption cross sec-
       Method to evaluate mo
               od to evaluate more and decay rates 14 p2288 N68-24437
      Relative probabilities for formation of isomeric
lates during radiation capture of thermal neutrons
FEI-79] 14 p2313 N68-25136
    Estimated radio
ing orbital flight
(BNWL-531-1)
                                  clide production in astronaut dur-
                                                   14 p2202 N68-25263
    Absorption and scattering of thermal radiation by
cloud of small particles
                                                   18 p3128 N68-29758
      Thermistor belometer radia orption measurements for argo
                                                  tion emission and ab-
n plasmas
22 p3942 N68-35227
   Microwave absorption by stratospheric ozone, and detection of 37.836 and 30.056 gc/sec ozone lines 23 p4052 N68-36048
       Effect of ionizing particles on photomultiplier
   [ESRO-SM-72]
                                          . 23 p3995 N68-37035
RADIATION BELTS

NT ARTIFICIAL RADIATION BELTS

NT INNER RADIATION BELT

NT OUTER RADIATION BELT

NT PROTON BELTS
     Geomagnetically trapped charged particles and elec-
romagnetic fields
   [AD-661316]
                                                 03 p0412 N68-12160
```

Electromagnetic energies of convection currents, and solar cell shielding requirements against radiation

04 p0598 N68-12921

(PB-175806)

5

P

P

mi (U

C

Hit tio

rad [N

[N

min

trap cou [N/

Alli [IS/

radi

D

(NA

RADL

2222

Spectral radiance me [NRL-6615]

Spectral emission and rocket propellant plumes

mperature variation at strat

Horizon radio

earth atmosphere [NASA-CR-93816]

RADIANT COOLING

Frequencies and im

1150 tur-

094

tion

377

636

928

astic

043

726

tion

040

968

201

and

654

ects

655

pec-

808

760

ated

398

dant

861

tex-

929

n by ue 1083

1437

serio

136

dur-

263

n by

758

ab

5227

and

5048

olier

7035

elec-

2160

ents, ation

2921

RADIATION COUNTERS
NT CERENKOV COUNTERS

ermal neutron flu

om detector for stu

m 234 and 235

lear expl

Computer analysis of solar cell shielding require-sents against radiation belts 04 p0447 N68-12923 High altitude characteristics of Van Allen radiation belt and effects on Gemini 10 and Gemini 11 space flights 05 p0734 N68-14952 Computerized radiation load simulation for semicon-ductor device exposed to protons and electrons in radiation bell [BMWF-FB-W-67-08] 06 p0814 N68-15215 Cinematographic display of observations of low nergy proton and electron apectra in terrestrial mag-INASA-CR-918711 06 p0905 N68-15232 Magnetospheric radiation belt and tail plasma sheet [NASA-CR-92565] 06 p0905 N68-15296 Satellite and rocket measurements of galactic counic rays, solar plasms, solar flare particles, and radiation belts and surroral particles ESRO-SP-191 10 p1588 N68-20272 Literature survey on Van Allen radiation belts [CEA-BIB-103] 11 p1779 N68-21177 Literature survey on Soviet bloc research in upper tmosphere and space 11 p1690 N68-21281 Proposals for environment modification experiments space to determine dynamics of field, particle, and plasma processes in mag NASA-CR-943301 12 p1867 N68-22402 Prelaunch press kit on South Atlantic Anomaly Probe /SAAP/ for evaluating radiation environment [NASA NEWS RELEASE-68-97K] 14 p2350 N68-24722 Computer program for calculating proton and elected radiation hazards for satellite orbit in Van Aller belt IRMWF-FB-W-68-18] 14 p2339 N68-24808 Flux density of radiation belts from Explorer 4 satel-14 p2340 N68-25424 Rocket measurements of protons in inner radiation belt 15 p2549 N68-25887 Dosimetric measurements of depth dose rate for charged particle environment in inner Van Allen belt 15 p2551 N68-26134 Stability of Van Allen belt in outer trapping zone painst electrostatic low frequency perturbations in (UCRL-18121) 17 p2877 N68-28993 Subdivision of earth atmosphere as function of al-titude, temperature, density, and ionization, and geomagnetism CERTS-NT-05-4] 18 p3162 N68-29754 Electrostatic analysis of electron diffusion data from Hitch-Hiker I satellite using computer simulated radia-tion belt model 19 p3372 N68-31074 [ASE-1887] ents on magnetic fields and Venera 4 meas [NASA-CR-96118] 19 p3365 N68-31520 Electron diffusion and intensity variations in outer radiation belt [NASA-CR-96125] 19 p3361 N68-31632 Self consistent calculation sing two dimensional model s of earth radiation belts 21 p3761 N68-33855 Temporal variations of 100 keV to 1700 keV trapped protons from data recorded by scintillation counter on Explorer 26- Jan. 29, 1965 - June 29, 1965 [NASA-TM-X-63320] 21 p3761 N68-34059 Rocket-borne silicon detector telescope for Van [ISAS-426, V. 33, NO. 8] 22 p3931 N68-35625

Electron space probes of energy spectra in earth radiation belts 24 p4338 N68-37456 Diffusion model for trapped magnetospheric radia-tion with electric field convection [NASA-TM-X-63374] 24 p4339 N68-37753 ELECTRON COUNTERS
GEIGER COUNTERS
NEUTRON COUNTERS
NEUTRON SPECTROMETERS
PARTICLE TELESCOPES PROPORTIONAL COUNTERS QUANTUM COUNTERS SCINTILLATION COUNTERS SPARK CHAMBERS [SLAC-TRANS-84]

Balloon-borne equipment consisting of gamma ray telescope with array of particle detectors [NASA-CR-90083] 01 p0063 N68-10348 Research projects on low level counting, lifetime and decay, inelastic scattering, and charge exchange reactions of elementary particles [COO-1749-5] 24 p4313 N68-37883 Superconducting thin films of tin and indium used in nuclear particle detectors
[Al-67-74] 01 p0064 N68-10387 24 p4315 N68-37885 24 p4257 N68-37962 Pulse division circuit for u se with position sensitive detectors of particles (BMWF-FBK-67-61) RADIATION DETECTORS 01 p0066 N68-10791 NT DOSIMETERS
NT SILICON RADIATION DETECTORS
NT THRESHOLD DETECTORS (DOSIMETERS) Superconducting this fil [NDL-TR-93] clear particle detector 02 p0209 N68-11117 Trapped radiation detector developed for Mariner 5 Design and testing of raggedized, thin window pro-ortional counter tube for detecting X rays in light ele (NASA-CR-89924) 01 p0137 N68-10080 [NASA-CR-90428] 02 p0212 N68-11367 of solar cosmic rays and wing solar flore activity 01 p0130 N68-10084 orer 12 observ Analog computer for calculating momentum of muons of counic rays in high energy spectrograph [BMWF-FBK-67-31] 03 p0345 N68-12711 energetic storm particle [NASA-TM-X-55963] Position-sensitive solid state detector for measuring properties of double-focusing magnetic spectrometer [ANU-P/387] [INR-785/XIX/D] 01 p0102 N68-10166 Uniform local respon INASA-TM-X-630201 detectors by scanning 01 p0098 N&8-10197 06 p0846 N68-15660 16,384 channel pulse height analyzer for coincidence gamma ray spectrometry in radiochemical and IBNL-116451 01 p0123 N68-10468 nuclear physics research [USNRDL-TR-67-135] Activated cobalt detect 06 p0846 N68-15726 Counting schemes for u clear data acquisition on (JUL-495-RX) 01 p0115 N68-10915 [K-DP-2593] plers, fire and smoke de-ard control 02 p0209 N68-11061 07 p0969 N68-16464 Ion temperature determination by variations of satel-lite induced ion trap currents - Electron 2 satellite mea-surements of ion temperatures in ionosphere [NASA-CR-93006] 07 p1082 N68-17021 High resolution surface shi based on alpha and beta spectro [RT/EL/67/1] elding silicon detector ores in ionosphere 07 p1082 N68-17021 02 p0211 N68-11301 Proton-induced reactions on light and medi-eight nuclei, and nuclear reactions effect on effici-Compendium of optical radiation detectors in elec-tromagnetic spectrum between 0.01 and 1000 microns [NMC-MP-67-13] 02 p0213 N68-11484 cy of permanual [USC-136-132] lectors of protons 12 p1927 N68-22404 Electronic device for measuring polarization arameter in pion, proton, and neutron charge exchange reaction on polarized proton target CEA-R-3377 12 p1878 N68-22877 Annular lithium drifted gen dying nuclear reaction game (NASA-CR-90545) 02 p0213 N68-11787 (CEA-R-3357) Electronic counter and particle identification proto-type telescope for S-16 particle asymmetry experiment, and flight unit and telemetry requirements for ad-vanced Apollo missions [NASA-CR-92120] 13 p2069 N68-23790 02 p0263 N68-11830 Diffusion welding gamma ray detectors [UCRL-17317] Gas ionization counter relability, sensitivity and energy levels, calculated by computer program [CEA-R-3190] 14 p2314 N68-25162 04 p0555 N68-12812 corrected results from re tabulated 04 p0570 N68-13319 Uncorrected and b Canadian cosmic ray sta [AECL-2785] elation formulas and mes-or apparatus on ytterbium Neutron and reactor physics, radiation detectors and shielding, critical mass, and associated computer pro-grams and calculating methods (ORNL-4134) 05 p0703 Non-13952 172 (NASA-TT-F-11320) 15 p2517 N68-26177 05 p0703 N68-13952 Chemical separation an neasuring neptunium act ion and coincidence methods for m activity in irradiated uranium on detectors and com [KR-124] 16 p2727 N68-28015 05 p0656 N68-13958 Anticoincidence shielded gérmanium-lithium gamma ray spectrometer for high sensitivity counting [BNWL-SA-1522] 16 p2665 N68-28123 Electronic circuit for detection of R-wave of elec-ocardiac signal for control of time cycle of heart ansist pumps [NASA-TM-X-1489] Gamma-neutron radiation monitoring system for vicinity of Van de Graaff accelerator at Oak Ridge Na-tional Laboratory [ORNL-TM-2137] 17 p2915 N68-28941 05 p0613 N68-13999 Experimental regen neutron flux detectors [BNWL-430] 05 p0692 N68-14181 Operating characteristics and performance of alpha, eta-samma single chassis survey instrument ARH-488] 19 p3279 N68-31570 Wide-range counting-Camp lling neutron flux de-[ARH-488] tection system 05 p0660 N68-14241 Users guide to chem radioactivity standards [NP-17502] emical and counting problems for Fourteen papers on app electronics instrumentation [BNWL-481, V. 2, PT. 4] ed physics and electronics 20 p3429 N68-33012 Coincidence detection of pion production in elec-trons scattered from liquid hydrogen target 21 p3733 N68-33651 calibration of electro-ms neutral particles 05 p066Z N68-14379 Sensitive calorimeter for measuring power output of mail alpha and beta particle sources BNWL-590] 21 p3692 N68-34306 static analyzer for dete [NASA-TT-F-11458] mail alpha an [BNWL-590] in-core and out-of-tectors for pressuring (BAW-3647-5) Pulse division circuit for analyzing two input signals from radiation counters
[ANL-TRANS-622] 21 p3695 N68-34731 05 possi N68-14494 21 p3695 N68-34731 Helicopter-be ground radiatio [NP-16766] Method for measuring galactic gamma rays and elec-05 p0653 N68-14706 HEP1-5621 21 p3763 N68-34764 instrument deve or safety, fuel o Pulse division circuit for use with positron sensitive ments, and and [IDO-17234] [ANL-TRANS-623] .22 p3848 N68-35482 Particle separation with two and three cavity RF separators at CERN 2 m hydrogen bubble chamber [CERN-68-29] 23 p4113 N68-36171 Observed absence of energetic electrons and protons near Versus based on Mariner space probe data-15171 (REPT-67-66) 06 p0904 MSE-15171 Electronic, mechanical, and thermal design of X ray Solid state detector for detection of secondary elec-

07 m1064 1968-16114

[NASA-CR-92699]

24 p4293 N68-37509

Development and testing of fast, 90 deg helium 3 07 p0994 N68-16123 Design and performance of proportional detectors for measuring absorbed dose of gamma radiation and [BNWL-SA-1364] 07 p0998 N68-16739 Pulse height and p sounding rocket flight [NASA-CR-92683] se data telessetered from tional neutron detector 07 p1086 N68-16913 time of 4 pi gas ionization Reduction of natu eller regime 07 p0999 N68-16923 ent of pe ilation interactions lithium drifted gern NRDL-TR-67-127) 07 p1052 N68-17016 High-resolution lithium detectors for measure hed silicon and germani-ne widths of 2p-1s transitions in low-Z pionic [NASA-CR-93178] 08 p1213 N68-17618 onized particles 08 pt | 78 N68-17628 Semiconductor de [CERTS-NT-02-5] tatively me 09 p1416 N68-18900 Annotated bibliography of semiconductor detector techniques for 1963 to 1967
[EUR-3630.E] 09 p1343 N68-18963 Principles of neutron actival (KN-68-71/R/) 09 p1343 N68-19028 ors for measuring charged contents in matter 09 p1393 N68-19032 Cellulose nitrate d particles and lithium-boron coe [JINR-P13-3585] Design of fixed radiation system for nuclear reactor sites [DUN-SA-50] nitoring telemetry 09 p1343 N68-19049 Energy levels of nuclei, formalisms for nuclear reac-ons and models, isotopic targets, and lithium drifted [COO-535-571] 09 p1394 N68-19056 d optical properties of metal blacks, Preparation, and and carbon blacks 10 p1558 N68-19784 ron flux detector 10 p1530 N68-19971 Detection and localis sources outside of earth at [CEA-R-3177] of gamma radiation 10 p1589 N68-20526 Knockout mechanish beta decay and other reacti resourcements, and technic lear binding energies, , energy levels, lifetime for fabricating Ge/Li/ (ORO-3624-1) 11 p1754 N68-21144 Fabrication and use of p drifted germanium detectors {UJV-1873} nar and coaxial lithium 11 p1699 N68-21447 Incoming short wave, total incoming, and net total idiation measured continuously near Point Barrow, Alaska in 1964 [SR-11] 11 p1691 N68-21475 History on research and development of lead salt cells for detection of infrared radiation [REPT.-8600-3-J] 11 p1775 N68-21664 s control systems 12 p1875 N68-22566 Radiation detector [UCRL-50007-67-2] Flux detector react parameters of nuclear [AERE-M-1870] e data analysis for neutron flux 12 p1906 N68-22569 Low noise preamplifier with germanium junction old effect transistor for semiconductor radiation de-12 p1850 N68-22574 (UCRL-18005) esearch activities in area of instru-eactors, synchrotrons, radiation n detectors medicine and ra [BNL-50057] 12 p1931 N68-22598 al counters for measuring (CEA-R-3403) 12 p1875 N68-22612 range, and stopping power of charged on or germanium detectors Energy loss, ra detectors 12 p1876 N68-22678 CEA-R-3371] Zonal sensitivity of large area pyroelectric radiation [RRE-TRANS-172] 12 p1876 N68-22693 seasurement of intense AECL-3023) 12 p1877 N68-22744 Application of dosimetry for measurement and analysis of radiation effects on small objects subjected to

n junction detectors for nuclear radiation ICEA-R-32511 12 p1879 N68-22986 Radiation detectors in light vehicles for nuclear safety control at research facility [CEA-R-3324] 12 p1880 N68-23020 (AFWL-TR-68-22) 13 p2066 N68-23127 erter for time measurements (IBJ-847/LA/PL) 13 p2069 N68-23925 Pressurized beta scint measurement of radio nuclear facilities [BNL-12154] monitor for continuous noble gases around 14 p2257 N68-25049 Nuclear beta spectroscopy using solid state detectors 14 p2313 N68-25117 Neutron detectors for radi Ing areas (SZS-2/68) 14 p2257 N68-25134 n detectors for X ray spectra fluorescence ana [INR-820/II/PS] 14 p2258 N68-25254 Fabrication and perforactor detectors in tritic [NYO-3246-TA-1] 14 p2258 N68-25266 ros-B laser detector 15 p2477 N68-25735 Design and performa [NASA-TM-X-63222] Internal conversion coefficients, spectrometer calibration, radiation detectors, and gold isotope decay 15 p2535 N68-25994 Gamma probe analysis of radiation shielding for Apollo and Gemini spacecraft 15 p2553 N68-26150 tive and active elements of space to otry system for Apollo program 15 p2554 N68-26151 Calibrating, radiators, and photodiode, Compton, notomultiplier and logarithmic detectors in radiation rettor handbook detetor handboo [UCRL-50176] 15 p2471 N68-26824 Limitations of paired detects resolved gamma ray exposure flux densities [HDL-TM-68-1] tors used to measure tie re rates and fast neutro 16 p2659 N68-27048 Reentry shielding at radioactive isotopes wit [NASA-TM-X-57291] neasured by imbedded on dector 16 p2662 N68-27574 Ion detector with periodically interrupted positive ion beam [NASA-TM-X-60140] 16 p2663 N68-27911 Position sensit [CEA-BIB-102] nitive detectors for charged particles 16 p2664 N68-28019 Total absorption n/tithium/ gamma ray impton scatterings 16 p2664 N68-28111 (BNL-123321 Nuclear radiation [JEN-183-DF/I-56] 16 p2665 N68-28143 Gamma radia from Cygnus constella-16 p2770 N68-28184 Transmittance of thin films and photoionization of mes in selective detectors set for photons in ul-(NASA-CR-1096) 16 p2732 N68-28250 Proposed low signal radiation internal avalanche multiplicati (AERE-M-2025) on detector incorporating 16 p2666 N68-28296 Gas chromatography, radia mization chamber for gas analys NP-173551 tion detection, and 18 p3026 N68-30341 eter radiation detection system (NYO-3914-2) 18 p3076 N68-30349 Fixed angle scattering method for X ray crystal struc-ture analysis [REPT.-894/II/PS] 18 p3077 N68-30574 18 p3077 N68-30574 Radiation detection system for continuous monitor-ng of beta radioactivity in cooling water of nuclear 18 p3078 N68-30630 [AE-319] zed radio [NP-17356] 18 p3078 N68-30650 Special cryostats for lithium compensated germani-um detectors used in gamma ray spectroscopy [AE-320] [8 p3079 N68-30651

Fuel burnup and core power distribution found by amma radiation detection in fuel rods of experimental

18 p3119 N68-30701

SUBJECT INDEX Remote multispectral sensing of radiation charac-teristics of important agricultural features over widespread areas [NASA-CR-95889] 18 p3070 N68-30772 Nuclear physics resea radiation detector develo [AECL-3157] olid state studies, and 20 p3456 N68-32505 long wavelength coherent [TI-08-68-38] is and high speed, on detectors 20 p3477 N68-32527 ta radiation registering acintillations of gamma rays [INP-605/PL] 20 p3483 N68-33495 Detector systems for sir particle detection and 21 p3693 N68-34507 [BNL-12539] nt response of semicon-mion fragments 22 p3949 N68-35074 Pulse amplitude and transies ductor radiation detectors to fis Inherent statistical prob signals from semiconducto in deriving amplifying lation detectors 22 p3915 N68-35119 Fabrication and development of annular lithium drifted germanium detector for studying nuclear reac-tion gamma rays [NASA-CR-1[38] 22 p3875 N68-35152 22 p3875 N68-35152 data bulletin featuring Geophysics and space rospace environmental co [AD-672978] 22 p3872 N68-35704 ffectiveness of sodium salicylate-coated photomul-er as radiation detector in extreme ultraviolet re-23 p4031 N68-36330 cturing activation detectors for (CEA-R-3532) 23 p4064 N68-37040 Detection of alpha and beta particles, gamma rays, and infrared radiation with p-n junctions [CEA-BIB-97] 23 p4157 N68-37176 Balloon-borne alti containing semiconductor (CEA-R-3516) 23 p4065 N68-37201 Ratio of gamma heating per gram of tungsten to gamma heating per gram of water for thin tungsten detector in water shield [NASA-TM-X-1680] 23 p4104 N68-37260 Reactor core therm semiconductor diodes [CEA-R-3304] ron flux estimation using 24 p4296 N68-37889 RADIATION DISTRIBUTION
NT ANTENNA RADIATION PATTERNS
NT DIFFRACTION PATTERNS
NT SIDELORES Radial distribution analysis for radiation parameters in axially symmetric gaseous medium with self absorp-02 p0247 N68-11559 Horizon infrared radiance profiles from Scanner pro-NASA-TM-X-1483 03 p0367 N68-11949 Functional equations for inite inhomogeneous, plan cattered atmospheres r internal radiation fields in ne parallel and isotropically 05 p0733 N68-14723 Approximation method for calculating radiation dif-fusion in medium with elongated scattering matrix [NASA-CR-92547] 06 p0886 N68-15877 Radiation mapping an radioisotoge thermoelect [NASA-CR-93919] nalysis for incommendation of the comments of is for landing modules with Electromagnetism in moving, conducting media -olution to problems involving static and radiation ields of static charges, and radiation fields of harmonic (NASA-CR-1025) 11 p1747 N68-21444 Environmental radiation atomic gaseous diffusion (GAT-533) in and concentration levels of 14 p2249 N68-25106 Balloon sounding data of primary cosmic ray electron component evaluated for long term time variations 16 p2753 N68-27552 [NASA-CR-85740] [NASA-C.R-527mg]
Mathematical model for buffle width effects on beam patterns of sonar transducer arrays.
20 p3476 N68-32320 Resonance scattering of radiation by interacting COO-1112-162] 20 p3544 N68-32782 Radiation patterns for electric dipole in warm anisotropic plasma 22 p3939 N68-34957 Electrical impedance and radiation distributions of circular waveguide by integral transformation [NASA-TN-D-4752] 22 p3836 N68-35537

SUB

P

and [N/

C

dos

duc with sure [Ah

C

F

shie (OR

mintion [AD

G for c

Di latio

IUC

to m

(SC

Le

phos

Ea interi rays

(UCI

RADI

CEA-R-33761

12 p1942 N68-22964

772

and

103

ed.

27

ing

195

07

74

10

52

04

ul-

40

76

01

10 le-

ŧQ.

19

23

f.

17

12

4

2

2

0

n by universal radiation field Photomeson production and effects on high energy (NASA-TM-X-63353) c rays 22 p3956 N68-35633 PADIATION DOSAGE

Contribution of secondary gamma rays to radiation dosage produced by charged particles in space [NASA-CR-90052] 01 p0102 N68-10152 tors for measurement of factor in mixed neutron

(INR-785/XIX/D) 01 p0102 N68-10166

hip for threshold lesions in-arbon dioxide laser radiation of power density and expowith vary sure time [AMRL-732] 01 p0010 N68-10273

calculated and measured ses in tungsten watermoderated critical as (NASA-TN-D-4223)

01 p0089 N68-10291 estribution, dose equivalent, and ess of 14 MeV neutron generator 01 p0110 N68-10595 Flux density distri ORNL-TR-17571

olds for rabbits were deter-binations of thermal radia-01 p0013 N68-10683

Gamma ray trans for cobalt 60 isotrop (ORNL-TR-1649) 01 p0114 N68-10836

Dosimetry facility at Nat tion in Rome al Nuclear Energy Instal-[RT/PROT/67/12] 01 p0048 N68-10990

osimeters 03 p0309 N68-12688

Food and air moving the to man, and calculation on nitude for SNAP 19 and 57 [SC-CR-66-2144] 04 p0538 N68-13082

ne assessment of radia-lm dosimeters 04 p0508 N68-13131 ccuracies atta tion douge to pers

of absorbed dose by lithium at dosimeters for radiation

04 p0512 N68-13713 Lithium fluoride thermoluminescent dosimeter mea surements of exit doses for lung and pharynx radiation treatments

04 p0456 N68-13714

in vivo measurements of radiation dose transmission through bone and lung

04 p0457 N68-13715 rmoluminescent dosimeters for nts in high energy charged parti-

04 p0457 N68-13718 Low energy alpha particles effectiveness in produc-g thermoluminescence for equal absorbed doses in

04 p0503 N68-13726

n, and permissible oc-

04 p0458 N68-13783 nt distribution in ing from broad-beam setermined by Monte

04 p0458 N68-13785

04 p0458 N68-13786

calculations for proton ided man model 04 p0459 N68-13788

hip modifying factors to and cancer induc-04 p0459 N68-13789

ects exhibited by man from trating X rays and gamma

04 p0459 N68-13790 for quantifying energy call lethality caused by

04 p0459 N68-13792 05 p0621 N68-14230 Fortran computer programs tion exposure data on film badge [CERN-67-28] for interpreting radio-es worn by personnel 05 ±0634 N68-14753

Plastic anche owder for su lithium fluoride [AEEW-R-497] 06 p0779 N68-15827

Computer program for a on spacecraft in vacuum ter [ESRO-TM-11] mper 07 p0982 N68-16555

Energetic space radiation on measured for radiation

[NASA-TN-D-4404] 07 p1077 N68-16837 in Plum Brook HB-6 rs and ion clambers 07 p1032 N68-17022 Gamma ray exposured with a [NASA-TM-X-1490] MUNDO digital o

rogram for calculating nuclear reactor 09 p1376 N68-18944 accident rad (KFK-653) Theoretical radiation physics estrial ecology, radioactive a adiation measuring instrument

(ORNL-4168) 10 p1473 N68-19653 n energy spects

10 p1462 N68-19656 n body uptake of n in dosage, and stable

10 p1462 N68-19657

10 p1474 N68-19658

se rates estimated for exter-s of Black Arrow type satel-[RAE-TR-67206] 10 p1588 N68-20447

Biological effects of parti-dose in humans and anima responses, physical factors, h and radiation shielding [CONF-670305] accelerator radiation somatic and general hand safety measure 12 p1831 N68-21951

ts of high energy particle ac-mammal cells 12 p1821 N68-21952

gical parameters and 12 p1822 N68-21954

response to high energy

12 p1822 N68-21955 of high energy particle th and therapy 12 p1822 N68-21956

n beam irradiation 12 p1934 N68-22670 (LA-TR-66-8)

and protection ((CEA-R-3350) 12 p1830 N68-22876

gical effects following nurce in space 12 p1826 N68-22894 Dose prediction bursup of strontism [SC-CR-67-2792] isodose patterns, m nergy event frequer

[NASA-CR-94575] 13 p1999 N68-23396 ic acid synthesis in energy Radiation induced deprived L cells [NASA-CR-73220]

13 p2000 N68-23533 delculation in media of ference to beta particles

(AERE-R-5679) 13 p2001 N68-23801 Feasibility of be ectrometer with pulse circuit for radiation

[NASA-CR-92104] 13 p2072 N68-24341 FORTRAN program figures are direct beam and radiation alculating neutron and ux distributions due to stered from conical and GEMP-582)

High energy proto [NASA-TN-D-4528] 14 p2329 N68-24660

14 p2303 N68-24622

ace of radiatio Methality in space 14 p2199 N68-24876 sego from spatial

NASA-TM-X-60495) 14 p2318 N68-25431 High dose rate effect on pulsed electron accelerator [RISO-112] 15 p2405 N68-25832

15 m2550 N68-26128

15 m2551 N68-26133

ations 15 p2553 N68-26148

and bre te Carlo e 15 p2553 N68-26149

15 p2554 N68-26152 BNWL-SA-16441 16 p2616 N68-28301

17 p2817 N68-28500

(NASA-CR-61213) 17 p2892 N68-28785 d spectra as function of punetration study 17 p2934 N68-29053

IS-T-2161 17 p2845 N68-29354

processes, pow and radiation & [ORNL-4236]

17 p2907 N68-29530

CERTS-NT-01-6) 18 p3159 N68-29739 Irradiation effects on polyvinyl o 18 a3028 N68-30479

18 p3120 N68-30740

nce on response of NDL-TR-94) 19 p3276 N68-31235

seasure of X ray and Chro SAM-TR-67-1121

ne garanta dose ratte Computer program from plutonium dioxid (MLM-1460)

19 p3312 1468-32019

19 p3212 N68-32135

measure of radiation 21 p3636 N68-34400

22 p3813 N64-35831 ORNE-TM-225 CEA-8-32941

vey moter BP3 de (R.D/B/N-1107)

22 p3814 N68-35953

Dose distributions near isotropic point and plane beta sources in air and water for 37 muclides calculated from monoenersetic electron from distributions 23 p3999 N68-36760 Users manual for FORTRAN version of radiological safety analysis computer program [IDG-17261] 23 p4104 N68-37174 Turbulent transfer characteristics of radioiodine ef-fluents from air to grass 24 p4290 N68-38421 RADIATION EFFECTS NT RADIOLYSIS Electronic aspects of mecha tagenic action of ultraviolet rac (NASA-TT-F-11339) isms of lethal and mu-01 p0009 N68-10227 tion damage in silicon transistors 01 p0037 N68-10256 Neutron radiati (SC-RR-67-312) Computer program for predicting transient and per-anent radiation damage in semiconductor junction devices [SC-R-67-1158] 01 p0037 N68-19276 Effects of irradiation and corrosion on structural metallic materials used in advanced gas cooled nuclear power reactors with emphasis on heat exchanger tubing [TRG-1516/E/] 01 p0089 N68-10374 Neutron spectroscopy by foil activation in radiation [SC-DC-67-1572] 01 p0105 N68-10408 Stress rupture properties of Hastelloy tubing before 01 p0090 N68-10436 Steels with reduced se ivity to neutron embrittle-[EURAEC-1883] 01 p0093 N68-10483 on damage of electronic system INP-167721 01 p0038 N68-10622 Preparation of irradiated high temperature service nickel base alloys for determination of microstructural relation to physical properties, testing criteria, radia-tion effects and history [BNWL-SA-112] 01 p0077 N68-10698 diated high temperature service determination of microstructural 01 p0077 N68-10698 Reactor materials and effects of radiation environ-ment on physical properties 01 p0082 N68-10802 Radiation damage in nuclear reactor ceramic materi-01 p0082 N68-10803 Radiation induced changes in physical properties of eactor ceramic materials 01 p0082 N68-10804 Radiation effects on free nucleotides in yeast after gamma irradiation [SGAE-BL-22/1967] 01 p0014 N68-10993 Electron microscope study of radiation damage in beryllium oxide 02 p0224 N68-11323 Prediction of radiation damage to Apollo telescopic mount photographic film [NASA-TM-X-53666] 02 µ0212 N68-11469 Survey on biochemical effects from radiation (BARC-287) 03 p0305 N68-12151 Laser radiation effects on lead sulfide photoconduc-IRL-TN-1665) 03 p0405 N68-12155 Laser radiation effects on primate retina structure and functions IDOC.-12047-TDR1) 03 p0305 N68-12158 Radiation effects and neutron embrittlement in high strength and pressure vessel steels used as reactor structural materials (NRL-1808) 03 p0370 N68-12175 corpuscular radiation damagenery converters and silicon tra [REPT.-67] ge of photovoltaic solar mustors 03 p0389 N68-12279 Dose rate effects on yield-stress of vacuum melted iron by neutron irradiation (ORNL-P-2922) 03 p0351 N68-12304 Ultrasonic inspection of irradiated power reactor CVNA-288] 03 p0375 N68-12466 Measurement of metal crystal defects resulting from irradiation or quenching [BNL-11717] 03 p0352 N48-12551 cts on competition between lonizing radio 03 p0307 N68-12569 on of liquid ni and oxygen by irradiaoon with gamma rays or hig [ORNL-TR-1774]

o3 p0315 N68-12585

[AFCRL-67-0369]

06 p0893 N68-15369

tenitic steel [GEMP-544] review with bibli [SZS-12/1966/] brain [SZS-11/1966/] [NASA-CR-9[519] spacecraft thermal or [NASA-CR-61429] strong focusing prote [UCILL-17797] CU-3551-91 [REPT.-8] [BNL-TR-160] (BMI-1309) [AERE-R-5610] Project status for stu-muscle membranes and r [REPT.-3] Radiation effects on fast reacto tural refractory metals and heat re netically trapped radiat [NASA-TM-X-63082]

Electron paramagnetic resonance for determini radiative defects in impure crystalline quartz [FTD-HT-67-426] 06 p0894 N68-155. Betatron irradiation of oxygen compounds at 31 o6 p0894 N68-15522 03 p0315 N68-12586 Nuclear radiation effects on aluminum, titanium, vanadium, and tin alloys at cryogenic temperature [NASA-CR-72332] 06 p0854 N68-15572 Influence of nitrogen in iron and steel under fast neutron irradiation [EURAEC-1919] 03 p0353 N68-12634 Radiochemistry and radiation effects res [RRL-2310-194] X ray effects on helium-carbon d [DP-447] 06 n dioxide mixtures 06 p0791 N68-15699 03 p0317 N68-12672 Effects of age at time of exposure on persistent and are effects of fast neutron irradiation of male Sprague Observation of helium bubbles in irradiated and an-03 p0353 N68-12684 Dawley rats [USNRDL-TR-67-121] 06 p0774 N68-15710 Abnormal molecules in urine after irradiation, xenon filled thermion Electrical properties diodes in nuclear reactor [NASA-TN-D-4368] 03 p0307 N68-12786 06 p0890 N68-15747 lonizing radiation effects on bioelectric activity of Engineering handbook effects on plastics [MPS/INT-CO-66-25] 03 p0307 N68-12789 06 p0858 N68-15832 Wave spectra of gaseous molecules, electron spin resonance of inert gases, and radiation effects on RNA and DNA [APOSR-67-2668] 04 p0464 N68-12876 clear radiation damage Engineering handbook of materials - use of ela [MPS/INT-CO-66-27] 06 p0858 N68-15836 04 p0464 N68-12876 Weight loss, and op foils exposed to gamms [BMWF-FB-W-67-14] characteristics of plastic High energy radiation effects on optical properties of solids, and radiation-induced photoluminescence and 06 p0858 N68-15840 04 p0558 N68-13682 Cast iron softening (FTD-HT-23-549-67) ron irradiation 06 p0856 N68-15895 American Nuclear Society proceedings on radiation transport and biological effects [ANS-SD-4] 04 p0458 N68-13781 Radiation induced coupling effects between in-[IBM-67-521-10] 06 p0816 N68-15896 lonizing radiation effects on human cells in various mulated space flight environments Development of insulated gate metal oxide semicon-uctor devices with minimized response to gamma 04 p0459 N68-13791 Nuclear radiation and cryogenic temperature com-ined effects on mechanical properties of titanium and duminum alloys used in nuclear rocket construction NASA-CR-91519) 04 p0541 N68-13825 radiation [TRW-06415-6001-R000] 06 p0816 N68-16002 High energy gamma radiation properties of ceramic materials [JPRS-44148] n effects on dielectric Degradation model of solar radiation damage to opti-ll properties of zinc oxide pigments used for acceraft thermal control coatings 06 p0859 N68-16063 irradiation in ible water in leakage 05 p0753 N68-14171 in high temperature gas coo [EUR-2762.E, ANNEX] 06 p0877 N68-16073 Beam loss distribution and shielding experiments to evaluate radiation problems for proposed 200 GeV Defects in pure plating m produced by fast neutron n synchrotro [CU-3551-7] 07 p1007 N68-16315 05 p0711 N68-14406 Equipment installation and program to determine radiational halides, and their role in red experimental work in on induced defects in al-Brief account of field ion microscopic studies of netal radiation damage correlated with mechanical ombination processes 07 p1065 N68-16404 NYO-3842-11 05 p0677 N68-14596 Effect of gamma radiation in vacuum on chain scis-sion and cross linking in polymer films [NASA-TM-X-60858] 07 p1011 N68-16474 Radiation effects on thin film integrated circuit ele-07 p1011 N68-16474 05 p0639 N68-14677 Mathematical models of biological hazards from nuclear rocket engine flight failures [NUS-229, REV.] 07 p0944 N68-16564 Ozone and nitrogen oxide concentration in gamma irradiator operating chamber as potential health hazard 05 p0645 N68-14743 loading in space flights (SAM-TT-R-941-1267) High altitude characteristics of Van Allen radiation elt and effects on Gemini 10 and Gemini 11 space 07 p0945 N68-16595 Cellular radiobiological approach to acute radiation 05 p0734 N68-14952 syndrome [BNL-50064/T-465/] 07 p0945 N68-16622 Uranium and plutonium dioxides and nitrides, ceramic coatings, and irradiation effects on fuels and claddings Radiation hardening and embrittlement in pressure vessel steels, iron, and niobium [ORNL-4195] 07 p1008 N68-16649 06 p0871 N68-15011 onding manganese 53 ice strengths for reac-ium 52 and maganese Resonance energies, co excitation energies, and re tions between irradiated c Radiation and heat treatment effects on mechanical roperties of stainless steels for cladding applications in quid-metal-cooled fast reactors 06 p0871 N68-15013 [NP-17149] 07 n1049 N68-16734 Effects of irradiating uranium dioxide-cerium dioxide and uranium dioxide-zirconium dioxide fuels to high burnup Gamma ray effect on synthesis of organo-tin stabil-ters and catalysts for vinyl chloride plastics and 06 p0872 N68-15016 07 p0959 N68-16791 Irradiation damage and hardening in single crystal agnesium oxide after low neutron doses Fatigue crack propagation and nd fracture of pressure to simulate irradiation 06 p0857 N68-15109 INRL-MEMO-18221 Computerized radiation load simulation for semiconductor device exposed to protons and electrons in radiation belt [BMWF-FB-W-67-08] 06 p0814 N68-15215 07 p1031 N68-16817 Post irradiation data for experimental fuel assemblies in Halden boiling water reactor [AE-306] 07 p1031 N68-16875 Neutron radiation effects on tensile, creep, fatigue, impact, and hardness properties of reactor materials [NASA-CR-93128] 07 p1009 N68-16876 radiation damage in on of cell metabolism 06 p0772 N68-15290 es on ra ctor cladding and struc-t resistant alloys Reactivity effect of polyethylene in fast reactor [AE-305] 07 p1032 N68-16881 06 p0873 N68-15353 Irradiation strengtheni ng of body centered cubic Low energy proton damage effects on useful life of licon surface barrier detectors operated in geomag-07 p1009 N68-16892 [ORO-3612-4] d space flight factor effects on human cell cultures 07 p0946 N68-16895 Cosmic radia 06 p0844 N68-15364 lysogenic bacteria and he [FTD-HT-67-200] Ultrasonic attenuation of phonons in pure copper and aluminum to determine effects of gamma irradia-tion on electron-phonon interaction and phonon-dislo-Reduction of synoptics and dynamics data on 5 to 10 iovember 1963 temporal occurrence, including radiation measurements recorded by Tiros 7 satellite PB-175996]

se 53

SUB.

E

R: lurgi ture [NA

5522

ium.

572

699

710

onic

747

sage

832

age

836

840

895

in-

002

tric

063

age

073

ron

315

174

[NYO-3653-2] Relative displ tor types TRG-1561/D/J CEA-R-J289] Mechanical propering irradiation in mo [ORNL-TM-1997] [NASA-CR-93151] (CERTS-NT-02-1) Radiation effects (CERTS-NT-02-2) (NRL-MR-1833) Electrical measu ethods for radiati methods for radiati analysis in silicon an [AFCRL-67-0596] [AECL-2791]

(NASA-TN-D-4414) INASA-CR-931351 Recombination lun and hole-optical phor Effect of ultraviolet sted emission from co ium chloride crystals Excitation and nonequilibri subjected to large amounts of ra [LMSC-3-27-67-1, V. 4] Behavior of silicon sin junctions under fast neut [LYCEN-6756] Laser beam irra NYO-3578-7]

[ORNL-4168] Theoretical radiation ph in liquids, solids, and tissues

om 564 G. 595 522 ure 549 53 ac-

76 81 bic 92 on

10

Effect of lithium in producing recovery in solar cells irradiated with high energy particles [NASA-CR-93138] 07 p0940 N68-17065

07 p1033 N68-17095

Radiation effect test data for mechanical, and metal-rgical properties of structural alloys at low tempera-07 p1033 N68-17098

Radiation induced defe in copper and tungsten efect metal lattices 07 p1010 N68-17181 e rates in differing reac

07 p1034 N68-17184 Density measurement is and uranium carbide ormed on uranium diox-les irradiated at low tem-

07 p1013 N68-17212 lioy evaluated follow-08 p1201 N68-17246

ence of irradiated silicon, teraction in degenerate sil-08 p1222 N68-17349

Radiation effects on strain gage pressure transducers [TID-24144] 08 p1176 N68-17392 08 p1223 N68-17649

solar cells 08 p1120 N68-17650 tructural materials 08 p1206 N68-17918

08 p1226 N68-17994 um phenomena in air

09 p1446 N68-18307 and nuclear activation age studies and impurity aterials

09 p1406 N68-18424

gle crystals and surface barrier 09 p1407 N68-18608

Cerenkov light experiment [AFOSR-68-0179] st - Bolivian air shower joint 09 pl333 N68-18711

Mutagenic effects of chronic and acute gamma idiation on Dahlbominus female fecundity AECL-2791] 09 p1280 N68-18895

Mathematical simulation trameters during ionizing rad of Chi orella cultivation 09 p1282 N68-18915

Design of fixed radiatic system for nuclear reactor sit [DUN-SA-50] toring telemetry 09 p1343 N68-19049 n of solid particles for plasma

09 p1403 N68-19050

High temperature, and physical properties of cera thermionic systems [NASA-CR-71913] adiation field effects on nic insulators for puclear 09 p1378 N68-19131

Theoretical radiation physics, trial ecology, radioactive is liation measuring instruments adiation effects in ter-10 p1473 N68-19653 s, and radiation effects

10 p1563 N68-19655 Radiation attenuation, easurements in radiobic neutron energy spectrum

10 p1462 N68-19656 Human body uptake of radiation dosage, and stable

10 p1462 N68-19657 Radioactive aerosol physics, and measurements of internal radiation dosage

Nuclear radiation effects on polymer material properties in accelerator environment.

[AEC-TR-6920] 10 p1542 N68-19839

10 p1542 N68-19839 Optical absorption spectra of transient excited states ad charge carriers produced by radiolyses of styrese TR-0158/3250-20/-1]

10 p1486 N68-19997

ic effects on enzymes 10 p1463 N68-20022

d in radiation interruption of firmdiated medium to measure 10 pl464 N68-20098

Effects of fast neutron radiation on junction and metal oxide semiconductor field effect transiston (REFT-1) 10 p1506 N68-20274

Effect of whole body X immale rate exposed to low envir (USNRDL-TR-68-6) intion on resistance of mental temperature 10 p1469 N68-20451

ation effects on index of pefficients of Apollo window [NASA-CR-1019] 10 p1600 N68-20467

Effects of neutron irradiation on tensile properties of nnealed, cold worked, and quenched zirconium niobi-(BARC-300) 11 p1712 N68-20962

Dimensional measurements and mechanical proper-of irradiated pyrolytic graphite A-7100] 11 p1739 N68-20986

vacuum melted Hastelloy la [ORNL-TM-2043] mical properties of 11 p1714 N68-21094

eristics of fused silics are to reactor irradiation pulses INASA-CR-10311 11 p1740 N68-21124 um base dispersions Behavior of irre

CORNL-41991 11 p1741 N68-21188 Effect of electron and p in irradiation on n-p-n sil-

non translators II p1673 N68-21202 Radiation damage in low energy proton irradiated nick copper and gold foils and subsequent annealing

(NASA-TN-D-4452) 11 p1772 N68-21219 Postirradiation examination water, organic cooled reactor [AI-CE-76] of fuel bundles in heavy 11 p1741 N68-21229

lated ellicon and NCL-67-63R1 11 p1772 N68-21250

Effects of ruby laser irradia [REPT.-759] n on rat performance 11 p1636 N68-21392

Radiation effects in so solids, secondary electro-cation methods, and statis [AFCRL-68-0019] ds - atomic displacement in emission from solids, purifi-cal analysis of data 11 p1774 N68-21570 ima radiation i of myelopolesis in mor

FTD-MT-24-154-67] 11 p1637 N68-21628 Jonizing radiation et and gettering on radiati surface states [AFCRL-68-0045]

11 p1775 N68-21644 X irradiation effects and radio nuclide toxicity in bea-

UCD-472-114) 11 p1638 N68-21730 Nonlethal effects of suffected in performance

d low-level radiation as rhesus monkeys 11 p1638 N68-21799 Biological effects of particle dose in humans and animals responses, physical factors, heal and radiation shielding (CONF-670305) le accelerator radiation - somatic and geneticalth and safety measures

12 p1831 N68-21951 Somatic and genetic radiationals n effects in humans and

12 p1822 N68-21953 Point-kernel computation and experimental mea-irements of gamma heating effects during thermionic diode irradiation (NASA-TM-X-1539) 12 p1903 N68-22022

fluorinated and silicone Gamma radiation el 12 p1894 N68-22162 1001-M-1001 ts on cellsphane separatur in

Electron radiation el silver-zinc cells (NASA-TM-X-63170) 12 p1819 N68-22226 Data correlation on temperature transition change in ressure vessel steel with irradiation exposure based on

step function damage mode (WAPD-TM-471, ADD, 1) 12 p1904 N66-22328

Temperature and air effects ous chloroform and chloroform [COO-1116-6] n X radiolysis of gaseiolutions 12 p1835 N68-22367 X say irradi yield and photo (JPRS-45278) 12 p1929 N68-22534

IORNL-TM-20191 fects on ductility 12 p1889 N68-22563 ironment and ambi NASA-CR-620651 12 p1825 N66-22577

and acintillations in (UCRL-TRANS-10205) 12 p1933 N68-22663

Dynamic coll nealing of point [NP-TR-1612] el for radio 12 p1937 N68-22791

12 p1910 N68-22792 Fuel and cladding neut reader reactor, and radiation irradiation for fast

[LA-3768] 12 p1910 N68-22802 Organic peroxides or high energy irradiation for cur-ng rubber and swelling method for characterization of the red containing silicone subbers.

RAE-TR-67182 12 p1840 N68-22911 and embrittlement in beling stocks, iron and body centered cubi iron alloys, and refra [ORNL-TM-2059]

12 p1892 N68-22955 Application of dosimetry yais of radiation effects on or measurement and anal-mail objects subjected to

CEA-R-33761 12 p1942 N68-22964 assistors irradiated by Behavior of silicon pla cobalt 60 gamma rays [CEA-R-3313] 12 p1851 N68-22999

g apparatus for deterey perf AFRICATIVE 13 p1998 N68-23171

n and p type, low an INASA-CR-945361 13 p2132 N68-23246 on and germank

NASA-CR-666 13 s2133 N68-23464 ts on optical absorption Reactor irradiati

[NASA-CR-1032] 13 p2107 N68-23481 flects on solar con

Ultraviolet-proto trator reflective sur [NASA-CR-1024] 13 p2082 N68-23560 Annotated biblio ectronic componer losion effects on

of radiation effects on apparatus, and nuclear ex-ammunication, radar, and ionosphere (TDCK-49707) 13 n2040 N68-23844 13 p2040 N68-23856 Nuclear radiat (COO-1624-11)

Irradiation effects (INRL-MEMO-1853) structural material 13 p2108 N68-23881

on antibody response to **Total body irra** Norse serum albumin in (USNRDL-TR-68-22)

optical absorption stu is in nonmetalic crystal 13 p2138 N68-2397 Electron spin restmance an dies of radiation induced defec [NYO-2047-42]

Combined effe on is-vitro culture [EUR-3906.1]

14 p2195 N68-24427 ge in Halden boili

water reactor press [HPR-91] 14 p2288 N68-24500

14 p2290 N68-24609 gold annealing by low

(COO-1198-511) 14 p2270 N68-24674 Thermal conductionide single cry irradiation and termen [COO-1629-3]

14 p2329 N68-24676 potamium chloride Photolytic mei fracture surface er ICOO-1052-91 14 p2330 N68-24678

rated creep in polycarbonate 14 p2277 N68-24793 (UCRL-13328) chalque of rediction malecter devices 14 p2230 N66-24797 Physics and measuring damage characteristics in [BMWF-FB-W-66-17]

amage effects in silico 14 p2230 N69-24803

Proton and electron irradiation damage effects on bipolar transistors [BMWF-FB-W-68-16] [ECOM-02431-F] 14 p2230 N68-24805 Thermal model for retinal damage induced by pulsed 14 p2200 N68-24887 Intrinsic efficiencies and radiation damage in polycrystalline phosphora irradiated with high energy electrons 14 p2331 N68-25005 Cold work and heat treatment effects on steel irradiation stability [GA-8064] 14 p2273 N68-25264 Electron paramagnetic resonance analysis of damage centers in calcite after electron irradiation 14 p2334 N68-25270 errect transistors and integrated circu
[NASA-TM-X-59313] 16 Health physics and bior dical research dealing with aerosols, radiation physics, metal [AERE-PR/HPM-12] 14 p2207 N68-25357 Electron decay in pulse irradiased ganes, radiolytic studies of itons in organic media, and solvated electrons spectra in alkaline squeous solutions [RRL-23] 14 p2219 N68-25440 [KR-124] Radiation effects on low permeability graphite and hard carbon [NSJ-TR-102] 14 p2279 N68-25516 Dose-tissue volume factors in pathogenesis and morphology of laminar cerebral cortex lesions [NASA-TM-X-59783] 14 p2203 N68-25623 Radiation damage characteristics of lithium doped p-n solar cells and n-p solar cells [NASA-TM-X-59749] 14 p2195 N68-25624 14 p2195 N68-25624 Radiation induced chromosome aberrations in RISO-1171 15 p2391 N68-25843 Mutagenic effectiveness of known doses of gamma radiation and weightlessness on Habrobracon [NASA-CR-94935] 15 p2391 N68-25848 Passive dosimetry system for inclusion in Neurospora [IFTRI-U6027-4] [NASA-CR-94938] 15 p2391 N68-25850 Tabulated data on genetic effects of strontium 85 gamma radiation on Neurospora [NASA-CR-94934] 15 p2391 N68-25851 BNL-123341 Effect of fast neutron spectrum on rate and distribu-tion of damage in zirconium [AECL-3086] 15 p2513 N68-25885 [COO-1255-5] Radiation effect on le flat plate in gas medium tion effect on laminar flow heat transfer from epoxy resins (CERN-68-131 15 p2574 N68-26007 Space radiation environ materials and components ment effects on spacecraft BMI-18341 15 p2550 N68-26130 Radiation effects and radiobiological response in humans and primates for space miss 15 p2392 N68-26131 Steady laminar magnetohydrodynamic gas flow in generator channels 15 p2529 N68-26230 [NASA-CR-85201] Literature survey of thermodynamic properties and radiation behavior of carbide fuels 15 p2501 N68-26431 [LA-3799] Photoconductivity method for measuring effects of adiation induced defects in n-type silicom NASA-CR-88253} 15 p2541 N68-26632 [NASA-CR-88253] Thermal diffusion of impurities in germanium after irradiation and at high temperature [AFCRL-68-0213] 15 p2542 N68-26633 Creep-rupture properties of stainless steel before and the irradiation at high temperature [AERE-TRANS-1093] 15 p2503 N68-26673 [ORNL-TM-2130] Radiation damage processes it for Fast Flux Test Facility /FFTF/ [BNWL-667] es in structural materials 15 p2543 N68-26756 Optical bleaching, low temperature tradiation, and annealing studies of n-type germanium [AFCRL-68-0214] 15 p2544 N68-26842 polycrystalline tungste [NASA-TN-D-4661] Radiation effects on beryllium oxide and magnesium oxide reflector material [UCID-15285] 15 p2505 N68-26858 Radiation effects of fast electrons, gamma rays from cobalt 60, and mixed reactor radiation on monocrystals and polycrystals of barium titanate and related materi-[JPRS-45638] 15 p2545 N68-26946

Radiation effects on thin film integrated circuit ele-16 p2631 N68-27076 Electron radiation damage in GaAs, GaP, and GaAsP based on recombination radiation studies (ARL-68-0021) 16 p2742 N68-27212 Phenomenological study of radiation damage and recoverability of metal oxide field effect transistors [NASA-TM-X-57521] 16 p2632 N68-27307 Role of radiation in primordial organic synthesis [NASA-TM-X-57965] 16 p2597 N68-27635 Proton irradiation effects in MOS and junction field-16 p2632 N68-27638 Construction and operation of notch impact ap-paratus for strength tests on irradiated samples [SGAE-M-15/1968] 16 p2704 N68-28008 Chemical separation and coincidence methods for easuring neptunium activity in irradiated uranium 16 p2727 N68-28015 Recovery of structural defects in refractory body entered cubic metals after irradiation and plastic 16 p2745 N68-28023 Radiation resistance during life cycle of chlorella cells studied for dependence on DNA synthesis [SGAE-BL-25/1968] 16 p2600 N68-28060 fects on functions of vestibular analyzer [NASA-TT-F-11503] Gamma radiation effects on biological and chemical properties of sugars [NYO-3641-2] 16 p2601 N68-28067 Comparison between radiation and chemically induced emulaion polymerization of styrene
[TID-24281] 16 p2613 N68-28081 Mechanism of chemical changes that occur during irradiation of organic compounds by low and high energy secondary electrons
[ITTPL-18072.4] 16 p2613 N62.28093 16 p2613 N68-28093 Reaction kinetics and analysis in use of gamma ray radiation to initiate polymerization reactions BNL-12334] 16 p2614 N68-28108 Step scanning device and molybdenum rotating sode for small angle X ray study of radiation damage 16 p2732 N68-28183 Nuclear radiation effects on electrical properties of 16 p2615 N68-28193 Fast neutron irradiation effects on mechanical pro-rties of stainless steel and aluminum 16 p2685 N68-28204 Post irradiation nondestructive, destructive, and metallurgical testing of CVTR fuel assemblies [WCAP-3850-2] 16 p2710 N68-28231 Nuclear reaction cross section data for spacecraft sield design, and for determining radiation dose effect 17 p2922 N68-28333 Transient radiation effects on transmission loss and reflectance in optical glasses and quartz [LA-DC-8636] 17 p2952 N68-28358 Plastic deformation and radiation damage of lead implies at liquid nitrogen temperatures 17 p2898 N68-28380 Reactor radiation effects on electrical resistivity of ranium binary alloys containing small quantities of al-ying elements 17 p2899 N68-28452 Radiation damage and temperature dependence data on silicon solar cell arrays 17 p2814 N68-28741 Neutron irradiation effects on embrittlement of 17 p2900 N68-28818 Degradation, failure, and effects of electron irradia-on on circuit reliability of silicon integrated microcir-17 p2861 N68-28846 Radiation graft copolymerization for several polymeric compounds [PA-TR-3567] 17 p2840 N68-28882 Neutron spectra influention steel pressure vessels [UJV-1951] ence on radiation effects in car-17 p2932 N68-28938 Lithium doping effect on radiation resistance of sil-icon solar cells [NASA-CR-95735] 17 p2959 N68-28996 17 p2959 N68-28996 Literature review of irradiation effects on boron car-bide for fast reactor applications [BNWL-679] 17 p2917 N68-29310

SUBJECT INDEX Toxicity, and radiation effects on incidence of disease, sex hormones, and enzymes in dogs for research on radiobiology [COO-119-236] 17 p2827 N68-29351 Interrelation of process techniques and space radiation effects in metal oxide semiconductors [NASA-CR-95678] 17 p2959 N68-29421 Volt-ampere curves, efficiency, and photovoltaic operties of electron irradiated solar cells (ASA-TM-X-63272) NASA-TM-X-63272] 17 p2816 N68-29436 immary information from various studies on effects on reactor structural materi 17 p2918 N68-29533 [BNWL-455] Dynamic thermoelasticity problems of plates and shells in presence of radiation - sequential analysis ap-proach to heat conduction and thermoelasticity equa-tions 18 p3178 N68-30224 Space radiation effects on gallium arsenide laser diodes and optically pumped la [NASA-CR-86068] 18 p3084 N68-30248 Experimental verification of temperature distribu-tion in steels after exposure to neodymium laser pulsed radiation 18 p3091 N68-30253 Research studies on steel embrittlement in water cooled reactor technology [EUR-3784.E] 18 p3091 N68-30255 Neutron irradiation effects on tensile, impact, and fatigue properties of steels and welds in Elk River Reactor /ERR/ pressure vessel [SWRI-1228-P9-15] 18 p3116 N68-30302 Quality and performance of ruby lasers following gamma ray irradiation, optical bleaching, and thermal sensealine [NYO-3330-18] 18 p3084 N68-30344 Irradiation effects on polyvinyl chi chloride plasticizers 18 p3028 N68-30479 Interactions between impurities and point defects due to irradiation in iron at low temperature [CEA-R-3280] 19 p3345 N68-30879 Infrared and ultraviolet radiation effects on elecscence of single crystals 19 p3350 N68-31028 Gas dynamics in inviscid flow of radiating gray gas 19 p3262 N68-31031 Cladding corrosion and failure of cobalt 60 radiation source during shipment [BNL-50099] 19 p3309 N68-31111 19 p3309 N68-31111 High energy irradiation effects on decomposition of supersaturated aluminum rich copper alloys 19 p3292 N68-31338 Amorphous semiconductors in radiation hardening of electronic systems (PA-TR-3698) 19 p3354 N68-31360 Chromosome aberrations as measure of X ray and gamma ray dosage and effects on [SAM-TR-67-112] 19 p3209 N68-31408 Corrosion and radiation degradation of HIFAR ion exchange resins for heavy water reactors
[AAEC/TM-428] 19 p3228 N68-31582 Hit theory and microdiological effectiveness no etry applied to relative biological effectiveness problem [BNWL-SA-1753] 19 p3210 N68-31666 Radiochemical range-energy relation applied to aclear reactions study [KFK-693] 19 p3233 N68-31993 Irradiation testing of low density uranium oxide stainless steel dispersion fuel for Mark I core of Ar-gonne Advanced Research Reactor [N-1160] 19 p3314 N68-32084 Biological effects of X ray irradiation on Micrococcus denitrificans 19 p3212 N68-32136 Electron microscopy used to study crystal defects are to radiation in alkali halides [RTS-4324] 20 p3561 N68-32290 Differential thermal analysis to measure stored energy in X ray and gamma irradiated sodium chloride
20 p3365 N68-32770 Self-irradiation effects in cerium alloy containing 15 percent plutonium 20 p3569 N68-32865 Recovery properties of lithium containing p-n silicon solar cells after radiation damage [NASA-CR-96277] 20 p3402 N68-32919

Literature survey with radiobiological investigations [ATD-68-105-108-9]

SUB

U

F

E FT

aust (BN

P

[NA

(BN

Ei sight (NA

Moh

INA

Net

D

[GA

IRC

radio (BN

(CO

Gi

[AR

Q

Fu

PHT.

C

haza [SC-

Bi EU

Th

G

R

F

P

C

electron paramage and low temperatus [ORNL-4250]

Solid state physics research on luttice dynamics, lectron paramagnetic resonance, radiation effects, and low temperature properties

Isotropic radiation field inducing changes in particle velocity and motion

16 p2740 N68-27031

16 p2712 N68-27038

351

dia-

421

taic

ects

533

224

148

153

ter

55

nd

cts

70

28

31

11

of

LR.

tg.

'n

Ŕ

2

Ultraviolet light effect on strength of stressed polymeric fibers and films
[FTD-HT-23-822-67] 20 p3511 N68-33100 Irradiation effects on mechanical properties of (BNL-12438) 20 p3502 N68-33136 Effects of vibration as ma, ionizing, or X ray radiation on guinea pigs and [FTD-MT-24-142-67] 20 p3407 N68-33285 Neutron irradiation effects on tensile properties of austentitic stainless steels [BNWL-SA-1455] 20 p3505 N68-33354 20 p3505 N68-33354 In-reactor creep of structural materials for nuclear RNWL-SA-14581 20 p3533 N68-33355 Postirradiation annealing effects at cryogenic tem-eratures on tensile properties of commercially pure [NASA-CR-72428] 20 p3506 N68-33385 Cold work, thermal treation effects on fracture tou [BNWL-SA-1805] ent, and neutron irradia-ness of Zircaloy 2 20 p3534 N68-33429 eters influenci ng in-reactor corrosion of zironium alloys BNWL-SA-17191 20 p3534 N68-33430 d star magnitude on sextant sighting performance [NASA-TN-D-4780] 20 p3529 N68-33456 Atmospheric tritium effect oluminescent, and radiop cts on photographic, ther-photoluminescent dosime-BNWL-SA-15691 20 p3413 N68-33498 Radiation effects on mech nical properties of solid 20 p3576 N68-33508 Analytical expressions to de ons to determine transistor design effects on radiation [NASA-CR-1167] 21 p3671 N68-33767 Nuclear radiation effects on electrical properties of etal oxide-ellicon surfaces of semiconduct.'r devices 21 p3753 N68-33971 Displacement, ionization ansiest radiation in electro d chemical effects of [GA-8810] 21 p3668 N68-34351 Fast neutron irradiation de ge to microstructure of (RCN-96) 21 p3741 N68-34357 Radiation effects of graphite studied after neutron ir-radiation in EBR 2 [BNWL-740] 21 p3727 N68-34580 Electron paramagnetic resonance studies of radia-tion induced defects in single crystals of lithium sulfate [COO-1054-39] 21 p3756 N68-34612 Radiation damage in degenerate and non-degenerate silicon irradiated at low temperatures - temperature, charge state, and Fermi level dependence of irradiation effects 22 p3949 N68-35167 na ray irradiation and alun n ammonia synthesis react num oxide catalyst actions 22 p3823 N68-35187 Low temperature electron irradiation effects and electrical resistivity recovery of noble metals 22 p3950 N68-35188 tion effects on field effect transistors 1 22 p3846 N68-35259 [AFCRL-68-0321] Q-switched laser and co to study effect of laser radia [FTD-MT-24-214-67] olled output power used n on Plexiglas 22 p3894 N68-35282 Radiation effects on se [AFCRL-68-0250] uctor materials 22 p3824 N68-35366 Fast neutron radiation effects in semiconductor [TI-03-68-39] 22 p3848 N68-35574 plating potential health article inhalation 22 p3813 N68-35670 Computer program for hazards from plutonium [SC-CR-67-2845] liation damage and nuclear pyknosis of socytes in rats and rabbits 22 p3814 N68-35855 Biological radiation de peripheral lymphocytes i [EUR-3939.E] Radiation effects on intergranular corrosion and strength of BeO moderator elements in high temperature breeder reactor [JUL-528-RW] 22 p3912 N68-35922 Thick film vacuum deposition of allicon dioxide by sputtering for solar cell coverslips [NASA-CR-97123] 23 p3992 N68-36241 Gamma radiation effects on reproductive system and embryonic development of frogs [NASA-TT-F-11966] 23 p3997 N68-36318 Radiation effects in lithi [NASA-CR-97206] m-doped silicon solar cells 23 p3993 N68-36498

Technical progress report on nuclear chemistry (COQ-1167-3) 23 p4010 N68-36635 cal properties of Ionizing radiation effects amino acids within protein m [NYO-2735-8] 23 p3999 N68-36637 Pauli excitation of neon at-materials, energy transfer, io other studies related to radiatio [NYO-2962-6] ons, stopping power of nization processes and n effects 23 p4120 N68-36770 Radiation effects on aluminus system of high flux isotope reactor [ORNL-TM-2138] m alloys in coolant 23 p4102 N68-36875 Preservation of potatoes using gamma irradiation [JEN-189-SI/I-18] 23 p4000 N68-36915 Radiation effects on by radiochemistry of liquids [NYO-3383-13] gical chemical systems and 23 p4015 N68-37100 Effects of simula properties of synthe [RAE-TR-68042] ce radiation on mechanical natural rubbers 23 p4085 N68-37114 Fast neutron irrad FFTF coolant [BNWL-SA-1857] ts on thermocouples for 23 p4064 N68-37160 Fast neutron irradiati ments and cladding mate [UNC-5201] ts on nuclear fuel ele-23 p4104 N68-37222 Irradiation of sintered fuel petures above uranium oxide melt [CONF-670967-1] ellet rods with tempera-ing point 24 p4293 N68-37570 in Zircaloy-4 clad rod dioxide fuel pellets 24 p4294 N68-37739 Irradiation-induced ontaining low density WAPD-TM-596] of solar cells on synchronous orbiting at INASA-TM-X-633791 24 p4199 N68-37832 X ray diffraction analysis of ra-idiated powder samples of ura of radiation damage in ir-f uranium and zirconium [KFK-745] 24 p4296 N68-37904 Electron paramagnetic resonance analysis of radio on effects in alkali metal halides, phosphorus, and so COO-1054-321 24 p4333 N68-38080 Effect of preirra erythropoietic stimulat sure to hematopoietical and postirradiatio al X ray doses 24 p4204 N68-38099 AFRRI-SR68-131 n, and temperature of-ic transparency 24 p4273 N68-38352 Ultraviolet radio fects on polymethyl m [MINTECH-T-5766] cts in ionic crystals, and id strength 24 p4335 N68-38463 Liquid metals, radiation of ultrasonic measurements of y [AD-673969] **RADIATION HAZARDS** Equations for calculating direct laser intensity levels on human retina are described and related to safe retinal intensity levels as extracted from current litera-01 p0012 N68-10632 Calculation method for stray accelerator radiation fluxes of varying energies [JINR-P9-3402] 01 p0112 N68-10751 Laser radiation investige on eye, skin, and internal or [NELC-1502] for detrimental effects 02 p0166 N68-11246 Irradiated and heat treat semiconducting polymer devel ing system based on monitorin suring astronaut safety ed poly/vinyl acetate/ opment and flare warn-g of solar X rays for en-02 p0292 N68-11449 Flare warning system based on monitoring of solar X ays for emuring astronaut safety 02 p0263 N68-11451 Operational safety of nucl er rocket engines, and 03 p0371 N68-12190 idental destruction of (DRNL-TM-1686) 03 p0307 N68-12649 and reactor sites for 03 p0380 N68-12709 [ANL-7291] ining course texthook 03 p0309 N68-12755 in controlling occupa-04 p0463 N68-13712 ned planetary missions 06 p0910 N68-15573 [NASA-CR-92511] tonium 238 as biologi (LA-3696) 07 p1047 N68-16647

Energetic space radiation on measured for radiation and galactic cosmic radia-hazards in married space INASA-TN-D-4464) 07 p1077 N68-16837 nvestigating hazards as-articles injected into as-lear powered spacecraft 07 p0993 N68-17063 in of radicartine mosphere from ree [SC-CR-67-2645] for space power system INASA-TM-X-521871 09 p1377 N68-19029 Radiation detector as [UCRL-50007-67-2] 12 p1875 N68-22566 manned space flights 12 p1963 NSS-22849 Radiation hazards on extension (NASA-CR-1037) ts of laser radiation damage 13 p2002 N68-24127 emputer program for calculating proton and elec-radiation hazards for satellite orbit in Van Aller [BMWF-FB-W-68-18] 14 p2339 N68-24808 ntration levels of (GAT-553) 14 p2249 N68-25106 Galactic radi personic transport NASA-CR-947601 14 m2202 N68-25382 ting and evaluating 14 p2206 N68-25626 Chemical integrity aterials during boost SC-CR-67-28301 15 p2481 N68-25926 Radiation hazard in n [LA-TR-68-12] Illutions 16 p2600 N68-27978 Radiological safety studies of space nuclear systems based on intact and dispersed reentry modes of SNAP units using Po-210, Pm-147, Pu-218, Sr-90, and Tm 171 - biological modes [SC-CR-67-2729] 16 p2708 N68-28162 Nuclear safety progra radiation hazards, mater products, and fuel contai ORNL-4228] s on reactor control ponent design, finalos 17 p2916 N68-28998 and their relationship to metic fields, electromag hazards to manned spec-Solar cosmic ray variations olar physics, solar wind mag etic radiation, and radiation [NASA-CR-95689] 17 p2964 N68-29032 lamage to silicon solar Proton induced rac NASA-CR-959971 19 p3206 N68-31622 19 p3211 N68-32133 calculating scattered radiation in accel [NP-TR-1663] 20 p3548 N68-33148 of cosmic radiation ef-rials and humans 21 p3636 N68-34521 NASA-CR-73232 J Mathematical proof for cr sed in determining radiation saion product decay omputer program RIBD in hazards of radioactive fission production (DUN-4136) 22 p3911 N68-35741 mance predictions for irradiated fuels 24 p4292 N68-37478 tion h BNWL-650) uzard to eyes and [SC-DC-68-2108] 24 p4204 N68-38178 Wind speed, wind di cets used in evaluation ith reactor accident and stability measure-24 p4284 N68-38381 RADIATION HEATING U RADIANT HEATING RADIATION INDICATORS

U DOSIMETERS

U INDICATING INSTRUMENTS RADIATION INJURIES Physiological response of h man skin to ultraviole [ORO-3578-2] 01 p0010 N68-10435 Radiation effects on bose marrow cell chromosomes [NSJ-TR-78] 01 p0011 N68-10522 matical model of skin exposed to thermal [NADC-MR-6708] 02 p0165 N68-11212 Technical characteristi damage to cyes [AD-667494] es of lasers and radio

14 p2200 N68-24968

Co deter vide [NA

Ri

[US!

ef En

CODO

Pr

Ef

Ra device (AFC

Ra fect of

Mand |

Ra safet [CE

cal, a

Sa ties (TID

N

(HD

radii [NP-

C

NA

RADIA

turbi [RD

RADLA

C

desig [NA

and i

Fi shiel [OR

Ni tion tilay [OR

E

04 p0508 N68-13237

measurements on magnetic field, sky radiation, spaceborne photography, electron and ion environmental density, and bremstrablung [NASA-TM-X-60791] 05 p0735 2469 and experimental vertexam-is to measure optical radiation of ionized particles with ga Mathematical models and computer program to etermine effects of high intensity laser radiation on (PA-TR-3678) 16 p2596 N68-27170 [NASA-CR-86062] 17 p2930 N68-28774 Ruby and no er induced retinal damage chniques and devices, oc-es, personnel protection, safety - programmed text Radiation measurement cupational and other do and other aspects of radiat in rabbita [MR-68-4] nents on internal, and its during Gemini 10 16 p2596 N68-27349 Bose marrow content in adult dogs for evaluating ompensatory reactions of hematopoietic system in esponse to radiation damage 05 p0658 N68-14152 [NASA-CR-61213] 17 p2892 N68-28785 Theories, measuring probler for solar wind studies and probe per and ellipsoidal reflec-of opaque materials 18 p3073 N68-29961 17 p2818 N68-28509 Optimization of inte 06 p0900 N68-15025 Retinal injuries in monkeys from neodymium, car-tion dioxide, and Q-switched lasers [AD-670852] 19 p3210 N68-31466 tometer to measure refle [NASA-CR-73234] 19 p3210 N68-31466 tion of neutron double Construction of res gamma ray spectra fro sociated FORTRAN co [USNRDL-TR-68-47] matrix used to obtain height spectra and as-[JUL-500-RX] 06 p0843 N68-15225 Ruby laser energy effects on functional activity of Neutron, and gamma ray measuring devices for determining radiation shielding effectiveness of rograms 18 p3135 N68-30502 human iris [SAM-TR-68-34] 19 p3211 N68-32088 Radioactivity of pure uranic equilibrium with daughter produ [NIM-162] m, and its growth to Acute and chronic radiation hazards for man in ex-sterrestrial space 06 p0874 N68-15414 cts 19 p3329 N68-31368 19 p3211 N68-32133 Telemetry of radioactive radiations and application Biological effects of electron irradiation in 2 to 6 GeV range on beans and seedlings 19 p3211 N68-32134 Continuously calibrated mi nermal radiation measuremen rowave radiometer for 06 p0800 N68-15636 [FTD-MT-65-434] 20 p3481 N68-33402 Ultraviolet photon cinity, and in interp Techniques and instradiation data from met [NASA-TM-X-63314] for interpretation of RADIATION INTENSITY
U RADIANT FLUX DENSITY U KIRCHHOFF LAW OF RADIATION U STEPAN-BOLTZMANN LAW
RADIATION MEASURENG INSTRUMENTS
NT ACTIONOMETERS
NT BOLOMETERS
NT DICKE RADIOMETERS
NT DICKE RADIOMETERS
NT DICKE RADIOMETERS
NT ELECTRON COUNTERS
NT ELECTROPHOTOMETERS
NT ELECTROPHOTOMETERS
NT ELECTROPHOTOMETERS
NT ELECTROPHOTOMETERS
NT INFRARED DETECTORS
NT INFRARED INSTRUMENTS
NT INFRARED SCANNERS
NT INFRARED SCANNERS
NT INFRARED SECTROMETERS
NT INFRARED SPECTROMETERS
NEUTRON COUNTERS
T NEUTRON COUNTERS
T PARTICLE TELESCOPES
T PROPORTIONAL COUNTERS
T PROPORTIONAL COUNTERS
T PROPORTIONAL COUNTERS
T PROPORTIONAL COUNTERS
T PROPORTIONAL COUNTERS planetary space prob NASA-CR-925241 20 p3525 N68-33455 06 p0906 N68-15940 Intermediate, and micro vave infrared measurements data acquisition system by weather satellites [NASA-CR-91902] 21 p3779 N68-34352 06 p0870 N68-16104 Disk fluxmeter for radiant energy measurement, and quation derived for incident flux calculation SRO-TM-7] 07 p0996 N68-16341 ultifuel nuclear reactor equation derive with continuous reactivity m [CEA-R-3375] radiation from astronomical (ESRO-SN-44) Thermal 22 p3911 N68-35714 on and measurement of cyclotron beam property, mical light sources 07 p0996 N68-16373 KFK-7541 22 p3919 N68-35861 Thermal testing of two stage night high resolution infrared re [NASA-CR-93291] Biological indicate nuclear facilities [DP-MS-67-99] ge radiant cooler for day-radiometer ers of radioactivity in vicinity of 08 p1177 N68-17435 23 p3998 N68-36455 Measured high energy electr ment by gan-discharge counter [NASA-CR-93286] on flux in lunar environ-on lunar probe 08 p1234 N68-18048 NT RADIOBIOLOGY Theoretical radiation physics, radiation effects in ter-restrial ecology, radioactive materials, radiobiology, radiation measuring instruments (ORNL-418) 10 p1473 N68-19653 ques and optical diag-Radiation measuring tech ostics for hypersonic wakes 08 p1164 N68-18094 Theoretical radiation physics, restrial ecology, radioactive a radiation measuring instrument adiation effects in ter-sterials, radiobiology, **Biological** app neutron sources [NSTIC-TRANS-1840] 12 p1823 N68-22443 PARTICLE TELESCOTES
PHOTOMETERS
PROPORTIONAL COUNTERS
PYRANOMETERS
QUANTUM COUNTERS
RADIOMETERS
SCINTELLATION COUNTERS
SILKON RADIATION DETECTORS
SOLAR SPECTROMETERS
SPARK CHAMBERS
SPECTROPHOTOMETERS
SPECTROPHOTOMETERS
SPECTROPHOTOMETERS
THRESHOLD DETECTORS (DOSIMETERS)
ULTRAVIOLET SPECTROPHOTOMETERS
ULTRAVIOLET SPECTROPHOTOMETERS
ULTRAVIOLET SPECTROPHOTOMETERS
ULTRAVIOLET SPECTROPHOTOMETERS
ULTRAVIOLET SPECTROPHOTOMETERS [ORNL-4168] 10 p1473 N68-19653 Summary data on research activities in area of instru-tion muclear reactors, synchrotrons, radiation sedicine and radiation detectors NAME AND A Radiation attenuation, and a easurements in radiobiology utron energy spectrum 10 p1462 N68-19656 12 p1931 N68-22598 Structural design and opera-ersonal radiation dosimeter puter program for calculating potential health a from plutonium oxide particle inhalation R-67-2845] 22 p3813 N68-35670 onal details on Apollo hazards from pluton (SC-CR-67-2845) NT meter [NASA-CR-92048] 11 p1701 N68-21647 Biological radiation damage and nuclear pyknosis of peripheral lymphocytes in rats and rabbits [EUR-3939.E] 22 p3814 N68-35855 (ASA-CR-200-)
Annular lithium-drifted germanium detectors
udy nuclear reaction gamma rays
12 p1872 N68-22106 NT Research project summaries covering nuclear physics, radiochemistry, isotopic labeling, measuring matruments, fallout, and radiation medicine [IA-1128] 23 p4101 N68-36659 Flux detector reaction data analysis for neutron flux parameters of nuclear reactor [AERE-M-1870] 12 p1906 N68-22569 NT NT NT [IA-1128] Integrating type ionization chamber applied to mea-surements of radiation in space [NASA-CR-90060] 01 p0139 N68-10422 Monitor equipment for trit nuclear reactor installation [AERE-M-1929] RADIATION NOISE
U ELECTROMAGNETIC NOISE lated water in air of 13 p2068 N68-23707 01 p0139 N68-10422 RADIATION PRESSURE

NT ELECTRON PRESSURE

NT LUMINANCE

NT LUMINOUS INTENSITY

NT SOUND PRESSURE Solid state preamplifier for beta ray thickness gage [NSJ-TR-83] 01 p0064 N68-10640 ers in radiometric anal-Optimum sensitivity paramete ysis of lead concentration in ores 13 p2017 N68-23822 Amplifier design using low cost silicon diode detec-tors and bipolar transistors for high range gamma radia-Development of ger detector for Nimbus rad [NASA-CR-94613] immersed thermistor Radiation pressure on con [SU-IPR-112] 03 p0415 N68-12474 USNRDL-TR-67-106) 13 p2070 N68-24165 01 p0038 N68-10673 Equations and logic for digital computer simulation of environmental pressure effects on earth-orbiting Atmospheric effects on earth radiation temperature Calorimetric methods ([UCRL-TRANS-10217] or dosimetry 14 p2289 N68-24509 [JPRS-43413] 01 p0059 N68-10677 ents requirements, and onductor detectors 14 p2254 N68-24611 [NASA-CR-61582] 08 p1238 N68-17589 Portable gamma spectrometer for safeguarding in-ventories of uranium 235 contained nuclear fuel ele-Metal surface shielding by rupture products from low-maty laser radiation fluxes Trapping processes in solid sta [NYO-3409-4] te radiation dosimetry 14 p2334 N68-25281 19 p3288 N68-31757 (BNWL-508) 03 p0342 N68-12053 Effect of sun mass changes corpuscular radiation pressure on electromagnetic and Design and perform measuring beta radiat (CEA-R-3362) tillation counter for m measuring pulse height tor in flight path of linear roportional counter for 19 p3362 N68-32060 14 p2259 N68-25384 EGG-1183-21001 Rocket measurements of p RADIATION PROTECTION
NT SOLAR RADIATION SHIELDING 03 p0398 N68-12732 ax detectors, and airglow mini flights 04 p0598 N68-12918 Comparison of n 15 p2549 N68-25887 Respirators and clothing for protecting respiratory organs against radioactive substances [JPRS-43578] 03 p0307 N68-12748 (PB-174485) PRS-43578]
Basic safety standards for radiation protection
04 p0460 N68-12873 s of cosmic microwave lrogen emission line specmeter measurements und, and oxygen hydr and optical microp (FTD-MT-67-62) 15 p2426 N68-26287 Thermoluminescent response of lithium fluoridosimeters to radiations with different linear energy 04 p0570 N68-13463 Magnetic shielding for man ed spacecraft radiation FTD-HT-66-440] 04 p0573 N68-13074 [COO-1105-129] 15 p2544 N68-26801 04 p0511 N68-13697 Step scanning device and molybdenum rotating node for small angle X ray study of radiation damage Radionuclide selection and radiation protection tandards for timepieces with radioluminous painted

radiation from irre (AERE-R-5179) for measuring gamma t monitors 05 p0658 N68-14079

10 miles glass (COO-1255-5)

16 p2732 N68-28183

774

785

502

to

368

Sieve

102

185

152

14

ťν.

61

55

Ŋ.

53

43

th

of

55

Cobalt 60 gamma radiation of male white mice to retermine ability of auxin and antiviral agents to pro-ide radiation protection. vide radiation protec [NASA-CR-9[340] 04 p0455 N68-13304 ng space flights - fast 04 p0438 N68-13784

ignition hardening of alpha-cellulose and cotton cloth materials - development of fire retardants for pro-tecting fabrics against ignition from nuclear weapon (USNRD).-TR-67-1251 06 p0857 N68-15292

Energy transfer and ra polymethy! metha n protection in radiolysis of polymethyl copolymers [COO-1224-15] 07 p0961 N68-17199

Protective effects of prophylactic and therapeutic omplexes in dogs exposed to ionizing radiation 08 pl 131 N68-17750

Effects of low density, temperature, proton radia-tion, and electromagnetic radiation on stanium oxide thermal control material 10 p1541 N68-19604

ted gate field effect Radiation hardened devices [AFCRL-67-0684] 10 p1506 N68-20149

Radiobiological study on rats testing protection effect of Iranian manna-base antiradiation drug [CEA-R-3412] 12 p1826 N68-22700

Methods, equipment, and calculations for detection and protection against tritium radiation [CEA-R-3350] 12 p1830 N68-22876 Radiation detectors in light vehicles for nuclear safety control at research facility [CEA-R-3324] 12 p1880 N68-23020

Manufacture of air filter units for biological, chemical, and radiological protection
[NRL-MR-1852] 13 p2078 N68-24291

Safety guidelines for high energy accelerator facili-

TID-239921 15 p2450 N68-26924 iate frequency amplifier

Neutron hardened interm using n-p-n planar transiston [HDL-TM-68-16] 20 p3451 N68-32643

Approximate formulas for calculating scattered radiation in accelerator halls [NP-TR-1663] 20 p3548 N68-33148

Nuclear and explosive d truct concepts for nuclear 22 p3909 N68-34833

nted and soldered cover silicon solar cells 24 p4200 N68-37935 Comparison between ce glass for radiation pro [NASA-TM-X-1687]

alculations of protection for basic 1000 GeV ac-erator, 18 GeV proton synchrotron injector, and ar accelerator injector against ionizing radiation 24 p4320 N68-38192

RADIATION PYROMETERS

Measuring residual temperatures of shocked plates using infrared radiation pyrometer 03 p0425 N68-12201

Material systems for high temperatury sensors of gas [RDR-1479] 19 p3282 N68-32172

RADIATION SHIELDING NT SOLAR RADIATION SHIELDING

Computer methods for calculating radiation shield design for Plum Brook reactor HB-6 beamhole facility [NASA-TM-X-1461] 01 p0089 N68-10133

Charge injections in tors and analog tank for plasma [NASA-CR-89956] us, holes in electron clouds, radiation shield 01 p0117 N68-10398

Flux density distribution, dose equivalent, and shielding effectiveness of 14 MeV neutron generator [ORNL-TR-1757] 01 p0110 N68-10595

Numerical integration of Boltzmann transport equa-tion and response matrix method for analyzing mul-tilayer gamma ray shields [ORNL-TR-1671] 01 p0111 N68-10636

Electron shielding - comparison of thick target energy straggling and angular distributions with Monte (2nd calculations [NASA-CR-89966] 01 p0112 NAS-16700 01 p0112 N68-10702

01 p0112 N68-10731 Neutron flux density measurement and effective removal cross section of various neutron shielding materials—polyethylene [UCRL-TRANS-10128] 01 p0114 N68-10816

01 p0114 N68-10816 01 p0114 N68-10840 Fortran 4 program theory and description for one dimensional bulk radiation shielding design [EUR-3626.E] 03 p0374 N68-12443 ding design 03 p0374 N68-12443

Shield analysis of Los Alamos molten pluto [LA-DC-8538] 03 p0378 N68-12636

Energy buildup factors in penetrations for 6 MeV plane is [WAPD-T-1932] water for very deep tropic gamma source 03 p0398 N68-12740

Electromagnetic energies of convection currents, and solar cell shielding requirements against radiation belts [PB-175806] 04 p0598 Nes-12921

cell shielding requi

04 p0447 N68-12923 Monte Carlo method, kernel function, and S matrix theory applied to design and analysis radiation shields in nuclear rocket systems [NASA-CR-91541] 04 p0538 N68-13501

POINT computer progradiation shields in nucles [NASA-CR-91543] m for design and analysis of rocket systems 04 p0538 N68-13502

for design and analysis of TAPAT computer pro-diation shields in nucle 04 p0539 N68-13503 [NASA-CR-91542]

KAP-5 computer practiation shields in nuc [NASA-CR-91540] r design and analysis of cet systems 04 p0539 N68-13504

program for radiation nuclear rocket systems 04 p0539 N68-13505 TIC-TOC-TOE shielding design and [NASA-CR-91533] Users manual for ODD-K computer program used in diation shielding design and analysis in nuclear

rocket systems [NASA-CR-91534] 04 p0539 N68-13506 Neutron flux and gr program for design an nuclear rocket systems [NASA-CR-91535] ray source edit computer

04 p0540 N68-13507 ODD-K angular flu is tape computer program for esign and analysis in nuclear

rocket systems 04 p0540 N68-13508 Fortran analytic solu-random sampling in ru analysis of nuclear rocks [NASA-CR-91538] transport equations in shielding design as

04 ±0540 N64-13509

ogical effects, and shielding 04 p0458 N68-13782

Physical and biological dose calculations for proton ad alpha fluxes incident on shielded man model 04 p0459 N68-13788

Neutron and reactor physics shielding, critical mass, and a grams and calculating methods [ORNL-4134] 05 p0703 N68-13952 Neutron spectra measure ethods for nuclear reactor as

ents and calculating weapon shielding 03 p0690 N68-13955 Sation Shielding Info tion Center studies in nents, and data storage

05 p0703 N68-13956

neutron cross section Computer programs us and shielding calculations 05 n0632 N68-13957

energy particle interac-05 p0703 N68-13959

energy particle interac-particle production for

O5 p0704 N68-13960
Beam loss distribution and shielding experiments to estrong focusing proton synchrotron [UCRL-17797] 05 p0704 N68-13960

ng neutron flux dis-Computer program for ca ibutions in reactor shields 05 p0696 N68-14730

ments for calculating

06 p0883 N68-15049 ding of m coatings, and materials for radiation nuclear technology structures - epoxy sur-concrete construction materials, and polymer films FTD-HT-66-6911 06 p0873 N68-15409

Radi al of polymer, an 06 p0874 N68-15410 Adhesive polyethylene, and polyvinyl chloride layers for protective surface coatings against radioactive coa-

06 p0874 N68-15411

06 p0874 N68-15412 Epoxy coatings for radiation prot on of metal, and

06 p0874 N68-15413 ray measuring devices for shielding effectiveness of

06 p0874 N68-15414

lout protection of struc-or computer engineering (SN-255) 06 p0875 N68-15684 rete shielding ir-

radiated with proti n in siab shields of Neutron and gamma ray lithium hydride, uranium, a [NAA-SR-MEMO-12446]

7 p1038 N68-16110 07 p1039 N68-16175

actors with GAM-ses Monte Carlo process of gamess 07 p1043 N68-16454

ving transport equations multiple shield for gamma ray penetrati [NAA-SR-12337, V. 1] 07 p1047 N68-16620

Textbook on dosis [FTD-MT-64-291] distion shielding 07 p0946 N68-16751 Secondary gamma asymmetric SNAP shi [K-DP-2623]

OE p1200 N68-17225 Design, evaluation techniques for reacts [NASA-CR-93368] 08 p1207 N68-18184

Size and shield weigst-spectrum, liquid-08 p1207 N68-18197

Monte Carlo and di compared with experime to measure neutron distr transmission through shir ORNL-TM-1965 09 p1387 N68-18561

g program in FOR-09 p1375 N68-18727

ion sources, cross sec-radiation shielding 09 p1392 N68-18981 tion data, particle tra

Principles of m (KN-68-71/R/) 09 p1343 N68-19028 distion protec

d planetary missions 09 p1428 N68-19429 [NASA-CR-73190]

[NASA-TM-X-1512] 10 p1556 N66-20355 Prototype, portable pump motor driven, rotating shield p [ANL-7379] d cleanup system for 11 p1741 N68-21166

Absorption factors for g for heavy grades of reinforce [JUL-509-ST] ncrete mixtures 11 p1757 N68-21399 400-MeV linear electron

ORNL-42111 11 p1758 N68-21759 Nuclear data file for mend shielding calculations [LA-3801]

12 p1909 N68-22728 Techniques for ca attenuation in shields (DASA-1892-3) 13 p2115 N68-23393

13 p2120 N68-23788

Approximation a in shielding materia [NIJS-R-520] 13 p2120 N68-23887 Rotating and stationary design concepts for seconda-gamma shield for Fast Flux Test Facility /FFTF 13 p2100 N68-24337 INAA-SR-MEMO-125861

04 p0512 N68-13713

04 p0456 N68-13714

m fluoride thermoluminescent dosimeter mea-

St

Point hernel shielding code for parametric surveys on space power reactor shielding designs [UCID-15284] 14 p2290 N68-24590 Design of super critical pressure cryogenic storage and supply equipment with radial bumper shield [NASA-CR-92[37] 14 p2370 N68-24696 Chaster shield radiation protection for films during prolonged space missions [NASA-CR-61822] 14 p2258 168-25220 14 p2256 N68-25220 Impact testing of lead-shielded fissile and radioactive atterials casks ORNL-TM-1312, V. 6) 14 p2359 N68-25259 Neutron measurement technology for cross section analysis of fast reactor and reactor shielding [12], 4466] [14] p.2294 N68-25265 Radiation damage shielding of solar cells an synchronous measurement. synchronous spacecraft [NASA-TM-X-63232] 15 p2389 N68-25736 Space radiation transport, design and advanced concepts, an lating radiation penetration themse sport, spacecraft shielding cepts, and methods for calcu-n through protective shields [NASA-SP-169] 15 p2550 N68-26128 space radiation environment studies for design of elding against cosmic rays, solar flare particles, and a Allen radiation Space radio 15 p2550 N68-26129 Free electron electric and magnetic fields for plasma distion shielding of astronauts from energetic otons produced by solar flares 15 p2551 N68-26135 Electron transport study in thick targets to determine ielding effectiveness of spacecraft components 15 p2551 N68-26138 Parametric technique for determining primary elec-tron dose in spacecraft radiation shielding 15 p2552 N68-26143 Monte Carlo calculations for high energy nucleon transport in spacecraft radiation shielding 15 p2552 N68-26144 Nuclear cross sections and center of sphere dose cal-culations for spacecraft radiation shielding research 15 p2553 N68-26145 Gamma probe analysis of radiation shielding for Apollo and Gemini spacecraft 15 p2553 N68-26150 Radiation environments and transport techniques as applied to spacecraft radiation shielding and detection problems 15 p2560 N68-26153 Neutron scattering, criticality, control, fuel element, and shielding studies for nuclear research and test reac-15 p2506 N68-26942 Summary of studies on Monte Carlo method for nucleon transport through dense matter [NASA-CR-83623] 16 p2722 N68-27561 Preliminary calculated and experimental transport data on angle dependent neutron spectra emergent from large lead and polyethylene slab shields 17 p2938 N68-29222 Discrete ordinates codes used to determine seconda-gamma sources in reactor assemblies and shields 17 p2939 N68-29228 Kernel-diffusion analysis for suclear power reactor radiation shields, and related nuclear fusion, absorp-tivity, and neutron removal data (ICEMF-599) 17 p2939 N68-29230 Minimum radiation shield weight for nuclear reactor used as electrical source aboard spacecraft [NASA-TT-F-11651] [8 p3114 N68-29922 Cylindrically symmetrical radiation shielding for high energy muons with no magnetic fields present in vicinity of present accelerator [UCRL-18117] 18 p3133 N68-30365 18 p3133 N68-30365 Lead shielded cells for spectrographic analysis of radioisotope solutions [JEN-188-DQ/I-64] 19 p3221 N68-30954 19 p3221 N68-30954 Infrared radiation shielding for DSKT-6000 water-cooled tubular zenon lamp [RTS-4820] 20 p3449 N68-32453 Anisotropic discrete ordinates calculations with easured neutron spectra in standard shield

(EATR-4163) [NCEL-TR-551] Design specificati units, and betatrons [15S-68/6, CH. 7] 21 p3743 N68-34555 Gamma ray yields from capture of nonthermal eutrons by reactor shields ORNL-TM-22091 21 p3745 N68-34702 search for celestial gas [NASA-CR-95736] 21 p3745 N68-34702 Radioactive isotopes as sources of heat and radiation with applications for spacecraft power and propulsion and terrestrial uses in SNAP Thermal entry length of temperature sensor place-ent in tubular radiation shield 23 p4061 N68-36530 Reactor operator training handbook on radiation safety and control [ORNL-TM-2034, V. 2]

23 p4102 N68-36806 Design and instru entation of fluid transpiration arc of or solar simulation 20 p3455 N68-32487 Creep tests; microhardness, and activation energy of Hastelloy X for nuclear cladding [AGN-8279] 23 p4079 N68-37025 [NASA-CR-96237] ng 23 p4079 N68-37025 X ray astronomy rocket experiment for identification and positioning of SCO X-1 atrong X ray source [NASA-CR-89759] 21 p3773 N68-34710 Heating calculations for absorption in graphite mode (BNWL-625) ion product gamma ray ors 23 p4104 N68-37170 Particle acceleration within turbulent region for analysis on fluctuation origin of cosmic radiation [NASA-CR-97142] 23 p4162 N68-36131 Gamma ray produ [NASA-CR-97253] 23 p4164 N68-37235 RADIATION SPECTRA NT ABSORPTION SPECTRA Theoretical and experimental valves of meteoroid flux density and micrometeoroid distribution in relation to Jupiter probe shielding ABSORPTION SPECTRA
BALMER SERIES
ELECTROMAGNETIC SPECTRA
ELECTRONIC SPECTRA 23 p4178 N68-37246 saured mass stopping powers of graphite and ics in relation to cavity ionization theory 24 p4309 N68-37602 EMISSION SPECTRA
FRAUNHOFER LINES
H ALPHA LINE
H LINES
INFRARED SPECTRA FORTRAN Monte Carlo procedure GRASS for cal-ulating gamma ray attenuation of simple structures RRA-179] 24 p4312 N68-37706 NENT cutating gamma ray atten [RRA-179] K LINES K LINES
LINE SPECTRA
LYMAN SPECTRA
MICROWAVE SPECTRA
RAMAN SPECTRA
SOLAR SPECTRA
STELLAR SPECTRA
TELLURIC LINES
ULTRAVIOLET SPECTRA
VIBRATIONAL SPECTRA Energy and angular distributions of fast neutron behind flat iron plates of various thickness [FTD-MT-24-253-67] 24 p4321 N68-38315 RADIATION SICKNESS Conference of Air Force behaviorial scientists dealing with personnel selection, psychiatric and psychological treatment, radiation ackness, and related retearch activities [AD-665846] 11 p1642 N68-21793 RADIATION SOURCES
NT MONOCHROMATORS
NT NEUTRON SOURCES
NT POINT SOURCES Gamma ray spectra from radi neutrons by silicon and calcium [NIJS-R-505] 0 tive capture of fast 03 p0387 N68-12170 Method of absolute gr Particle populations and rad tion spectra in space 10 p1589 N68-20570 Auger, internal conversion, and gamma ray spectra from protactinium 233 decay, and photoelectron scat-tering effect on IEC method ment using scintillats [INR-799/XIX/NT] in fixed geometry 01 p0102 N68-10167 Fluid transpiration are radiation source for solar 12 p1955 N68-22205 03 p0400 N68-12149 Asymptotic formulas for frequency redistribution ap-proximation of resonant radiation scattering in plane layer of large optical thickness nance radiation source Hollow cathode carbo [TR-0158/3250-40/-5] 03 p0384 N68-12515 12 p1916 N68-22380 General properties of sets of uniform, isotropic radiation sources with respect to directivity [AFCRL-67-0152] 05 p0630 N68-14369 Line structure, energy levels, and radiation spectra (Raman scattering studied using gas lasers [ATR-4] 13 p2079 N68-24329 Design, power requirements, and capacity of small, sconel-sheathed infrared radiation heat sources EATR-4163] 05 p0636 N68-14513 Gamma ray spectrum from decay of germanium 69, measured with germanium /lithium/ detector [JINR-P6-3698] 14 p2318 N68-25407 Mathematical model for estimating single isotope strength in decaying radioactive multiple isotope Linear Energy Transfer /LET/ spectrum of primary alactic radiation compared to flare produced radia-05 p0719 N68-14773 15 p2550 N68-26132 design for military applications d laminar flow argon electric arc Radiation source of using fully developed discharge as example [ARL-67-0179] Gamma ray spectra mea-resonance neutron capture in cesi [JINR-P3-3697] nents following esium 133 15 p2519 N68-26387 06 p0890 N68-15645 Gamma ray spectra from resc in barium and praseodymium isc (JINR-P3-3696) Cosmic rays and their sources [ESRO-SN-76] nance neutron capture 06 p0906 N68-15669 15 p2519 N68-26389 Chemical or physical environment effects on decay onstant of niobium 90, and gamma ray spectra of olybdenum 90 Encapsulation of radi tive source materials for Indigeneous Company Co 16 p2718 N68-27098 Neutron and photon energy spectra and resultant se rates after chemical separation for high exposure Bibliography on space radiation sources, cross sec-tium data, particle transport, and radiation shielding [NASA-CR-75316] 09 p1392 N68-18981 Bibliography on space radi 16 p2616 N68-28301 BNWL-SA-1644] IASA-CR-75310)
Balloon observation of counic rays
10 p1588 N68-20404 Cosmic gamma ray spectra from production and ecay of neutral pi-mesons produced in metagalactic cosmic-ray proton-proton collision [NASA-TM-X-63254] 17 p2963 N68-28697 nular aperture diffracted energy distribution for Absorption cross sections for soft X rays in interstel-lar medium - X ray spectrum for source star, ScoXR-1 18 p3158 N68-29585 extended source [NASA-TM-X-63186] 12 p1918 N68-22916 Radiochemistry developm nalyses of radiation sour rocessing radioactive raw m ment in U.S.S.R., chemical arces, and technology for materials Beta and gamma ray spectra of short lived isotopes in 2s-1d shell 19 p3324 N68-31061 14 p2211 N68-24610 Physical constants test reactor integral measure-tents of photonium 239 alpha in fast spectra BNWL-774] 20 p3534 N68-33428 biological research, and ing radiation sources 14 p2303 N68-24612 Radiochemical and radiob adioactive isotopes for ionizin ments of pluton [BNWL-774] RADIATION THERAPY s for radioactive sources, X ray Luminescence dosimetry conference on materials, lithhum fluoride thermoluminescent dosimeters, instrumentation, and applications to radiation therapy, biophysics, and personnel safety

[CONF-650637] 04 p0511 N68-13681 16 p2723 N68-27699 Cosmic gamma ray detector with scintillator and dicon spark chamber in high altitude balloon in 64 p0511 N68-13681 17 p2964 N68-29434 on of absorbed dose by lithius scent dosimeters for radiation

18 p3026 N68-30262

n source designed for 19 p3213 N68-32143

AD-6722251

[ORNL-TM-2209]

[NASA-CR-1200]

DEX

e arc 2487

ation

4710

1 for

6131

fast

170

e 1570

cat

205

ap

380

ctra

329

69.

407

iary dia-

132

-

387

189

)98

ant

101

and tic

97 tel-

1 85

in

61

28

à

81

on

13

000

in vivo measurements of radiation dose transmission through bone and lung Protective effects of prophylactic and therapeutic emplexes in dogs exposed to ionizing radiation 08 p1131 N68-17750 Radiobiological evaluation of high energy particle orage effects on human health and therapy nd therapy 12 p1822 N68-21936 RADIATION TOLERANCE Survey on biochemical effects from radiation (BARC-287) 03 p0305 N68-12151 rediation resistan g of silicon solar cells with 05 p0606 N68-14031 Acceleration effects or ptibility of organisms to radiation during space flight [NASA-TT-F-11397] 07 p0942 N68-16163 n silicon solar cells and ell performance Il performance 07 p0938 N68-16371 Relationships between cell radiation resistance in pocket [NASA-CR-69454] tion kinetics and 09 p1283 N68-18954 Relationship between diation dosage effects biological parameters and 12 p1822 N68-21954 of high energy particle and therapy 12 p1822 N68-21956 nical properties of polyimic midazopyrrolones, films [NASA-TM-X-59873] 16 p2691 N68-27814 Radiation resistance, out-weight of five electrical insulation materials for [NASA-TN-D-4553] 16 p2692 N68-28264 Lithium doping effeicon solar cells [NASA-CR-95735] iation resistance of sil-17 p2959 N68-28996 Lithium diffusion solar cells [NASA-CR-96012] 19 p3204 N68-31391 Acute and chronic rudiation hazards for man in ex-traterrestrial space 19 p3211 N68-32133 Analytical expressions to determine transistor design effects on radiation resistance [NASA-CR-1167] 21 p3671 N68-33767 Repeated low-dose X ray irradiation effects on dis-rimination and radiation tolerances of albino rats 23 p3996 N68-36069 RADIATIVE HEAT TRANSFER Perturbation method for in ansfer equation to obtain vi tribution in planetary atm [NASA-TM-X-63021] 01 p0134 N68-10169 Lunar volcanism model based or radiative thermal conductivity of m [NASA-CR-916] od on high temperature of minerals and rocks 01 p0055 N68-10283 Radiant heat transfer to aerosols for application in aerous core nuclear rocket engine designs NASA-CR-953] 01 p0093 N68-10561 [NASA-CR-953] Heat transfer and pressure is cooled fuel rod clusters for nu [JUL-486-RB] re loss measurements on gas nuclear reactor 01 p0094 N68-10766 nals of Fredholm integral equations Solution functionals with displacement kern [RM-5459-PR] 02 p0227 N68-11159 Radiative heat transfer in surface layers above (FTD-HT-67-415) 02 p0204 N68-11181 Regional averaging method for studying radiative transfer between concentric spheres [NONR-562/35//20] 02 p0282 N68-11454 Approximation method for gas parameters behind shock wave front 02 p0284 N68-11555 Thermal radiative and convective heat transfer in rbulent boundary layer of high temperature gas to 02 p0284 N68-11560 eat transfer and friction in athermic gas flow 02 p0289 N68-11738 bles, and convective and tions about blunt bodies 03 p0415 N68-12313 Recycling heat transfer in high pressure boiling water (EUR-3605.D) 04 p0597 N68-13739

[ARI.-67-0210]

11 p1805 N68-21575

Radiative and convective blust badies traveling at a angle of ottack in assum nitrogen and carbon dioxide [NASA-CR-94239] One dimensional, steady state heat exchange by both convection and radiation between rods or fins and their (NASA-TN-D-4257) 05 p0753 N68-14052 12 p1980 N68-21858 Radiator systems for [NASA-TT-F-11433] 05 p0753 N68-14177 Simulated planetar re and convective imospheres for studying radio-it transfer on vehicle enterine Design and per ed curved rad for thermoelec of spacecraft 06 p0924 N68-15042 NASA-CR-943171 12 p1982 N68-22230 Radiative heat to ed thermal structure of NASA-CR-92542] NASA-C 2-10231 12 p1962 N68-22318 06 p0911 N68-15662 nts on magnesium flame pating layer during radi-re solved by Galerkin Diffuse radiation s (ISL-T-15/66) 07 p1094 N68-16160 12 p1917 N68-22395 termining radiant host Radiant cooling syst [NASA-TT-F-11499] conical spikes 07 p1097 N68-16813 medium 12 p1982 N68-22397 Featibility of supp radiating liquid core ([NASA-TN-D-4413] id fu el on solid wall in ed for pres er abi ket concept 07 p1072 N68-17093 vective and radio Gray optically thick give-radiative equilibriu [NASA-CR-93162] tive heat transfer (NASA-CR-612) caphere in conv OR p1235 N68-17235 Scientific research physics, soil mech in fluid dynamics, plasma and combustion there ilibrium 12 p1969 N68-22860 modynamics [FTD-MT-64-84] Scuttering in re-08 p1209 N68-17701 13 p2166 N68-23494 tion coefficient of time 08 p1256 N68-17723 13 a2168 N68-23505 Computer programs for under for Saturn exhaust a ting radiative heat 08 p1259 N68-18092 NASA-CR-732231 13 p2169 N68-23703 ar inversion method for formulating wave in theory of radiative heat transfer 08 p1259 N68-18095 13 p2172 N68-24089 d minimum root-mean-square error inve-d for solving integral equation of radiativ Radiative heat by field and h self absorption offect on behind collected about 08 p1259 N68-18096 14 p2369 N68-24545 averaged properties, ve heat transfer and afer in low Raynolds Effect of radiative heat tra number hypersonic flow about [NASA-CR-94699] unt body 14 p2370 N68-24659 08 p1259 N68-18106 dixed gray gas emissivity ap intive transfer calculations 08 p1260 N68-18107 14 p2358 N64-25029 racy of radiative heat transfer and flow field is in rocket plame calculations d ee distorted mod theory for pro os p1260 N68-18111 Initial value computation of radiative trans n of resolvent for auxiliary 09 p1447 N68-18439 on for radiative transport of ther-flusely-emitting walls Asymptotic expansion mal energy between diffe [TR-0158/3240-20/-7] Coupling radiative hypersonic blunt body [NASA-CR-61224] 09 p1447 N68-18447 15 p2573 N68-25806 sternal radiative heat distribution in apherical Temperature profit est transfer, and di ensurement, radiative etions in Martino et (AEDC-TR-67-254) 09 p1448 N68-18508 [NASA-CR-94964] 15 p2556 N68-25807 Modified radiative surface and atmosp terms of Earth dates re model for predicting operatures on Mars in incline, radi 15 p2452 N68-26188 09 p1420 N68-18839 a solution of couces due to lunar dost pled heat transfer NASA-TN-D-4618] [NASA-CR-93594] 09 p1423 N68-19020 15 p2578 N68-26759 ion of photon opti-lators to determine by cloud and dust recombination energy in free electrons and realis-NASA-CR-89819] 16 p2735 N68-27401 [NASA-CR-70496] 09 p1384 N68-19219 tive heat transfer equa-(TR-67-55) 09 p1452 N68-19465 radiative transfer in flat plan 16 p2795 N68-27663 10 p1569 N68-19979 FORTRAN computer prop rum for finite differ Moradial aquation right fins of traper ning geometric con-cal and conical surfaces of spherical radii (NASA-TN-D-4457) 10 p1614 N68-20331 under in nessenttering lack boundaries 11 p1801 N68-20591 pherically symmetri 18 p3164 M68-29762 oth ends 11 p1803 N68-21185 18 p3186 NGC-299 ative heat transfer in systems which include ab-

18 p3107 1068-3019

03 p0413 N68-12087

SU

(P

(F

fix [N

184

(D

pe

tic

ch

RAD

RAD

ion

IS. der na

RAD

18 p3108 N68-30804

19 p3267 N68-30918

21 p3795 N68-34243

22 p3976 N68-34843

22 p3977 N68-35248

22 p3978 N68-35342

23 p4029 N68-37014

int heat in reentry vehicle

Tabular and graphical data on calculations of Chandrasekhars X and Y functions and analogs for non-COMPRESS INDUSTRIES (NASA-TN-D-4712) infrared radiative transfer in upper stratosphere and Design, development, and testing lightweight radia-tive heat shield for maneuverable reentry vehicle [GDC-ERR-AN-1133] 19 p3377 N68-31427 Radiative heat transfer from metalized rocket propellant exhaust Polynomial approximation for atmospheric model of radiative heat transfer [ECOM-6034] 21 p3718 N68-34300 Radiative heat transfer in emitting, absorbing, and scattering boundary layer Spatial distribution of radia hypersonic shock layers at angle of attack [NASA-TM-X-61224] 22 p3976 N68-34873 Radiative and convective heating during atmospher-[NASA-CR-1170] Nonstationary thermal conduction in metals with variable thermophysical properties during convective and radiative heat transfer [FTD-MT-66-173] 22 p3978 N68-35342 Transient heat transfer by combined conduction and adiation through plane layer of absorbing, nonscatter-ag, and nonemitting stationary gray medium ANL-7407] 22 p3979 N68-35585 ing, and nonemi [ANL-7407] Application of matched asymptotic expansions to radiative transfer in optically thick gas [SAMSO-TR-68-267] 22 p3981 N68-35971 Computation of shape factor for spacecraft applica-tions using digital computer program for radiative heat exchange between two surfaces [ESRO-TM-114/ESTEC/]

Hydrodynamic equations for multicomponent gas mixture under nonlocal thermodynamic equilibrium with radiation effects 24 p4243 N68-37502 RADIATIVE RECOMBINATION Radiative capture of neutrons in and between esonance, and use of epithermal capture for studying 07 p1044 N68-16520 Radiative pion absorption and structure of light 12 p1921 N68-22102 Breakdown phenomena and radiative recombination in metal barrier n-type semiconductors uctors 14 p2334 N68-25256

[NASA-CR-82347] 16 p2745 N68-27746 Effects of high energy electron irradiation on recom on spectra of gallium phosphide and nation radiatio llium arsenide 17 p2955 N68-28540

Trapping ions and vector couplings related to recom-nation spectra of complex atoms 18 p3162 N68-29844

combination radiation and bremsstrahlung of rons in field of singly ionized oxygen and nitrogen 19 p3344 N68-32054

Thermal instability effects on radiative recombina-on line intensities under conditions in H 2 region NASA-CR-96160] 19 p3370 N68-32057 tion line intensities under condit [NASA-CR-96160] Radiative capture of fast neutrons - absolute mea-urements in spherical geometry, detection of capture amma rays, activation measurements, and cross sec-son calculates. [LA-TR-68-18] 23 p4127 N68-37017

Time dependence of matter temperature and radia-tion in expanding universe model [\$AO-\$R-281] 23 p4135 N68-37337 Radiative capture and fission cross sections for uranium 235 and plutonium 239 in resonance-neutron

[BNL-TR-219] 24 p4304 N68-37435

ionization potential and heat of formation of hydroxymethylene radical IRPE-TR-66/14) 06 p0791 N68-15740 06 p0791 N68-15740 Cation-radical form tellurium, and phosph (AFOSR-68-0392) n in organic sulfur, selenium, 11 p1653 N68-21334

Formation of negative ions by ionization from heated RADIO ASTRONOMY ingites surface 12 p1834 N68-22178

Spectroscopic and kinetic studies of gas phase car-bon trifluoride radical with rapid scanning infrared spectrometer 13 p2012 N68-23386

Electron spin resonance spectroscopy for study of radicals in irradiated crystals [COO-1385-21] 14 p2211 N68-24629

Nitrogen hydrogen radicals in irradiated carraride nd X ray irradiation of alpha-ureidopropionic acid reidopropionic acid 15 p2417 N68-26552 [TID-24]47]

Activation, hot-atom chemistry, and Szilard-Chal-mers processes in organic compound [PRNC-114] 17 p2840 N68-28804

Recoil reactions of atomic carbon, and carbon 11 recoil product yield dependence on radiation dose and [IS-T-216] 17 n2845 N68-29354

RADII Upper bounds for mean square radius of elementary particles with respect to cut form factors
[JINR-E2-3509] 05 p0711 N68-14352

Determination of stellar radii by photometry, and caled solar temperature distribution for constructing tmospheric models 14 p2342 N68-24483

Correlation of lunar radii estimates obtained from earth based photographic study and lunar orbiter gravitational field coefficient measures NASA-TN-D-4636) 17 p2966 N68-28409

RADIO ALTIMETERS

Application of spacecraft borne side-looking radar naging systems and radar altimeters in oceanic and crestrial studies [NASA-CR-89983] 01 p0056 N68-10284 Performance analysis of propulsion system, retrorocket, altitude radar, radar altimeter, and televi-sion system of Sarreyor 1 spacecraft [NASA-CR-93494] 09 p1430 N68-18656 09 p1430 N68-18656 Signal processing in radio altimeter using random angle modulation

10 p1500 N68-20311 Radar altimeter recording errors caused by electrical properties of Arctic region

14 p2257 N68-25202 Design concepts and operating principles of low al-titude and high frequency radio altimeters, and inter-cept and sighting radar [JPRS-4626] 24 p4290 N68-37730 24 p4290 N68-37730

Design concepts and operating principles of low al-titude RV-2 radio altimeters, and high frequency radio 24 p4290 N68-37731

RADIO ANTENNAS

Heating equipment for clearing snow and ice deposits from Tacan monitor antenna faceplates [FAA-RD-67-6] 01 p0046 N68-10347 Antenna design and very high frequency repeater ex-eriment carried on applications technology satellite transcences of the communications [NASA-CR-90507] 02 p0272 N68-11831 X band input transmission line evaluation, high im-pact circular-cup radiator development, spacecraft an-tenna development, and radiation from electric dipole in circular plasma column

03 p0322 N68-12325 Active antenna component characteristics and appli-ations in miniaturization of large frequency band-idths and electronically controlled antennas RAE-TR-1242] 05 p0630 N68-14234 [RAE-TR-1242]

Flexible body analog computer program and rigid body digital computer program for calculating dynamic characteristics of double-V antennas on Radio Astronomy Explorer satellite [NASA-CR-962] 08 p1153 N68-18144

Portable automatic calibration tracker to improve ngular calibration of antennas and radio satellite acking systems in STADAN /Satellite Tracking Net-08 pl 150 N68-18181 [NASA-TM-X-63116]

data for millimeter wave ne observations 12 p1966 N68-22248 Noise, gain, and antenna date radiometers, and lunar eclipse ob [NASA-CR-94314] Summary of development of antennas for use in roadcasting, radio astronomy, and radio communica-

16 p2621 N68-27299 Design and fabrication of midfed titanium whip antennas for submarines
[AD-665004] 19 p3237 N68-31266

Tables of solar radio flux data recorded at 10,700, 2,700, and 960 Mc/s [\$R-009] 01 p0130 N68-10426 lonospheric research in antennas, related equipment, adio astronomy, and radar astronomy 01 p0058 N68-10643

Planetary temperatures of Mars, Jupiter, and Venus at wavelength of 8.6 mm obtained by radiometry [AFCRL-67-0409] 02 p0268 N68-11774 Optical and radio astro nd galaxies omy views of planets, stars,

onospheric physics, and radar and radio astronomy earch programs of Arecibo /Puerto Rico/ lonospheric Observatory [SEL-67-089] 04 p0499 N68-13097

Quasars and strong radio sources, dense star systems evolution, stellar collision dynamics, coamic ray elec-trons, intergalactic hydrogen absorption lines, and stel-[CRSR-284] 04 p0575 N68-13307

High gain ultrahigh freque sign and characteristics ncy backfire antenna for communications. telemetry, and radio astroi [AFCRL-67-0568] 05 p0631 N68-14623 Radio measurements of planetary nebulae thermal

[AD-663168] 07 p1079 N68-16490 Interferometer ob quaser 3C 237B [WRE-TN-APD-9] eter observations of angular dimensions of 07 p1081 N68-16687

Lunar craters as parabolic reflectors for radio as-tronomy 08 p1236 N68-17353 Design criteria and calibration techniques for low

frequency radio astronomy space probes [NASA-TM-X-63129] 09 p1304 N68-19081 Developing space radio and nethods and large aperture radio to and radar astronomy 10 p1596 N68-20380

Radio astronomy study of galactic radio sources in 10 p1598 N68-20535

Spectral line interferometry and interferometer noise [ESD-TR-67-595] 11 p1747 N68-21518

Summarized information on radiation environments at radio frequencies of moon, planets, and space beyond solar system [APCRL-67-0621] 11 p1787 N68-21801 East-west structure of radio sources obtained with variable spacing interferometer

12 p1965 N68-22030 Spherical models of one dimensional electron densi-ty distribution in NGC 6523, 6611, 7000, and IC 410 12 p1866 N68-22074

Hydrogen component spectra analyses of small alactic regions

14 p2345 N68-24809 Bibliography of publications of work in radar and ESD-TR-68-561 15 p2449 N68-26331

Ideas on act [MEMO-12] 15 p2562 N68-26836 unmary of radio use in satellite launching and ined space flight in U.S.S.R.

16 p2620 N68-27289 o astronomy for deter-universe 16 p2756 N68-27296 Radio telescopes used in ra-mining chemical composition of

titude radio star scintil-heric absorption 16 p2657 N68-27908 Relationship between high la lation data and riometer ionospi [D1-82-0702] Radio interferometry, etry, and sources, and

[AFOSR-68-0530] 18 p3167 N68-30726 Applying extraterrestrial radio sources to antenna ain, efficiency, and radiation patterns for radio as-[AFCRL-68-0231] 19 p3237 N68-31256

Fan beam model for pola ais on supernovae remnants [AD-67[151] rization distribution analy-19 p3362 N68-31860 Radio telescope observations on supernovae

INRC-TT-13231 19 p3371 N68-32181 Report of Joint Satellite Studies Group, Oslo [JSSG-3] 20 p3585 N68-32450

Literature survey on measurements of tropospheric absorption of radio waves using radio astronomy techniques (RTS-4695) 20 p3469 N68-32537

A-1018

X

0,

26

13

14

8.

17

ly r-

7

17

ia L

n

sical method for solar wind measure-[NASA-CR-96274] 20 p3591 N68-33307 Molecular absorption of radio waves in atmospheric oxygen and water vapor as determined by radio as-20 p3476 N68-33571 Numerical analysis of planar motion of dynamic model representing kilometer wave orbiting telescope to investigate feasibility of concept (NASA-CR-96630) 21 p3764 N68-33641 Large imaging X ray telescope and long wave radio stronomy interferometer system for use in orbital 21 p3780 N68-34657 Formation of radiation pattern of radio interferometers by frequency multiplication
[FTD-HT-67-493] 22 p3839 N68-35876 22 p3839 N68-35870 Feasibility of orbiting paraboloidal antenna for low frequency radio astronomy [NASA-CR-1201] 24 p4345 N68-37900 RADIO ASTRONOMY EXPLORER SATELLITE Radio Astronomy Explorer satellite radiometer stem for measuring spectral energy distribution of system for measurm solar bursts [NASA-CR-91288] 04 p0506 N68-12859 Flexible body analog computer program and rigid body digital computer program for calculating dynamic characteristics of double-V antennas on Radio As-tronomy Explorer satellite [NASA-CR-962] 08 p1153 N68-18144 08 p1153 N68-18144 Design, development, and static firing tests of apogee kick motor for Radio Astronomy Explorer Satellite [NASA-CR-93965] 11 p1777 N68-21097 Radio Astronomy Explorer satellite radiometer for seasuring cosmic noise in vicinity of 100 meter wavelengths [NASA-TN-D-4634] 16 p2666 N68-28327 Test equipment for in-situ optical reflectance measurement of zinc titanate over Lexan target material on RAE-A natellite after proton and ultraviolet translation [NASA-TM-X-63354] 22 p3896 N68-35589 RADIO ATTENUATION
NT MANDELSTAM REPRESENTATION Radio propagation in reentry plasmas [D1-82-0698] 10 p1495 N68-19674 mation rate of very low radio frequency waves ating over Antarctic region 14 p2224 N68-25201 Upper atmosphere and space research on Cosmos sunchings, solar flares and winds, radio wave absorp-ion, isotropic turbulence, and satellite motion stellite motion 15 p2458 N68-25827 Radio wave attenuation through ELDO launch vehi-e exhaust ionized gazes cle exhaust ionized gase [LRBA-E-1311-NT-1] 17 p2849 N68-28658 Rocket exhaust research in areas of direct impingement heating, backwash base heating, radio signal attenuation, and interference with line of sight to ground 17 p2986 N68-29006 Attenuation effects resulting from bombardment of polar D region by high energy protons generated by solar flares - effects on non-inverse frequency squared 17 p2879 N68-29098 RADIO ATTENUATION MEASUREMENT PROJECT Coordination of reentry plasma measurements with flight data ascertained by RAM, FIRE, Gemini, and Mercury projects (NASA-TM-X-60771) 04 p0576 N68-13351 RADIO AURORAS Auroral input-output experimental simulation of ionospheric radio and radar blackout effects [LMSC-8-79-68-1] 15 p2462 N68-26418 Properties and interpretation of VLF emissions manating from magnetosphere 21 p3687 N68-34646 RADIO BEACONS
NT OMNIDIRECTIONAL RADIO RANGES Onboard range and range rate measurements of lanar beacons for position and lunar orbit estimation [NASA-TM-X-1529] 09 p1423 N68-19064

(SAMSO-TR-68-155)

ter for radio guidance equatiom 15 p2499 N68-26285 Geographical ionospheric electron distribution and lensity from Faraday rotation of Explorer satellite adio beacoms 17 p2876 N68-28412 Development and deployment of drifting automatic radiometeorological stations
[RM-5624-PR] 18 p3110 N68-30402 High frequency re ADIO BLACKOUT
U BLACKOUT (PROPAGATION)

RADIO BROADCASTING U BROADCASTING Computer program ion calculations (IER-45-ITSA-45) 19 p3240 N68-31482 RADIO BURSTS

NT SOLAR RADIO BURSTS

NT TYPE 4 BURSTS Performance and design specifications for missile test range radio command system in 4400 to 5000 Mc Atmospheric model for calculating sudden iono-heric frequency deviations caused by solar X ray and IRG-103-671 21 p3661 N68-34341 Financial, economical, and legal concepts relevant to otential domestic applications of artificial satellites in radio bursts [IER-43-ITSA-43] 20 p3471 N68-32936 RADIO COMMUNICATION

NT PULSE FREQUENCY MODULATION

TELEMETRY 22 m3834 N68-35242 Spectral studies of signals present in command and ommunications system uplink transmitter of feature 5 adio frequency tracking and ranging systems NASA-CR-98033] 23 p4023 N68-37208 NT TELEPHONY NT TELEPHOTOMETRY communications systematic frequency track [NASA-CR-98033] Electro-geographical classification systems for deter-ining environmental features affecting short-range ctical radio systems Lunar Orbiter 5 side-ic power spectral densities keyed waveforms looking radar experiment, and es for binary frequency shift 02 p0182 N68-11710 23 p4024 N68-37420 nission loss and correlation coefficients in in-rrain at 20, 50, and 100 MHz 03 p0338 N68-11970 RADIO CONTROL regular ter Structure and design characteristics of radio-cybernetic systems, control signal parameters, and noise reduction techniques [JPRS-44470] 07 p0963 N68-18524 de to obtain high Q factors for frequency preselector that reduces frequency presel ations 05 p0636 N68-14459 Experimental FM multiplexing transponder system for remote radio control and telemetering [NCEL-TR-574] 15 p2429 N68-26867 navigation satellite system for air on and traffic control 07 p1087 N68-17172 and marine navigation
[NASA-CR-86028] Development and deployment of drifting autor radiometeorological stations [RM-3624-PR] 18 p3110 N68-3 Methods of evaluating capabilities of civil defense ommunication systems to meet operational require-nents during and after nuclear attack CAL-VP-2269-H-5] 08 p1147 N68-17859 18 p3110 N68-30402 communication systems to ments during and after nucle [CAL-VP-2269-H-5] RADIO DIRECTION VINDERS [DSD-R-161] of p0476 N68-13052 Ambiguity resolution for SPASUR radio inter-ferometer direction finding system. tical analysis of exte Feasibility study of direct broadcast of voice programs from unmanned satellite to home receivers [NASA-TM-X-52409] 10 p1500 N68-20260 ent and facilities in U.S.S.R. and China [ATD-68-10-33-1] 11 p1665 N68-21842 Signal processing techniques for airborne range and orbit determination system, and direction finding Signal optimization for chann els with feedback 13 p2025 N68-23126 INASA-CR-616681 ural environ 10 p1496 N68-19826 ental effects of earth and its aterison methods for acco-ng in sector 12 p1843 N68-22281 odband amplitude compa sicrowave direction finding mouphere on radio (ESD-TR-67-631) 13 p2030 N68-24263 (RAE-TR-67271) Electromagnetic wave propagation in lithosphere, and water - radio communications, electric propers, electrical measurements, antenna efficiencies, an authematical models natic direction finder system performance analysis [D6-20972] 24 p4224 N68-37723 mathematical mod [AGARD-CP-20] profes por 14 p2223 N68-25187 RADIO ECHOES Statistical characteristics of radio echoes from aporadic meteors Effects of dielectric-metal discontinuity on elec-comagnetic communications over ground, soil, and sea tromagnetic communicatio 06 p0837 N68-15406 14 p2224 N68-25190 Flight tests for false echoes received by Tacan distance measuring equipment [SRDS-RD-68-8] 17 p2912 N68-29417 Feasibility of lithospheric radio propagation 14 p2224 N68-25194 Attenuation rate of very low radio frequency waves propagating over Antarctic region Meteor radar system for wind and density measure-ments in upper atmosphere 14 p2224 N68-25201 23 p4092 N68-36375 ination for electromag-waveguide 14 p.2251 Nes-25206 RADIO ELECTRONICS Propagation constants de etic waves of earth-ionosp Reliability, repairability, and operation of icromodules for shipboard radio electronic equip-Feasibility of radio const linear antennas ation between earth IJPRS-432741 01 p0039 N68-10695 14 p2225 N68-25208 methods of ra Extremely low frequency as earth mode communications by nd ultra low frequency dipole antenna 14 p2225 N68-25210 FTD-HT-66-266] 04 p0488 N68-13165 d in shipboard radioclec-Electronic compute tronic and compute [JPRS-43890] technique based on Antijam communication 05 p0637 N68-14521 15 n2428 N68-26513 Electrical parameters, circuit diagrams, and struc-tural form of ladder network artificial delay lines 05 p0637 N68-14522 History of developm broadcasting in U.S.S.R. [FTD-MT-65-496] of radio and television 16 n2620 N68-27287 History of radio con cation development in 05 p0637 N68-14523 Polycrystal ferrites with na on lines at superhigh frequency radio equipment erow resonance absorp-sencies for use in high Techniques for improving broadcasting by increased effectiveness of relay systems 05 p0637 N68-14527 16 p2621 N68-27291 tractional assemblies on flat modules for sic, computer, and basical circuit design 05 p0638 N68-14529 route components for radioelectronic and immary of development of antennas for use in adcasting, radio astronomy, and radio communica-16 p2621 N68-27299 Data transmission tests on high frequency radio com-mication system ANDEPT/SC-320 05 p0638 N68-14530 th in access of bior 17 p2854 N68-29284 MTR-5651 Review of ionospheric resistudies on understanding resolar terrestrial relationships [NASA-CR-95699] ch studies and impact of [AFOSR-67-2342] 17 p2881 N68-29397 0818 N68-15539

nication problems in

17 p2855 N68-29502

polar regions [AGARDOGRAPH-104]

16 p2622 1008-27300

f light and quar

SUI

RAD

10

RAD

du [II

RAD

13

[A

ter (N

les [A

for [N

Cost calculation methods for estimating economic effectiveness of improved component and structural re-liability of radio electronic systems [NASA-TM-X-61022] 18 p3045 N68-29890 Airborne radar and radio electronics training courses 19 p3215 N68-31387 [NPRA-STB-68-10] Impact acceleration m and FM/AM telemetry [NASA-TM-X-61204] ured by accelerometers 21 p3693 N68-34442 plifier designs 23 p4034 N68-37378 Transistorized logari (FTD-MT-24-118-67) Progress and recent finding cal, physical, quantum, and p acoustics, radio, and informati [AFOSR-68-0890] s in research on biomedi-plasma electronics, and in sciences 24 p4239 N68-37784 RADIO EMISSION

NT SOLAR RADIO BURSTS

NT SOLAR RADIO EMISSION

NT TYPE 4 BURSTS Decametric observations of Jupiter during 1967 ap-NASA-TM-X-55996) 01 p0132 N68-10003 Effect of satellite to on decametric radio emission of spiter discussed in terms of co-rotation of magneto-[NASA-TM-X-55980] 01 p0133 N68-10123 Probability distribution for predicting decametr [WRE-TN-APD-10] distribution and computer program used decametric radio emission of Jupiter PD-10] 08 p1235 N68-17311 Spectrum analysis of radio frequency emissions from polar cap absorption [NASA-CR-65996] on events 09 p1333 N68-18824 Flux density measurements of 560 radio sources in 86 megahertx frequency [NASA-CR-94[12] 11 p1784 N68-21464 11 p1784 N68-21464 Theoretical and experimental studies in whistle propagation, wave-particle interactions, and VLF emis (AFOSR-68-0219) 13 p2056 N68-23097 Stability of new radio flash code based on Maxwell quations for axially symmetric problem in polar coor-15 p2506 N68-25661 Coronal magnetic field and radio emitting electron energy from solar radio burst [NASA-TM-X-63234] 15 p2549 N68-25734 Soviet bloc research in planetary origins, solar at-comphere, luminosity functions, star density, and radio 15 p2557 N68-25823 Evidence for particle acceleration on galactic scale ased on radio galaxies observations and radio emis-on from quasars NASA-CR-84764) 16 p2753 N68-27390 Dust insulation model for blanketing of thermal and dio frequency emission in atmosphere of Venus 16 p2771 N68-28328 Radio emission from two quasi-stellar synchrotron sources and theoretical thermal history of intergalactic hydrogen gas 17 p2964 N68-28348 Coherent amplification of radio emission in cosmic [T-R-635] 18 p3159 N68-29775 Graphical data on intensity of received radio emis-sion for three orbits of Cosmos-142 18 p3036 N68-30234 Astronomical studies in U.S.S.R. - radio emission from Venus, solar mass effect on radiation pressure, chondrite structure, Arend-Roland comet, and stellar models 19 p3370 N68-32058 Venus radio emission measurements by optical guided telescope 19 p3362 N68-32059 Optical and radio emission pr uperties of quasars 20 p3583 N68-33564 Thermal regime and radio emission of Mercury NASA-TM-X-61185) 21 p3771 N68-34307 Satellite radio noise measurements during solar radio [NASA-TM-X-60475] 21 p3763 N68-34682 RADIO ENERGY U RADIANT FLUX DENSITY RABIO EQUIPMENT
NT IONOSONDES
NT OMNIBURECTIONAL RADIO RANGES
NT RADIOMETEOROGRAPHS
NT RADIOSONDES
NT RADIOTELEPHONES
NT RAWINSONDES
NT BONOBUOYS

SUPERHETERODYNE RECEIVERS TRANSMITTER RECEIVERS NT TRANSPONDERS
VERY HIGH FREQUENCY RADIO EQUIP-NT WHISTLER RECORDERS Suppressor for protecting radio equipment from effects of voltage transients in tracked vehicles [ECOM-2869] 02 p0187 N68-11088 Electromagnetic parameters of staged microsofter radioelectronic and computer applications 05 p0638 N68-14531 Aircraft accuracy tests with crab angle sensing system - radio equipment for all weather landing system 06 p0843 N68-15233 [SRDS-RD-67-51] System package design for thin film radio frequency transmitter receiver circuit modules [NASA-CR-65988] 09 p1303 N68-18780 Technical manual on cali brating radio test set AN-[NAVAIR-17-20VQ-03] 09 p1346 N68-19468 Calibration of radio set tra 1749/SRM-2 10 p1495 N68-19771 [NAVAIR-17-20BCK-1] dio frequency decoder 10 p1499 N68-20141 Calibration procedures [NAVAIR-17-20BCK-7] Procedures for calibrati [NAVAIR-17-20BCK-6] tio frequency coders 10 p1499 N68-20170 Radio frequency interferences ensitization of ELDO law mitter receiver system [ELDO-RFI-6] 10 p1501 N68-20348 Code-copying capabilities of Navy radio operate nder simulated atmospheric noise and white noi (SMRL-523) 22 p3810 N68-35207 Monte Cardiga, Italy, radio telemetry station, amen-as, and auxiliary equipment - users manual nas, and auxiliary equipment - users manual [ESRO-TN-25/ESTEC/] 23 p4022 N68-37150 RADIO FILTERS Design, and evaluation of birefringent wave filter scale model for millimeter wavelengths radio astrono-04 p0487 N68-13617 Design and solutions of proved analog voice commu [AFCRL-68-0227] 20 p3436 N68-32489 Digitally tuned scanning as for military surveillance system erheterodyne receiver 20 p3440 N68-33401 RADIO FREQUENCIES

NT C BAND

NT EXTREMELY HIGH FREQUENCIES

NT EXTREMELY LOW RADIO FREQUENCIES

NT HIGH FREQUENCIES LOW FREQUENCIES
LOW FREQUENCY BANDS
MICROWAVE FREQUENCIES
SUBAUDIBLE FREQUENCIES NT SUPERHIGH FREQUENCIES ULTRAHIGH FREQUENCIES VERY HIGH FREQUENCIES VERY LOW FREQUENCIES Biotelemetry power and frequency requiremental transmitting measurement and control data [NASA-CR-90064] 01 p0015 01 p0015 N68-10339 Principles of operation and out-of-band charac-teristics of rectangular/coaxial rotary joints (REPT.-53-5309.06) 02 p0189 N68-11473 Unity short circuit current gain frequency measured to analyze large-signal RF behavior of power transistors [ECOM-2881] 03 p0329 N68-12127 Radio frequency method of sistivity of strongly ionized plan d of measuring electrical re-04 p0555 N68-13856 Effect of external high frequency oscillation source shortening of current pulses in linear accelerators LAC-TRANS-75] 05 p0715 N68-14592 on shortening of current put [SLAC-TRANS-75] sonance spectroscopy of biologi-ules using free inductance decay radiofrequency pulses Nuclear magnetic resona illy significant molecules flowing short, intense rad

quency pulses 05 p0626 N68-14608

wave radio frequency bunds at a [REPT.-24/1965]

Very long wave propagation independent variables determined from field strength measured on ground [REPT.-23/1965] 06 p0798 N68-15343

REF : Differential equations for Ar-Differential equations for age experiment (de p1208 N68-17398

ces on usable short of p0833 N68-15342

Medium-frequency conjugate echoes analyzed on Alouette 2 topside sounder equatorial ionograms torial ionograms 08 p1173 N68-17983 09 p1411 N68-19291 Polarad spectrum analy [NAVAIR-17-20GW-07] 10 p1528 N68-19562 Design and performance ource for atmospheric entry ce of radio frequency plasma [ARL-67-0281] 11 p1762 N68-21010 Design and perform ce of passive octave band-lator using helicon waves in [REPT.-2011-1] 11 p1673 N68-21022 Numerical analysis for small deflections in walls of radio frequency cavities of orbit cyclotron [ORNL-TM-1990] 11 p1794 N68-21034 Design, construction, as cavity for storage ring of lin [SLAC-78] ting of radio frequency 11 p1680 N68-21722 Radio frequency mass gaging techniques for measur-g propellant mass content in Apollo and lunar ing propellant man module tanks [NASA-CR-92091] 12 p1959 N68-22879 Radio frequency sen evaluation of stray elecrical energy indicate NASA-CR-92106] 13 p2039 N68-23460 Four coupled loops for radio eam loaded proton synchrotron dio frequency control in RHEL/R-1581 14 p2300 N68-25491 Feasibility of cooperati radio frequency method for collision-bazard warning [NASA-TM-X-59606] 14 p2287 N68-25637 Electron wave interaction theory for crossed field stributed emission amplifiers 15 p2439 N68-25996 Critical altitudes for radio fre quency breakdown 15 p2445 N68-26896 Correlatio on type radio frequ ncy interferometer 16 p2624 N68-27819 Static and in-flight firing equency energy absorption ing measurement of radio on in solid propellant rocket 17 p2962 N68-29014 Phase compensation and tion accounting for beam to linear accelerator RF system d power transfer maximiza-loading effects on design of linear acceleral [BNL-12418] 17 p2922 N68-29315 gnetic field heating and 19 p3338 N68-31047 Computer program for quass spectrographic photog [ECOM-2968] tative interpretation of 19 p3253 N68-31619 Radio frequency gas chror graphic detectors 20 p3480 N68-33380 ol of radio frequency amplifier [LA-DC-9445] 21 p3741 N68-34414 Superconduction thin films, and properties and ap-plications of Josephson effect at radio frequencies [NASA-CR-1189] 22 p3949 N68-35178 Operational reliability of RF power transistors determined by infrared scanning techniques
[ECOM-2991] 22 p3850 N68-35998 Fermi surface of cadmium determined from calipers brained by radio frequency size effects 23 p4146 N68-36031 Particle separation with two and three cavity RF separators at CERN 2 m hydrogen bubble chamber [CERN-68-29] 23 p4113 N68-36171 Steady state bei celerator RF syste [BNL-12589] ng of standing wave linear ac-23 p4107 N68-36346 Feasibility study of u extend voice range of A [CR-68-365-3-NY] of using single frequency repeater to of AN/PRC-25 radio set 23 p4019 N68-36366 Radio frequency mea netic moments [BNL-12628] 23 p4116 N68-36473 Enhanced scattering in water Kerr cell under radio equency excitation 23 p4108 N68-36771 Radio frequency Stark spectra of rubidium fluoride, rubidium chloride, cesium fluoride, cesium chloride, and sodium iodide measured by molecular beam elec-23 p4012 N68-36853 [UCRL-17909] Radio frequency techniques, microwave thermal oise standards, radio frequency breakdown in coaxial ransmission lines, and coaxial cavity radiator develop-

23 p4024 N68-37418

183

191

62

110

122

of

icy

22

ar-

60

37

9

4

RADIO FREQUENCY DISCHARGE Anomalous diffusion in linear E-type RF discharge [ORO-3516-2] 05 p0726 N68-14821

Design and performance of linear power tube en-meering models [EIMAC-TR-68-14] 19 p3252 N68-31130

RADIO FREQUENCY HEATING

Spectral reflectance measured by reflectometer with helium neon laser source, sodium chloride coated sphere, lead suffide detector, and radio frequency generator for specimen heating NBS-TN-439 16 p.2673 N68-27413

perimental study of radio-frequency induction ng of partly ionized monatomic gas in supersonic

19 p3337 N68-30917

Temperature and electron density distribution in induction argon plasma torch
[IBJ-906/XVIII/PP] 19 p3345 N68-32168 19 p3345 N68-32168 Low temperature ashing of human feces for solid waste management onboard spacecraft [NASA-CR-73249] 23 p4003 N68-36748 VASA - Company of thermouyn - Company of the Company

RADIO FREQUENCY IMPEDANCE PROBES

Plasma density and temperature mer radio frequency plasma impedance brid [SC-RR-68-30] 14 n2 ce bridge 14 p2325 N68-25056 lonospheric comp asurements with radio frequency impedance [NASA-CR-96373] 20 p3472 N68-33197 Theory of plasma resonance

plane probe 23 p4139 N68-36311

RADIO FREQUENCY INTERFERENCE
NT ATMOSPHERICS
NT BLACKOUT [PROPAGATION]
NT CHIRP SIGNALS

ELECTROMAGNETIC NOISE

HISS IONOSPHERIC CROSS MODULATION IONOSPHERICS IONOSPHERICS

NT SHOT NOISE SUDDEN ENHANCEMENT OF MOSPHERICS THERMAL NOISE AT-

NT

WHISTLERS

Solar radio noise and optical sunspot phenomena [AFCRL-67-0508] 01 p0130 N68-10352

Transmission loss from precipitation scatter inter-ference between space and earth communication [NASA-CR-90108] 01 p0032 N68-10936

Computer prediction of network radio frequency in-reference between multiple satellites [NASA-TM-X-63050] 04 p0475 N68-12936

Matrix analysis of low pass filters and terminal im-dance for performance prediction of radio inter-

(RAE-TR-66391) 04 p0476 N68-13088 Intermodulation interference effects on pulse code modulation/frequency modulation error rates [AFETR-TR-67-9] 04 p0478 N68-13252

Symposium on superconducting devices dealing with sephson junctions, current transformers, amplifica-on and interference devices, and measurement

05 p0701 N68-14447 Radio frequency interference design guide for rospace communications systems

NASA-CR-92672 07 p0962 N68-16460

Probability distribution deri signal at input of radar receiver [WRE-TN-SAD-182] on derived for ground clutter 07 p0963 N68-16560

Geographical separation criteria between radio avigation land test stations and FM broadcast stations for radiofrequency assig [NA-67-16] 08 p1149 N68-18017

ents to determine radio nized exhaust gases 09 p1303 N68-18664 Radar atte

Radio frequency pattern and impedance tests, vibra-tion tests, radiated and power line interference mea-surements, and thermal energy behavior for electromechanical despu [NASA-CR-93735] 10 p1497 N68-19934

Radio frequency inter ence measurements on ch vehicle at Stevenage 10 p1498 N68-20070 (ELDO-RFI-10)

Radio frequency interference investigation on ELDO launch vehicle in F6/I configuration [ELDO-RFI-7] 10 p1498 N68-20071 10 p1498 N68-20071

Radio frequency interference analysis for onboard transmitter of ELDO launch vehicle configuration [ELDO-RFI-11] 10 p1498 N68-20102

Radio frequency interference measurements on elec-rical mockup system for ELDO launch vehicle as (ELDO-RFI-3) 10 p1499 N68-20191

Radio frequency interference analysis for ELDO launch vehicle configuration [ELDO-RFI-4] 10 p1499 N68-20193

Radio frequency interference measurements and esensitization of ELDO launch vehicle radio trans 10 p1501 N68-20348

iding effective electromagnetic inter-NASA-CR-61686]

11 p1672 N68-20827 Small hole approxi deflector for superco analysis on iris loade radio frequency bea

IBNL-121431 12 p1956 N68-22568 Calculated mutual interference between satellite an radio repeater systems [REPT-6097] 13 p2028 N68-2388 13 p2028 N68-23884

iques employing phase iers, and crystal filters 13 p2029 N68-24029 Interference reduction tech control, feed forward, Q multi [RADC-TR-68-8]

nts on radio frequency Effect of molecule induced plasma shield propagati [AFCRL-68-0028] 13 p2128 N68-24032

Precipitation and Off-Path Scattered Interference /POPSI/ Project studies of microwave radio and satel-lite ground transmission in same frequency bands /ta-R-6801, ANNEX A1

13 p2031 N68-24302 Precipitation and Off-Path Scattered Interference (POPSI/ project studies of microwave radio and satel-lite ground transmission in same frequency banks (R-6801) 13 p2031 N68-24304

Threshold performance of phase locked loop demodulators, equivalence of frequency modulated threshold extension receivers, and frequency modulation multipath interference [NASA-CR-94775] 14 p2226 N68-25366

Low and high power radio wave transmission in 15 p2428 N68-26569 [AFCRL-68-0077]

Systems analysis and design of electromagnetic inter-ference measuring instrument [ECOM-02328-F] 16 p2659 N68-27039

Tracking errors caused by radio frequency interference to Minitrack system, and analysis of phase locked loop with interference [NASA-CR-95227]

16 p2623 N68-27646

ELDO launch vehicle anter [ELDO-RFI-5, APP. 1, V. 2] radiation patterns 17 p2848 N68-28526

ELDO launch vehicle and iation patterns for AJAX TM 2 aerials [ELDO-RFI-5, APP. 1, V. 4]

17 p2849 N68-28644 ELDO launch vehicle anter (ELDO-RFI-5, APP, 1, V, 51 radiation patterns

17 p2849 N68-28649 ELDO launch vehicle antenna radiation patterns for AJAX TM 1 aerials [ELDO-RFI-5, APP. 1, V. 3]

17 p2849 N68-28650 radiation patterns ELDO launch vehicle anter IELDO-RFI-5, APP, 1, V, 61

17 p2849 N68-28713 Signal to noise ratio used radio receiver for use in intenetic compatibility evaluation [ECOM-2924] d in mathematical model of sterference and electromag-18 p3037 N68-30416

Radio frequency interference and noise of parabolic untenna as function of elevation and azimuth angles [SRDE-67004] 18 p3037 N68-30442

ELDO launch vehicle anter (ELDO-RFI-5, APP. 1, V. 1) 19 p3237 N68-31239

Polar cap absorption cor tive solar regions, and assoc [NASA-CR-92210] d with RF profiles ac-9 p3361 N68-31352 n of cross modulation Circuit tuning for elin coupling in radio receiver [FTD-HT-67-388]

19 p3242 N68-31697 Design of contact devic 20 p3451 N68-32678 [EE-1643]

of de fiel pump motor to terference 21 p3658 N68-34140 Details of design ch reduce low frequency radio in [RAE-TR-67269]

22 p3916 N68-35128

Techniques for measuring radio frequency inter-trence and susceptibility in shielded enclosures, and coded antenna optimization 22 p3835 N68-35425

Test and specification checkout of taut band passel OR-31 24 p4259 N68-38205

theory to radio frequen-FTD-MT-24-251-67] 24 p4229 N68-38316

RADIO FREQUENCY NOISE

U ELECTROMAGNETIC NOISE

RADIO FREQUENCY SHIELDING

Design theory and applica electromagnetic shielded room ns and cabinets 22 p3915 N68-35125

RADIO GALAXIES

Radio astronomy study of galactic radio sources in rth polar region 10 p1598 N68-20535

of extraterrestrial radio waves in galactic ape [AFCRL-67-0546] 11 p1780 N68-20765

Evidence for particular particula ration on galactic scale vations and radio emis-

sion from quasars 16 p2753 N68-27390 Unified theory for spiral and radio galaxies 21 p3768 N68-34218

Magnetic field configuration in galactic spiral arms 21 p3768 N68-34219

RADIO INTERFEBOMETERS

ometric optical spectral 04 p0574 N68-13102 SPASUR radio inter-

05 p0630 N68-14378

of ozone measuring sonde 09 p1335 N68-19015

Spectral line interferometry and interferometer some

(ESD-TR-67-595) 11 p1747 N68-21518 sources obtained with

12 p1965 N68-22030

Conxial cables for carrying very high frequencies under interferometer signs different environme [RAE-TR-66323] 18 p3032 N68-29597

antennas to form X band rade Venus radar ochoes to ma Operation of coupled a interferometer to use because the planets surface [ESD-TR-68-18] 18 p3164 N66-3008

etry, and sources, and Radio interferometry, po icrowave antennas for rad (AFOSR-68-0530) 18 p3167 N68-30726

Instrument landing systeming System /FIPS/ ur rometer technique for ar Flight Inspection Pos radio frequency inter 20 p3526 N68-32811

Formation of radiation ters by frequency multipli [FTD-HT-67-495]

RADIO METEOROLOGY

Radio meteorological experiment to measure ray ath bending in troposphere by means of vertical inter-[MTR-118, V. 1] 02 p0180 N68-11287

n of isotopic electric power 12 p1903 N68-21974

cal extreme and mean loconde accents at Ber-12 p1901 N68-22874

67 12 p1901 N68-22875

RADIO METEORS

(P-3779) oric bodies 08 p1239 N68-17778 n of dust in solar system cuti-

16 p2762 M68-27503

SUL

tim (T

IA.

WE N

RAD

RADI

E

2

THE PERSON

NT

[N

D

(FT

E

(N/

Flux density measurements at megahertz frequency (NASA-CR-94112)

04 p0476 N68-13209

rements of 560 radio sources in

11 p1784 N68-21464

Magnavox model B receiver mo [CM-R15-2.4] Orbits of meteor bodies and origin of hard com-onent of interplanetary medium Transportable satellite omilitary signal processing cations terminal for 10 p1502 N68-20418 16 p2762 N68-27504 Radio signal phase instability produced by propaga-on medium, radio transmitters and receivers (GO-676) 12 p1864 N68-21847 04 p0477 N68-13211 Mass distribution and influx of micrometeoroids and radio meteors using OGO-2 satellite [NASA-CR-95692] 17 p2970 N68-28892 que implementation in d terminal 04 p0477 N68-13214 Sequential decoding tech satellite communications gro Interference reduction techniques employing phase control, feed forward, Q multipliers, and crystal filters [RADC-TR-68-8] 13 p2029 N68-24029 RADIO NAVIGATION
NT HYPERBOLIC NAVIGATION
NT LORAN
NT LORAN C
NT TACAN
NT VHF OMNIRANGE NAVIGATION Proposed Phobos landi ng for radio signal analysis of Mars topography during oct [NASA-TM-X-60921] tion 09 p1424 N68-19139 Radio receiver to track phase modulated very low Polarad spectrum analy: [NAVAIR-17-20GW-07] [RAE-TR-67258] 14 p2222 N68-24969 10 p1528 N68-19562 Review of improvements in radio receivers 16 p2622 N68-27302 Scintillations studies in up radio signals from Early Bird [AFCRL-67-0655] Precipitation effects on Omega aircraft radio navigar atmosphere using VHF tion receivers [NRL-MEMO-1810] Systems feasibility analysis of voice broadcasting to home radio receivers from communication satellites [NASA-CR-95491] 17 p2850 N68-28877 11 p1658 N68-20656 02 p0235 N68-11773 Use of composite signals at very low radio frequen-Radio/optical/strapdow n inertial guidance systems [NASA-CR-86012] 03 p0367 N68-12250 Graphical data on intensity of received radio emis-sion for three orbits of Cosmos-142 [TR-552] 11 p1664 N68-21610 Deep space network tracking and radio navigation couracy analysis, high-rate telemetry, and communi-Radio signal phase instability produced by propaga-tion medium, radio transmitters and receivers [KGO-676] 12 p1864 N68-21847 18 p3036 N68-30234 Signal to noise ratio used in mathematical model of radio receiver for use in interference and electromagnetic compatibility evaluations [ECOM-292] | 18 n3017 N48-30414 cations and facility engineering [NASA-CR-93821] 10 p1501 N68-20335 Signal optimization for chans Use of composite signals at very low radio frequen-13 p2025 N68-23126 11 p1664 N68-21610 Microelectronic electronically tuned receiver tuner for determining feasibility of thin film microelectronics [AGC-1166-01-3] 18 p3037 N68-30478 eous frequency and dynamic bandwidth Hyperbolic low frequency radio navigation for surface and air vehicles - Omega
[TDCK-50192] 13 p2104 N68-23973 concepts for phase mod [TR-0158/3230-46/-4] 13 p2104 N68-23973 13 p2025 N68-23245 Circuit tuning for elimination of cross modulation coupling in radio receiver [FTD-HT-67-388] 19 p3242 N68-31697 Radio and radar navigation development and im-provement in U.S.S.R. Minimizing peak-to-average power ratio of radio signals by proper selection of phase spectrum 16 p2621 N68-27295 14 p2222 N68-25025 Functional capabilities and physical arrangement of receiver exciter subsystem in unified 5 band Apollo communications and tracking ground station system [NASA-CR-96384] 20 p3438 N68-33162 Flexible incremental phase servo with digital outputs for indicating phase and Doppler frequency of ionospherically propagated radio against 15DL-7] 16 p2618 N68-27059 Integrated radio-inertial navigation and guidance for ELDO launch vehicles 17 p2910 N68-28531 Evaluation of performance and cost estimates of radio and inertial navigation and guidance systems for European space programs Digitally tuned scanning superheterodyne receiver for military surveillance systems Daily curves of ionospheric electron content in lunar 20 p3440 N68-33401 radio echoes [AD-668663] 17 p2910 N68-28532 Joint Satellite Studies Group spaced receiver mea-surements of height of ionospheric irregularities [AFCRL-68-0365] 22 p3870 N68-35490 Relationship between acintillations and spread-F de-tected by topside sounder Alouette I satellite 17 p2879 N68-29094 Project management and phase difference and field tensity patterns for Omega system noise and antenna study [P&B-PUBL.-979-8, V. 2] RADIO RECEPTION Reception characteristics of elliptically polarized wave by elliptically polarized antenna Polarization follower system for recording Faraday rotation of satellite beacon signals 17 p2879 N68-29095 21 p3722 N68-34748 RADIO OBSERVATION 14 p2220 N68-24357 Meteoritic radiance and ionization observations in Ionospheric electron density, slab thickness, and scintillations from Faraday polarization of beacon satellite radio signals [AFCRL-68-0314] 19 p3268 N68-31078 Noise subtractive threshold detector for radio recepearth atmosphere [NASA-CR-93816] 10 p1525 N68-20463 [G3681.02.05A] 15 p2468 N68-26456 Observation and forecasting of solar proton events 13 p2147 N68-23939 RADIO RELAY SYSTEMS Characteristics and parameters of high altitude radio Engineering design of trans sponder system for phase Venera 4 measurements for evaluating radio as-tronomical ground observations of Venus [NASA-CR-96884] 22 p3958 N68-34952 relay systems [ECOM-0006-1] measurement of very low frequency [NASA-CR-61922] ncy signals 19 p3238 N68-31296 01 p0030 N68-10716 Passive relaying to increase distance between active points in radio communication network

06 p0801 N68-15977 Measurement of wind in boundary layer by radar reflections from clear air compared with wind speed and direction obtained by radio-pilot observations [M-7394] 22 p3873 N68-35973 Method for correcting amplitude signals in mul-FTD-HT-67-3791 19 p3241 N68-31616 Statistical analysis for operational reliability of radio Theory of signal detectability omposite hypothesis situation - extension to double relay lines (FTD-HT-67-68) RADIO PHYSICS 11 p1661 N68-21427 [TR-192] 22 p3835 N68-35379 Summary of radio relay development and application in U.S.S.R. Advances during 1966 in astronomy, exobiology, mospheric sciences, radio and solar physics, and insetary atmospheres and planetology NASA_RJ_GAT Time and latitude observationabulated for April-June 1966 s and radio time signals 16 p2621 N68-27290 NASA-SP-155 etology 06 p0913 N68-15748 23 p4056 N68-36843 Techniques for improving br effectiveness of relay systems adcasting by increased Time and latitude observations and radio time signals tabulated for July-September 1966 23 p4057 N68-36844 Dual frequency very high frequency radar observa-ons of solar and galactic noise, lunar echoes, ground ackscatter via ionospheric reflection, and echoes from 16 p2621 N68-27291 Design feasibility of orbiting stellites /PasComSat/ as global wire grid experimental radio links 16 p2773 N68-27920 Time and latitude observations and radio time signals tabulated for October-December 1966 23 p4057 N68-36845 WRE-TM-PAD-223] 07 p0963 N68-16592 Theoretical, and experimental study programospheric, and solar radio physics 07 p1082 N68-16955 Space communications prop gation studies 17 p2853 N68-29111 Parameter probability density distributions for gaus-sian pulse and radio signals Unusual communications of conventional civil defense systems [AD-669635] Summary reports on research in solid state physics, radio physics, data systems, and communications [DOR-533] 08 pl150 N68-18078 24 p4223 N68-37697 RADIO SOURCES (ASTRONOMY) NT CASSIOPEIA A NT QUASARS Summaries of studies in nuclear chemistry and physics, reactor physics, radiochemistry, radio physics, electronics, and mathematics [HMH-B-50] 09 pl 383 NAS. 19043 18 p3034 N68-29825 Feasibility study of using single frequency repeater to extend voice range of AN/PRC-25 radio set [CR-68-565-5-NY] 23 p4019 N68-36366 Tuning large antennas in near zone with methods of antenna parameter me natural cosmic radio emission sources as in near zone for comp ces in far zor ata systems, radio physics, radar equipment, and RADIO SCATTERING radio astronomy ob [FTD-HT-67-309] Plasma resonance during radio wave scattering on seteor trail models 02 p0180 N68-11233 13 p2042 N68-23151 Health physics and biomedical research dealing with aerosols, radiation physics, metabolism, and dosimetry [AERE-PR/HPM-12] 14 p2207 N68-25357 06 p0837 N68-15405 Mathematical model for ejection mechanism of extragalactic radio sources [NASA-CR-91807] Statistical ray analysis of radio wave scattering by anisotropically turbulent nonhomogeneous solar 06 p0914 N68-16025 X ray survey of spectral emission and X ray sources of Cygnus and Scorpio regions [NASA-CR-80280] 07 p1075 N68-16118 RADIO RECEIVERS NT SUPERHETERODYNE RECEIVERS
NT TRANSMITTER RECEIVERS
NT WHISTLEA RECORDERS [NASA-CR-92698] 07 p1075 N68-16270 RADIO SIGNAL ABSORPTION

U ELECTROMAGNETIC ABSORPTION Four dipole, high directivity antenna for radio as-Adaptive detection of nonsynch [NASA-CR-69933] 0 RADIO SIGNALS [NASA-CR-92992] chronous signals 09 p1304 N68-18953 07 p0961 N68-16254 Radio signals for controlling missiles [FTD-HT-66-486] 01 p0088 N68-10829 Model for quasar continuous to 3C 273B [SU-IPR-215] Calibration procedure for TS-1325/TRC-75 radio m radiation with applica-Design, and development of satellite communica-tions ground terminals on moving vehicle - vocoders for speech compression, signal modulation, and auto-10 p1587 N68-20180 [NAVAIR-17-20AQ-42] 10 p1527 N68-19520

Calibration procedure for tiplier and radio receiver [RAVAIR-17-20BCK-5]

nplifier-frequency mul-

10 p1499 N68-20142

i for

1211

n in

214

is of

139

562

/HF

656

610

ıga-

847

126 dth

345

325

159

nar

135

de-

194

lay

95

and one

78

-

ul-

16

ile

als

43

alu

sh

45

e ar

13

15

25

8

4

0

01 p0032 N68-10920

02 p0231 N68-11343

02 p0183 N68-11893

lio propagation charac-

Q3 p0319 N68-11973

03 p0321 N68-12182

06 p0797 N68-15300

07 p1017 N68-16540

07 u0992 N68-16800

n experiment from Ap-

06 p1149 N68-18052

vior and parameters of tannels at high altitudes 09 p1301 N68-18355

10 p1587 N68-19889

10 p1523 N62-20082

11 y1639 N68-20766

12 p1842 N68-21880

ts of earth and its at-tion systems 13 p2030 N68-24263

method for occupie

14 p2223 N68-25100

15 m2461 N68-26310

15 p2428 N68-26569

d very high frequency

16 p2621 N68-27298

16 p2763 N68-27521

tationary safe

ng using radio trac

ructure, and time va a determined by ra ir 6 and 7 spacecraft

of plane and spherical

Summarized information on radiation environments at radio frequencies of moon, planets, and space beyond solar system. (AFCRL-67-0621) 11 p1787 N68-21801 East-west structure of radio sources obtained with variable spacing interferometer 12 p1965 N68-22030 Soviet-bloc news reviews and abstracts of research dealing with astronomy, radio sources, and planetology 14 p2343 N68-24531 Primary sources for large radio telescope with mul-timode, elementary horns
[TIL/T-5747] 17 n2848 N48 28282 17 p2848 N68-28382 microwave antennas for radio astronomy [AFOSR-88-0530] Another Anather antennas for radio astronomy [AFOSR-88-0530] Applying extraterrestrial radio sources to antenna ain, efficiency, and radiation patterns for radio as-[AFCRL-68-0231] 19 p3237 N68-31256 Galactic OH absorption in northern hemisphere radio sources 24 p4305 N68-37476 RADIO SPECTRA

NT MICROWAVE SPECTRA Radio Astronomy Explorer satellite radiometer for seasuring cosmic noise in vicinity of 100 meter [NASA-TN-D-4634] 16 p2666 N68-28327 RADIO STARS Quasar model based on relaxation oscillations in au-NASA-CR-91336] 04 p0576 N68-13362 Radiometer measurements of cosmic microwave background, and oxygen hydrogen emission line spec-tra of stellar radio sources 04 p0570 N68-13463 Radio astronomy study of galactic radio sources in north polar region 10 p1598 N68-20535 Relationship between high latitude radio star scintil-lation data and riometer ionospheric absorption [D1-82-0702] 16 p2657 N68-27908 Auroral zone radio star scintillation measurements and interpretations 17 p2879 N68-29097 Radio telescope observations on supernovae [NRC-TT-1323] 19 p3371 N68-32181 RADIO TELEGRAPHY Development of phase telegraphy in U.S.S.R. 16 p2621 N68-27292 Experimental study of channel spacing and transmission speed in voice frequency radio telegraphy systems [TRANS-2383] 22 p3834 N68-35238 RADIO TELEMETRY FREQUENCY MODULATION PULSE TELEMETRY satellite ground radio station
[TIL/T-5750] 05 p0631 N68-14783 Assembly and devel tions of transmitter an communications and te opment of radio frequency por-id receiver in thin film personal 07 p0967 N68-17170 [NASA-CR-65937] Vostok 3 and 4 biot [NASA-TT-F-11528] 08 pl 134 N68-18193 Design and function ter frared radiometer pulse co for Nimbus C experiment for Nimbus C experi [NASA-CR-93509] 09 p1305 N68-19208 s of ground and spacecraft using system for Jupiter mis-11 p1662 N68-21481 Design and perform ic low pass filter for subcarrier oscil [HDL-TM-67-24] system p2027 N68-23615 [FTD-HT-23-765-67] try equipment 20 p3434 N68-32353 analysis of unified S Evaluation and perf band system for Apollo [NASA-CR-96289] 20 p3437 N68-32711 Impact acceleration and FM/AM telemetry [NASA-TM-X-61204] red by accelerometers 21 p3693 N68-34442 ting of Nimbus B PCM test equipment, and Design, manufacture, and te lemetry subsystem, bench

Design and operating characteristics of 100 watt, 50 ercent efficient, 5-band traveling wave tube for space communication and telemetry applications NASA-CR-97222] 23 p4031 N68-36587 Design aspects of forward error control equipment for high frequency radio circuits used for digital data [NASA-CR-97222] MTR-362] Monte Cardiga, Italy, ranas, and auxiliary equipme: [ESRO-TN-25/ESTEC/] adio telemetry station, anten-ent - users manual 23 p4022 N68-37150 tions affecting ray path orferometer and lake our-Integration and testing of thin film personal communications and telemetry system
[NASA-CR-92323]
23 p4023 N68-37330 [MTR-118, V. 2] High-speed HF radio transmissions for global lecommunication system in World Weather Watch RADIO TELESCOPES PB-174842) Radio-radar telescope and related studies at Arecibo losspheric Observatory [AFDSR-67-2037] 01 p0047 N68-10617 transmission loss and correlation coefficients in ir-regular terrain at 20, 50, and 100 MHz [ITSA-35] 01 p0047 N68-10617 Radio telescope photo studying star image vibrati [FTD-HT-66-596] ric balance method of Satelline 06 p0848 N68-16078 [AFCRL-67-0374] Developing space radio methods and large aperture rad and radar astronomy Earth surface pro telescope 10 p1596 N68-20380 (FTD-HT-66-264) Gain measurements of horn antennas for use in o parabolic radio telescopes [NASA-CR-93969] standard electromagnetic arements to obtain propaga-ath role in intermodulation catter test circuit Noise-power-ratio measu on data for evaluating p stortion of tronospheric a 11 p1660 N68-20846 (ESSA-TR-IER-41-ITSA-41) es of 210 foot radio Structural vibration mo lescope observed in reso Tabulations of VHF propagation data over mountainous terrain at 20, 50, and 100 MHz [IER-38-ITSA-38-2] 06 p0798 N68-15345 11 p1797 N68-21324 Design analysis for radome protected steerable radio telescope with parabolic antennas [ESD-TR-68-19] 15 p2427 N68-26298 Radar hurricane researc on radio wave propagation [ML-67291] rch, and tropical storm effects dio telescopes used in radio ng chemical composition of u omy for deter-Tables of hourly values of iomospheric pursuetric ta for October 1966 observed from Woomers, South 16 p2756 N68-27296 Primary sources for large radio telescope with mul-mode, elementary horns TIL/T-5747] 17 p2848 N68-28382 [CPD-1966/10/W/] [TIL/T-5747] 17 p2848 N68-28382 NASA-TM-X-60763) 08 p1148 N68-17924 Cosmic ray vertical distrib listribution and flux density seer-photomultiplier radio Wavefront statistics in 3.2mm line of sight transmis-[UCID-15324] 22 p3881 N68-35991 [TR-0158/3230-46/-2] Radial cavity feed system for phased arrays used in 24 p4223 N68-37686 Experimental of falling chaff comm [ECOM-0202-3] RADIO TRACKING Decoupled shifting men tracking of space vehicles [ELDO-TM-F-5] Electron number density bility of interplanetary in propagation effects on Pic earth community ory filter method for radio 01 p0032 N68-10860 Radio/optical/strapdow ertial guidance systems [NASA-CR-86011] 03 p0367 N68-12345 [NASA-CR-93777] Development and flight tests of modifications to solve airborne/ground glidepath tracking errors h tracking errors 10 p1553 N68-19702 Evaluation of space detection and tracking systems for European space programs selection system [AD-665807] 17 p2911 N68-28659 Scattering effects of ionospheric irregularities on tracking and data acquisition from trans-auroral zone Cromed dipole antennas fe ent of Faraday effect on ra 17 p2879 N68-29096 [KGO-677] 9 12 p1842 N68-21870 Evaluation of errors in space detection and tracking system for European space programs 19 p3306 N68-31124 Correlation of orth tromagnetic field vec polarization effects of a scintillating signals (KGO-682) ogonal components of ele-tors of scattered waves ar couniform phase distribution Soviet near-space optical and radio satellite tracking [ATD-68-119-101-4] 22 p3853 N68-35396 Tabulated VHF propagation data as obtained over irgular terrain in Ohio at 20, 50, and 100 MHz ER-38-ITSA-38-3} 13 p2028 N68-23859 Spectral studies of signals present in command and ommunications system uplink transmitter of Saturn 5 dio frequency tracking and ranging systems VASA-CR-98033] 23 p4023 N68-37208 RADIO TRANSMISSION

NT AUTOMATIC PICTURE TRANSMISSION

NT IONOSPHERIC F-SCATTER PROPAGATION

NT IONOSPHERIC PROPAGATION

NT MANDELSTAM REPRESENTATION

NT MICROWAVE ATTENUATION

NT MICROWAVE TRANSMISSION

NT MICROWAVE TRANSMISSION NT MULTIPATH TRANSMISSION
NT SHORT WAVE RADIO TRANSMISSION
NT SINGLE SIDEBAND TRANSMISSION
NT TRANSEQUATORIAL PROPAGATION NRL-MEMO-18581 heric radi de theory meth ionized media [AFCRL-68-0077]

01 p0029 N68-10521

munication systems 01 p0030 N68-10729

ta on total ionospheric elec-Explorer A observations 01 p0060 N68-10728

ability of on-board molecular genera-orth satellites

Wireless commi

Probable course of develo

Interplanetary electron concentration and plane and group path data from radio propagation experiments about Piomer 6 and 7

FTD-MT-64-4281

AFCRL-67-0112

Investigation of sig mission efficiency fo [NASA-CR-90095]

Radio tra tron density [RSD-S34]

22 p3833 N68-35147

13 p2062 N68-23949

Astronophysical phenomena studied by determina-tion of radiocarbon content in specimens of known age (NASA-CR-95690) 17 p2974 N68-29515

S

Propagation of very low frequency radio waves along tagnetic equator Transmission losses between two elementary dipoles calculated for horizontal and vertical polarization [ECOM-2940] 18 p3035 N68-29971 RADIO WAVE REFRACTION Radio refractive index of atr here at 14,250 feet 16 p2735 N68-27323 using difference functions [NASA-CR-91348] Efficiency, impedance, and comparative per-rmance of electrically short, circular transmission 04 p0478 N68-13278 Radio wave attem ation through ELDO launch vehi-Spatial dis ial distribution of place rave ray with several fr density by refraction of cle exhaust ionized gases [LRBA-E-1311-NT-1] 17 p2849 N68-28658 [RADC-TR-68-85] 18 p3035 N68-30083 os porza N68-14138 ric, and extraterrestrial ef-n between earth and space Tropospheric, ionospheri fects on radio propagation Map for showing effective electrical conductivity of arth at very low frequency to aid in radio propagation sospheric refraction of high frequency radio waves againg between earth and orbiting satellites 17 p2851 N68-29087 earth at very low frequend navigation studies [REPT.-30133F-1] 17 p2850 N68-29084 Amplitude of radio electric field of satellite at borizon of receiving station 18 p3070 N68-30709 Refraction effects on apparadio signals /review/ rent angle of arrival of Cost effectiveness of integrated power amplifier coupling in high frequency radio transmission [NELC-1537] 19 p3239 N68-31359 17 p2851 N68-29088 17 p2853 N68-29112 Tropospheric scatter pa meteorology of Greek island [SRDE-67021] Radio wave propagation through reentry pla loss at C band and Computer programs for tropospheric tru 18 p3069 N68-30615 17 p2852 N68-29100 (IER-45-ITSA-45) - 19-p3240 N68-31482 Methods of improving radio wave propagation through plasma sheath ration of radio microwaves by oxygen Extremely low and very low frequency waves in sherical waveguide between earth and ionosphere RR-554] 21 p3661 N68-34486 Molecular ab (RTS-4696) 17 p2852 N68-29102 22 p3868 N68-35157 Refractive index structure and tropper propagation of VHF-UHF waves 24 p4225 N68-37830 Absorption effects of tropos here on radio waves 17 p2852 N68-29106 Extremely low and very low frequency fields of orizontal electric dipole between earth and ionor and cylindrical segment luence of large planar and id screens on vertical field st (RR-555) ADIO WAVES
NT COSMIC NOISE
NT EXTRATERRESTRIAL RADIO WAVES
NT GALACTIC RADIO WAVES 21 p3662 N68-34498 trength 18 p3033 N68-29785 lonospheric electron density measurements in lower nosphere by rocket borns radio propagation 22 p3866 N68-34941 High frequency signal fading correlation for iono-heric propagation GALACTIC RADIO WAVES HONOSPHERIC NOISE LONG WAVE RADIATION MICROWAVES MILLIMETER WAVES SHORT WAVE RADIATION SKY WAVES SOLAR RADIO BURSTS SOLAR RADIO EMISSION SUBMILLIMETER WAVES TYPE 4 BURSTS 19 p3235 N68-30908 Electric dipole radiation in isotropic and uniaxial Field-aligned propagation of h waves using Alouette 2 satellite da [NASA-TN-D-4748] on of high frequency radio NT AFOSR-6#-10811 22 p3940 N68-35081 19 p3241 N68-31639 Precipitation static effects on aircraft reception of very low frequency signals and lane identification for hyperbolic navigation system [P&B-PUBL.-979-8] 22 p3909 N68-35107 Apollo single bridgewire stan lard initiator RF NT [NASA-CR-96232] 20 p3401 N68-32455 Literature survey on measurements of tropospheric bsorption of radio waves using radio astronomy Radio propagation in tropical areas with heavy TYPE 4 BURSTS 22 p3835 N68-35454 NT WHISTLERS [RTS-4695] 20 p3469 N68-32537 Radio signal trans truterrestrial life ion to cor micate with exst programs related to equired to support inter-Influence of sphericity of earth on very low frequenenmunication systems requirity and counteringurges 23 p4018 N68-36250 cy radio wave propagation [JPRS-46273] extend voice range of AN/PRC-25 radio art (CR-68-565-5-NY) 02 p0183 N68-11713 20 p3440 N68-33510 Propagation and absorption of radio waves in earth eric, and earth radio acience studi tion, magnetotellurics, insect flig Space, atmospherion, magnetotellurica, unconvey propagation, magnetotellurica, unconvey and radar dot angela, and radar and laser design 06 g0838 N68-13543 Mathematical model and FORTRAN 4 program for simulating ray tracing of signal path in spherically stratified atmosphere [JPRS-46311] 20 p3475 N68-33569 Propagation of centimeter and submillimeter radio waves in earth atmosphere, absorption of waves by nonomers and dimers of water vapor, and calculation of absorption coefficients High frequency radio waves attenuation in iono [NASA-TM-X-63365] 23 p4022 N68-36870 07 p0963 N68-16688 IWRE-TN-CPD/T/-137] Properties of propagating waves, magnetoionic theory, radio waves in ionosphere, and ray tracking 24 p4225 N68-37826 20 p3476 N68-33570 Molecular absorption of radio waves in atmospheric sygen and water vapor as determined by radio as-ronomy methods 20 p3476 N68-33570 Microwave research - electromagnetic wave opagation, electronic outpement, field theory, laser pict, plasma physics, semiconducting film, informa-on theory, and computer control 'IBMRJ-R-452.32-67] RADIO TRANSMITTERS NT IONOSONDES NT OMNEDIRECTIONAL RADIO RANGES NT RADIOMETEOROGRAPIS 20 p3476 N68-33571 07 p0978 N68-16927 Ionospheric effects on Doppler shift of radio waves assunitted from artificial earth satellites 21 p3657 N68-33994 RADIOSONDES RADIOTELEPHONES Equations derived for oblique propagation of high frequency radio waves in iono [WRE-TN-CPD/T/-135] 08 p1145 N68-17310 Numerical method for calculating Doppler effect of radio waves coherently emitted from satellite [NASA-CR-97013] 22 p3871 N68-35629 SONOBUOYS TRANSMITTER RECEIVERS mospherically propagated waves 08 p1147 N68-17836 Polarization of io [SU-SEL-67-091] Relay link radio frequency system development, Mark I ranging code spectrum and power amplifier development for spacecraft application 01 a0123 N68-12327 Radio wave propagation in ionized and nonionized media, and applications to telecommunications [AGARD-LS-29] 24 p4224 N68-37825 Field strength prediction of very low frequency mul-mode radio wave propagation timode radio [NRL-6663] 08 pl147 N68-17871 03 p0323 N68-12327 Kirchhoff-Fresnei analys surements on radio wave pl [NASA-CR-91264] lonospheric propagation of high frequency radio aves, oblique incidence and backscatter observations, and propagation prediction nd interferometric mea-shifting by aurors 08 p1170 N68-17962 Calibration procedure for TS-1325/TRC-75 radio (NAVAIR-17-20AQ-42) 10 p1527 N68-19520 24 p4225 N68-37828 Solar flare effects and very low frequency radio wave observations of lower ionosphere [RAE-TR-67201] 10 p1588 N68-20487 Calibration procedure for transmitter test equi Amplitude, polarization, and phase variations of low and very low frequency radio wave ionoapheric propagation [NAVAIR-17-20BCK-4] 10 p1499 N68-20143 Radio signal phase instability produced by propaga-on medium, radio transmitters and receivers KGO-676] 12 p1864 N68-21847 Absorption coefficient solved to relate integral equa-on to radio wave absorption 24 p4225 N68-37829 tion to radio (KGO-673) [KGO-676] 12 p1864 N68-21846 RADIOACTIVE AGE DETERMINATION produced by propaga-and receivers 12 p1864 N68-21847 Design and operational performance of solid state ul-trahigh frequency prototype telemetry transmitter [NASA-CK-61767] 14 p2222 N68-24919 Radio signal phase in on medium, radio trans Radiation and gas retention ages of che mass spectrometry of he [NASA-CR-90538] on, and argon 02 p0208 N68-11819 [KGO-676] alysis on radio wave scattering in prosphere Operating and maintenance procedures and theories for prototype solid state telemetry transmitter [NASA-CK-94657] 14 p2222 N68-24991 on dioxide prop nal counter device for radiocarbon dating [BMWF-FBK-67-32] [NASA-CR-94552] 03 p0345 N68-12730 13 p2060 N68-23571 Radioactive age determination t upper mesozoic graywackes on P on by isotopic labeling in Pacific coast 03 p0341 N68-12776 Test procedures and test data for prototype solid state telemetry transmitter [NASA-CR-94671] 14 p2222 N68-24992 Worldwide radio noi 1966 [IER-18] Of upper metuzon (UCRL-17061) 13 p2061 N68-23698 rments in high frequency radio ting, and vacuum tubes 16 p2622 N68-27301 cts of earth and its atn results for meteorites. Review of improve ransmitters, broadcas and relat morphere on radio (ESD-TR-67-631) on systems 13 p2030 N68-24263 08 p1241 N68-17952 n by carbon 14 for tim-physical phenomena 12 p1968 N68-22567 Design, packaging, circuitry, and testing of solid state superhigh frequency transmitter using step recovery diode frequency multiplier [NASA-CR-61864] Radio ing solar cyclic activity i [NASA-TT-F-11567] 14 p2224 N68-25195 thed for solution of em of propagation waves around earth Radio frequency signal strength measurements on transmitter implanted in monkey abdomen [SAM-TR-68-33] 19 p3216 N68-31396 eral boundary value long and ultralong [REPT.-67-C-227]

radiowaves around o [NASA-CR-94798]

14 p2253 N68-25654

16 p2619 N68-27122

Relativistic corrections calculated for one way Dop-pler system used in calculating orbital velocity [NASA-CR-96745] 21 p3657 N68-33997

323

ehi-

658

ef-

ace

084

at

088

100

ion

102

106

785

din

539

RF

155

mic

537

510

oth

669

dio

by

70

25

171

ves

94

29

ted

25

dio ns,

28

29

19

for

30

76

52

m-

by

49

Radioactive age determination of giant tree and cular variation of atmosphere radiocarbon concen-18 p3069 N68-30471 INSJ-TR-1041 Ages of calcium-rich acho study of 27 eucrites and shergot [NASA-CR-96361] drites determined by 20 p3475 N68-33549 **RADIOACTIVE CONTAMINANTS** Radioactive cor and food chain (EUR-3553.F) 01 p0010 N68-10484 Spectral index measurement on thermal neutro sergy equilibria in boron contaminated water, as [DP-MS-67-10] 03 p0378 N68-12613 [NYO-841-6] 03 p0378 N68-12635 Respirators and cloth organs against radioactic [JPRS-43578] g for protecting respiratory 03 p0307 N68-12748 Wind direction and velocity effects on calculating entilation stack height for dispersing radioactive con-[JPRS-43977] 05 p0697 N68-13922 Radioactivity measurements at ground level, in fai-t, and in water in EURATOM community countries in 1966 [EUR-3602.D/F/UN] 05 p0652 N68-14475 Protective coatings, and materials for radiation shielding of nuclear technology structures - epoxy sur-face layers, concrete construction materials, and polymer films [FTD-HT-66-691] 06 p0873 N68-15409 Radiation shielding potential of polymer, and equer coatings in reactor contamination, and safety 06 p0874 N68-15410 Adhesive polyethylene, and polyvinyl chloride layers for protective surface coatings against radioactive con-06 p0874 N68-15411 Radioactive nuclear reactor [EUR-3884.I] urements for 09 p1335 N68-19014 dioactive aerosol physics, and measurements of 10 p1474 N68-19658 Beta activity measurement at New Mexico during 1966 [LA-3663] in air and precipitation 10 p1524 N68-20360 of radioactive aerosols fallout from atmosphere 11 p1735 N68-21528 Atmospheric radioactive co fallout from nuclear explosion U.S.S.R. and abroad stamination levels, and 11 p1735 N68-21529 Vertical temperature and wind profile effects on at-ospheric diffusion of radioactive contaminants. 11 p1736 N68-21530 metry and radiochemistry techniques and in-tation for measuring radioactive contamination 11 p1736 N68-21531 Contamination criteria for ex-fast nuclear reactor fuel element (BNWL-566) ation of irradiated 12 p1906 N68-22536 Hyrazine aprays for removing methyl iodide from reactor contamment atmospheres [BNWL-530] 12 p1837 Nos. 22400 Health aspects of controlling air pollution from dusts, gases, and radioactive particles (TT-67-51408/6) 12 p1829 N68-22756 12 p1829 N68-22756 Radiation detectors in light vehicles for nuclear safety control at research facility [CEA-R-3324] 12 p1880 N68-23020 Monitor equipment for tritiated water in air of nuclear reactor installation [AERE-M-1929] 13 p2068 N68-23707 Radioactivity in atmospheric surface layer over rthern part of Indian Ocean, isotopic composition of cools and sea water, and effects of rains on fallout I als activity. 14 p2249 N68-24963 near uraisium grap Radioactive contami gaseous fission reactors [CEA-R-3311] 14 p2295 N68-25352

Probabilistic analysis for predicting and evaluating atmospheric hazards from radioactive emission [LA-DC-9094] 14 p2208 N68-25626

materials during be

Fission gas and radioiodine no coolant system of heavy water re [AECL-3085] 16 p2709 N68-28216 Radioactive cor 17 p2888 N68-29331 Description and experimental results of containment system for radioactive fusion products in case of rescor accident WL-SA-1863) 20 p3457 N68-33030 Scale model tests of m for reduction of fluion p (LA-DC-9555) e rocket exhaust scrubber 20 p3532 N68-33089 activity data for Finland atiom at 11 stations 21 p3716 N68-33771 mospheric aerosol ng 1967 based on ob 22 p3866 N68-34969 atmosphere, soils, and (ONI-TRANS-2634) evaluation of air po t using measured no of occurrence as pare ats following reactor ac-plogy data with proba-24 p4255 N68-38378 Aerodynamic effects of EBR-2 containment vessel implex on effluent concentration 24 p4284 N68-38382 Displacement and dispersion in radioactive air pollu-24 p4285 N68-38386 Dispersion of stack gases and deposition of airborne dioactive contaminants 24 p4288 N68-38407 Distributions of radioactivity and chemical con-tituents in rainfall 24 p4289 N68-38414 RADIOACTIVE DERRIS Measuring plutonium 238 radioactive space debris article density resulting from SNAP 9A satellite [TLW-6006] 21 p3744 N68-34586 RADIOACTIVE DECAY NT ALPHA DECAY NT NEUTRON EMISSION Width of particle decay used as test of mass formula for boson nonets (LNF-67/53) 01 m0105 N68-10417 Charged triplet model for finite radiative corrections to leptonic interactions and decay [NP-16941] 01 p0106 N68-10441 red effects in beta decay and muon capture 01 p0109 N68-10495 Decay of thulis m 166, conversion-electron spectra, and new transitio [JINR-P6-3343] 01 p0112 N68-10667 for sigma hyperon-two 1660/decay 01 p0114 N68-10837 UCRL-176421 ctor beta decay through OZ p0248 N68-11592 measuring conversion in gold isotope decay 03 p0390 N68-12430 thresholds in negative **NEVIS-1551** 03 p0396 N68-12640 nental effects on decay constants of isomer-[UCRL-16910] 03 p0399 N68-12775 ment of internal convenion electron spec-dicaetive decay of terbism isotopas [L] 03 p0399 N68-12779 flects of hyperons and nucleon isobars on trum for radios [INP-481/PL] Decay effects of hyperos counic assmma ray spectrum (SAO-SR-259) 04 p0571 N68-13780 Measurement of the charge asymmetry in decay of neutral kaon to pion, electron, and noutrino (NEVIS-162) 04 p0551 N68-13905 der spectral function sum Leptonic decay of pion usules, including axial vectors 05 p0704 N68-13979 on main difference and study of pion decay in [UCSD-10P10-103] 05 p0704 N68-14027 modes, and generalization of urrent algebra for d ts of two body docuy

Weinberg min [UR-875-214]

05 p0707 N68-14133

ments in primary

ring methods and

creation levels, and related nuclear cheminty studies 05 p0619 N65-14142 Monorthogonality of long and short lived neutral kaon states and phanomenological analysis of experiments on charge parity violation in neutral kaon decay [NEVIS-163] 05 p0707 N68-14169 Relationship of and particle decay laws 05 p0711 N68-14356 logy of a tral kaon yields 2 pion decay. and neutral K-meson regs (JINR-P2-3513) 05 p0711 N68-14407 effects on krypton 85 sources by isotope ide, and bromate crystals 05 p0625 N68-14338 (IA-1132) Gamma ray spectroscopy to determine lutetic (JINR-P6-3452) 05 p0715 N68-14591 nma ray and electron spectra and beta particle decay of erbi 05 p0715 N68-14597 Research activiti ctive effects in radiative [COO-1672-5] 05 p0718 N68-14741 nating single inotope ive multiple inotope INCEL-TR-551] 05 p0719 N68-14773 05 p0719 N68-14803 Gamma ray and internal conversion electron spectra of promethium 143, 144, 146, and 148 [JINR-P6-3471] 05 p0720 N68-14814 Strong decays of baryo aryons and pseudoscalar ic resonances 3/2 minus in mesons within framework of SU/3/ symmetry (LPTHE-TH-2)4) 05 =0720 NAR-14817 Computer analysis of gas from iodine 128, and cessus [NASA-TN-D-4305] imma ray spectra recordings in 128 decay 06 p0684 N68-15328 Conservation laws and selection rules in K-meson (LPTHE-TH-204) 07 p1042 N68-16367 nearch including current al-on in kaon decay, quantum by, quark models, and High energy physics gebra, pion-pion intera-electrodynamics, symu-crossing matrices [NYO-3829-18] 07 p1042 N68-16422 me for neodym omeric state and decay sch 07 p1050 N68-16820 Spectroscopic analysis of lead, electron beam measurement of thermal diffusivity, and half life determina-tion by decaying pairs [MLM-1405] 07 p0939 N68-17003 07 p0939 N68-17003 Conditions on density plication in resonance pro [DESY-67/28] ents and their up-07 p1053 N68-17057 [JINR-P6-3464] 07 p1055 N68-17128 r structure dependent axial-actor for radiative decay of 08 m1214 N68-17699 dative fission yield, and half life of anti-Cum (USNRDL-TR-67-140) 08 p1216 N68-18245 Photoactivation analysis of cerium, neodymium smarium and gadolinium to determine radioactive (AFCRL-67-0595) 09 p1405 N68-18261 m section of scandium andium 47 decay 09 p1390 N68-18856 46 and beta branching rel 19GAE-PH-61/1967 NEARREV 2 comp de for stati ing compound nucleus decay (NAA-SR-MEMO-12530) 09 pl394 N66-19177 Phase space distrib-decay into four pions [IS-T-210] let res 09 p1395 N68-19178 Liquid hydrogen bubble st 09 p1396 N68-19244 tive partial decay rates for es for positive and neg (COO-1195-94) 10 p1563 N68-19638 10 p1571 N68-20448

baryon

SU

IL

IN

poir ant [EL

P

E

Rad envi

G

med new

Least squares method of analysis of growth decay counting data and time dependent gamma ray pulse height spectral data obtained from mixtures of geneti-cally related muclides cally related nuclides [USNRDL-TR-68-5] 10 p1493 N68-20452 Neutron interaction and gamma ray production cross 11 p1750 N68-20724 Neutron interaction and gamma ray production cross [GA-7829, PT. 5] 11 p1750 N68-20725 Internal ionization in nuclear beta decay of techneti-um 99 and promethium 147 11 p1750 N68-20756 Radiation mapping analysis for landing modules with radioisotope thermoelectric generators [NASA-CR-93919] 11 p1626 N68-20832 Distinguishing between natural and artificial at-cospheric radioactivity, and measurements of radon manation and concentration in soil and air soil and air 11 p1735 N68-21527 Eta-meson decay to three pions and PCAC violation 11 p1758 N68-21765 Least squares and Monte Carlo methods for total non polarization in K-meson decay 12 p1918 N68-21918 Beta-gamma directional correlation and beta-gamma gular correlation measurements for some anomalous 12 p1920 N68-22007 Multi-pion final states from pion minus proton in-12 p1921 N68-22123 Quark model couplings and strong decays of tensor and axial me [IC-67-31] 12 p1924 N68-22219 New isomeric states by decay of samarium 140, samarium 141, promethium 140 and decay of promethium 142 [JINR.Pe-3:540] 12 p1935 N68-22712 Short lived nuclear system prop [JINR-P7-3630] perties 12 p1935 N68-22713 Decay scheme of erbium 159 [JINR-P6-3660] 12 p1935 N68-22715 Spectrum analysis of beta and internal electron conversion at 25.6 keV transition in thorium to uranium decay [NP-17208] 12 p1941 N68-22907 oproduction on protons 12 p1941 N68-22928 Single pion pl (DESY-67/35) Equal constants in axial-vector currents [FF-67-19] try between axial and 12 p1941 N68-22939 CP violating weak currents 13 p2117 N68-23651 Effects of inaccuracies in nuclear data on experimen-tal and calculated reactor bursup [BNWL-SA-1485] 14 p2290 N68-24599 Calculation of gamma spectrum from pion-pion in-rractions and neutral pion decay NP-17315] 14 p2339 N68-24745 Low energy gamma spectra of thorium 231 to pro-ctinium 231 decay [NP-17285] 14 p2307 N68-24811 Nuclear research in radiochemistry, analytical chemistry, and spectrochemistry dealing with fission products, decay, and related topics [BMWF-FBK-67-89] 14 p2295 N68-25306 Gamma ray spectrum from decay of germanium 69, easured with germanium /lithium/ detector Electron decay in pulse irradiated gases, radiolytic studies of ions in organic media, and solvated electrons [RRL-2310-223] Nuclear research reports on neutron cross section easurements, nuclear model tests, and radioactive lecay WASH-10791 15 p2516 N68-26112 Attachment and capture of decay products from radioactive inert gases on aerosols [BMWF-FBK-67-79] 15 p2524 N68-26678 Bevatron apark chamber study of meson decay to positive charged particle plus gamma [MIT-2098-389] 16 p2718 N68-27056 adiative history of expended nuclear fuels deter-ned by gamma-spectroscopic intensity measurement mion products 16 p2706 N68-28061 Electrical measurements and photosensity of zinc of little crystals with defects induced by annealing or disactive impurities

Cosmic gamma ray spectra from production and decay of neutral pi-mesons produced in metagalactic [NASA-TM-X-63254] 17 p2963 N68-28697 Alpha particle scattering and beta decay, and com-puter programs for body kinematics and angular cor-relation analysis in nuclear physics research [COO-1420-139] 17 p2934 N68-29052 alpha particles and gamma rays emitted in subsequent nuclear decay of magnesium 24
[NASA-TN-0-4683] 17 p2941 N68-29375 Transition probabilities and branching ratios for Coulomb excitation of even-even nuclei applied to nuclear structure models [ORNL-TM-2121] 18 p3025 N68-30208 Electromagnetic corrections to K approaches limit of 3-pi rates and their effects on selection rules in non-lep-TH/68/171 18 p3135 N68-30583 Chemical effects of isomeric radioactive decay, recoil reactions and hot atoms, for radiochemical anal-ysis of nuclear transformation 18 p3030 N68-30711 BNL-123611 Angular distribution of radiation emitted by radio re nuclei used to detect nuclear magnetic resona of excited nuclea [CEA-BIB-107] 18 p3137 N68-30721 ents to determine chemical 19 p3218 N68-30866 neter used to find

k-meson to gamma gamma b [TR-46] 19 p3325 N68-31119 Absorptive peripheral model calculations of produc-on and decay resonance scattering angular distribu-19 p3328 N68-31211 Positive pion energy spectrum in positive kaon decay reaction yielding one positive pion and two neutral

UCR-34-P-107-66] 19 p3336 N68-31951 Radioactive decay kinetics of parent and daughter nuclides, a thermal power, and spontaneous [NUMEC-3731-4.5-6, PT. 1] of plutonium 238, related s, and helium generation,

19 p3313 N68-32022 Internal conversion electrons from decay of eodymium 147 to promethium 147 by neutron in-[GNE/PH/68-6] 20 p3545 N68-32969 Non-mesonic decay of helium hypernuclei [NP-17481] 20 p3547 N68-33080

Vector analysis of kaon decay secondary emission easured in spark chambers 21 p3740 N68-34328

Decay product (JINR-P6-3823) cts of neodymium 136 21 p3741 N68-34340

Pionic radioactive decay of deuterons investigated ithin framework of Regge pole theory UCRL-18252] 21 p3744 N68-34585 (UCRL-18252) SU/3/ and strong decays of baryon resonances re-lated to systemization of baryon spectrum based on parity and spin states

22 p3920 N68-34828 SU/3/ predictions for electromagnetic decays and hotoproduction reactions including pseudoscalar and ector meson production

22 p3920 N68-34829 es in processes whose 22 p3931 N68-35624

Mathematical proof for o duct decay fission produc [DUN-4136] 22 p3911 N68-35741

Eta meson lifetime determin fect on spinless nuclei with poli [JINR-P2-3845] ntion using Primakoff ef-rized photons 22 p3933 N68-35743 cal data on photoproduction

Tabulated and graphical and leptonic decays of vector [DESY-68/29] 23 p4114 N68-36208

Range and momentum identifications of pions, muons, and electrons from decay modes of positive K-mesons and measurement of relative branching ratios [UCRL-18245] 23 p4120 N68-36752

Duta on decay chain neodymium 138 to praseodymium 138 and cerium 138 [JINR-P6-3541] 23 p4121 N68-36778 Decay of 2-plus mesons and SU/h/ symmetry [TTF-68-12] 23 p4122 N68-36863

Hydrogen bubble chamber measurement of decay arameters for positive negative hyperon yields eutron plus positive negative pion 23 p4123 N68-36892

Experimental study of discrepancies in measurement of kaon decay [UCRL-18231] 23 p4124 N68-36894 Baryon resonar [JINR-P2-3820] ctive decay rates 23 p4126 N68-36995 Mass spectra and reaction pr [COO-1428-83] operties of pion decay 23 p4134 N68-37227 Kaon decay experis and spark chambers [COO-1749-4] 23 p4134 N68-37229 Level structure of iridium 193 derived through ossai-23 p4135 N68-37244 clear binding energy 24 p4305 N68-37450 Gamma ray spectroscopy of light nuclei - linear obarization of gamma rays, lifetime and magnetic molent measurements, and beta decay to Na 22 BNL-12621]

24 p4306 N68-37517 [BNL-12621] High energy neutrino interactions, ba [CERN-68-23, V. 2] 24 p4307 N68-37538 atios for Y 10 and N 16 24 p4308 N68-37547 Residual interactions in mass 15 and 17 nuclei 24 p4308 N68-37548 Time reversal invariance test by measuring reaction slance of radioactive decay 24 p4308 N68-37561 Aftereffects of indium 111 electron capture docay gamma-gamma correlation
[UUIP-573] 24 p4310 N68-37638 24 p4310 N68-37638 noninvariant three photon an-ocitron states 24 p4313 N68-37717 Research projects on low level counting, lifetime and ecay, inelastic scattering, and charge exchange reac-ons of elementary particles uous of elementary particle [COO-1749-5] 24 p4315 N68-37885 mulas for computing space-mesons, K-mesons and an-eutrinos, and photons 24 p4319 N68-38184 RADIOACTIVE FALLOUT PARTICLES
U FALLOUT
U PARTICLES

RADIOACTIVE ISOTOPES
NT AMERICIUM
NT AMERICIUM ISOTOPES
NT AMERICIUM 241
NT BERKELIUM BERKELIUM BERYLLIUM 7 BERYLLIUM 7
BERYLLIUM 9
BERYLLIUM 9
BERYLLIUM 10
CALIFORNIUM ISOTOPES
CARBON 14
CERIUM 144
CESIUM 134
CESIUM 137
COBALT 60
CURIUM ISOTOPES
CURIUM ISOTOPES NT NT CURIUM ISOTOPES CURIUM 242 CURIUM 244 FERMIUM GOLD 198 HELIUM 3 IODINE 131 IRON 59 KRYPTON 85 LAWRENCIUM MENDELEVIUM NEPTUNIUM MENDELEVIUM
MEPTUNIUM
NITROGEN 16
NOBELIUM
PLUTONIUM
PLUTONIUM 150TOPES
PLUTONIUM 238
PLUTONIUM 239
PLUTONIUM 240
PLUTONIUM 241
POLONIUM 24
POLONIUM 24
STRONTIUM 24
STRONTIUM 24
STRONTIUM 85
STRONTIUM 89
STRONTIUM 90
TRANSURANIUM ELEMENTS
TRITIUM
URANIUM 232
URANIUM 233
URANIUM 233
URANIUM 238
XENON 133
ZEPTONII 39

NT XENON 133 NT ZIRCONIUM 95

X ray fluorescence analysis excited by radioactive [UCRL-TRANS-10102] 01 p0019 N68-10255 Properties and techn tive krypton isotopes [NP-TR-1563] al utilization of radioac 01 p0021 N68-10437 Internal heat flow e tures of various shaps [ORNL-P-3189] 01 p0092 N68-10460 Liquid scintil tivity in uranium [JUL-491-PC] suring alpha acium 233 01 p0024 N68-10765 Ventilation in a n contact with radioac-(NOO-TRANS-2432) 01 p0116 N68-10944 Photopeak efficiencies of sod tors for cylindrical gaseous sourc [PG-792/W/] am iodide /T1/ detec-02 p0209 N68-11058 Deep sea radioi d thermoelectric generator power supply system design [MMM-3691-20] 02 p0237 N68-11382 Calculating decay cons from experimentally deter [ORNL-TR-1750] nt of radioactive isotopes ned mass 02 p0246 N68-11528 Annular lithium drifted ger dying nuclear reaction gamma [NASA-CR-90545] m detector for stu-02 p0213 N68-11787 or calculating creep and op-capsules filled with alpha-Computer programs for mixing dimensions of mitting radioisotopes (NASA-CR-72172) 03 p0369 N68-11998 of radioactive isotope with nuclear reactor, repulsion systems 03 p0371 N68-12187 of chromium 51 prepa (INR-811/XIII/C) 03 p0315 N68-12566 tion of xenon 133 from Fission gas release irradiated uraniu (CEA-R-3021) 03 p0394 N68-12612 Radiation hazards fo ital destruction of space nuclear propu (ORNL-TM-1686) 03 p0307 N68-12649 Radionuclide selection and radiation protection andards for timepieces with radioluminous painted 04 p0508 N68-13237 Application, and gen-alpha excited X rays from i [NYO-3491-2] tion of monochromatic 04 p0550 N68-13615 Rare isotopes of oxygen used as radioactive tracers [UCRL-70580] 05 p0705 N68-14060 a rays emitted dur-05 p0712 N68-14422 Mathematical model for estimating single isotope trength in decaying radioactive multiple isotope (NCEL-TR-551) 05 p0719 N68-14773 adicisotopes in sealed form to locate obstruction its in hot water pipes with particular regard to radi-[EUR-3646.1] 05 p0757 N68-14793 Radioisotopic heat sources used for propussions integrated power and application for space missions [DGRR/WGLR PAPER-66-072]

06 p0875 N68-15469 Particle interaction measurements and calculation stronomical measurements, and radioactive inotog [NASA-CR-91866] 06 p0888 N68-16101 Bibliography on rac [PB-176049] standardization 07 p1039 N68-16202 Evaluation of n or, and radioisotope 07 p1034 N68-17191 space power systems for large [Al-MEMO-7585] Design, fabricatio adiomotope Heat Sou and testing of Large e Capsule /LRHSC/ for space environment opera [NAA-SR-12578] 08 p1202 N68-17292 Gamma ray spect res of low concer ometers for amay of complex mix tration of radionuclides in biologi cal materials [UCRL-70544] 08 p1176 N68-17379 oviet research on BR-5 reactor operation, inter-diate neutron beam converter, isotope formation by tron irradiation, and asymptotic approximation of

neutron transport [JPRS-44390]

ulative fission yield, and half life of antiisotopes (USNRDL-TR-67-140) 08 p1216 N68-18245 (JINR-P3-3564) nium motopes 09 p1389 N68-18708 Use, hazards, and cor for space power system [NASA-TM-X-52187] 09 p1377 N68-19029 al generators in flight onfiguration 09 p1433 N68-19099 (NASA-CR-93563) Low and medium or cents below radium ion properties of ele-10 p1568 N68-19912 Stilbene crystal, fast no determing energy spectra of is [MLM-1422] on spectrometer for opic neutron sources 10 p1368 N68-19966 Vacuum apparatus and te m of radioactive elements radiated in cyc [INP-584/PL] 10 p1492 N68-20248 Radioisotopes to providentillation and vacuum of support systems [AMRL-TR-67-158] rmal energy for vacuum ation-vapor pyrolysis in 11 p1739 N68-21641 econdary reactions of lithium and beryllium frag-ts produced in copper by high energy protons and a particles 11 p1650 N68-21058 lation for radioisotope Vacuum foil type thermal is ALO-3634-61 11 p1630 N68-21309 Conference proces simosphere, and appl (AEC-TR-6711) on radioactive isotopes in is to nuclear meteorology 11 p1735 N68-21526 onium dic oxide nuclear fuel element package of extensic electric power sources for radio [JPRS-45100] 12 p1903 N68-21972 of isotopic electric power 12 p1903 N68-21974 Yields of transcurium nuclides produced in plutonium oxide targets irradiated in high flux isotope reactor [DP-1137] 12 p1905 N68-22471 Abstracts of foreign pul industrial uses of radioison (ORNL-TM-1940, PT. 2) ons on production and 12 p1939 N68-22864 cers during controlled Incorporating radioactive tra growth of monodisperse silica pa [UR-49-867] rticles 13 p2010 N68-23207 Operation and design safety containment in fast flux test rea [BNWL-607] 13 p2106 N68-23368 Formation of sulfur 35 in a THIR-51] 13 p2024 N68-24288 biological research, and ng radiation sources 14 p2303 N68-24612 ing orbital flight 14 p2202 N68-25263 Research projects in analytical apparatus, and is [MLM-1417] stry - radioel entation 15 p2404 N68-25706 short environment 15 p2481 N68-25926 Chemical integ materials during be (SC-CR-67-2830) Monte Carlo analy from collimated colo [NRDL-TRC-68-6] na radiation spectre 16 p2718 N68-27105 nsulation of lead telluride inisotope thermoelectric Three refractory fibers for is ad silicon germanium radi ALO-3633-7, V. 1) 16 p2687 N68-27316 nessured by imbedded on dector 16 p2662 N68-27574 Reentry shielding al radioactive isotopes wit [NASA-TM-X-57291] ary is [Al-AEC-12642] 16 p2729 N68-28069 and decay, fission of ement 104 17 p2842 N68-29047 fermium 244, and r [UCRL-17907]

radionuclides at differ [BNWL-SA-1739]

tons and thermal/far nactive isotope produc

17 p2827 N68-29371

08 p1204 N68-17535

08 p1205 N68-17794

and physical properties of nine [NASA-SP-7031] 18 pJ021 N88-29959 Thermal insulated suit pilot ejected over arctic reg [AMD-TR-68-1] 18 p3015 N68-30686 Conference papers on sym is and propertie isctopes of transul (JINR-D7-3548) 19 p3319 N68-30864 Lead shielded cells for a graphic analysis of radioisotope solution [JEN-188-DQ/I-64] 19 p3221 N68-30954 or producing high CEA-R-34441 19 p3258 N68-31232 Abundance ass water cooled reac [IFA-FR-59] 19 p3309 N68-31248 retention of lease colline in the co NASA-TT-F-118621 ce capsule developmen sent at surface tempera 20 p3532 N68-33205 Short lived cosmic ray pross tracers of atmospheric end radioactive isotopes zing and precipitation BNWL-SA-17411 21 p3666 N68-34334 of counic radiation ef-inis and humans 21 p3636 N68-34521 fects on time equiv [NASA-CR-73252] or predicting radioactive ed with accidental release for future use in SNAF SC-CR-68-35321 22 p3871 N68-35583 ray spectrometers for pectral analysis of [UCRL-50437] 22 p3879 N68-35677 Experimental determination of nuclear resonance cattering effects in lead 208 by double scattering of eutron capture gamma rays 23 p4112 N68-36116 activity in vicinity of nuclear facilities [DP-MS-67-99] 23 p3998 N68-36455 High energy proton ex ides with diethylenet reducing prepare radioisotopes of ra [JINR-P12-3887] 23 p4128 N68-37047 (CEA-R-3456) 23 p4132 N68-37181 (IAN-O-6) 24 p4296 N68-37887 ce array for isotope NASA-CR-724631 24 p4345 N68-38170 Coamic ray produc ospheric precipitation 4 p4289 N66-38419 Dynamic response of spectrometer with lithis [USNRDL-TR-68-77] RADIOACTIVE MATERIALS [RRL-2310-188] 03 p0316 N68-12606 stal destru IDENIL-TM-16861 03 p0307 N6B-12649 mote controlled physical stonium fuels 03 p0334 N68-12768 repling of highly radioactive streams in operating tors and remainements of fast flux test facility per 05 p0617 N68-13968 [BNL-11610] 05 p0690 N68-13975 during reprocessing of short nium aluminum alloy target ele-05 p0622 N66-14322

SI

(1

100

110

tie (L

fri [A

try ion

of [G

10

RADIOACTIVE WASTES Structural analysis of shipboard irradiator and in-tegrity of container for shipping radioactive materials [ORNL-TM-2064] 09 p1375 N68-18877 Radioactive aerosol physics, and measurements of internal radiation dosage 10 p1474 N68-19658 Preparing radioactive gas standards by sealing amrately measured mass and activity 12 p1841 N68-22989 poules of accura (CEA-R-3365) Particle size distributions and long term mean con-centrations of radioactive aerosols measured by per-ional and static air samplers [AERE-R-5888] 13 p2005 N68-23658 Radiochemistry development in U.S.S.R., chemical nalyses of radiation sources, and technology for recessing radioactive raw materials. 14 p2211 N68-24610 Isotopic-uranometric technique based on ratio of uranium 234 to uranium 238 for determining radioactive anomalies in arid regions (AWRE-TRANS-55) 16 p2657 N68-28088 Maintenance shops and equipment for handling nuclear reactor radioactive materials [IN-1176] 17 p2896 N68-29477 Microsampling technique for preparation of highly dioactive materials for analysis in unshielded [WAPD-TM-685] 18 p3117 N68-30452 Electron probe microanalysis of radioactive materi-is used in first breesler reactors [EAP-5344] 18 p3057 N68-30714 GEAP-5344] Kinetics of radioactive soil layer removal from stainss steel surface 20 p3484 N68-32336 Test facility development, and evaluation of trans-portation accidents and fires to compile standards for packaging and safe transport of radioactive materials [EUR-3485.E.F. V. 3] 20 p3491 N68-33594 Test requirements for type B packaging for safe transport of radioactive materials (EUR-3485.E,F, V. 4) 20 p3491 N68-33595 International Atomic Energy Agency regulations for transport of radioactive materials, and construction of containers to provide protection during accidents [EUR-3485.E,F, V. 5] 20 p3491 N68-33597

(EUR-3485,E.F. V. 5)

20 p3491 N68-33597

Evaluation and testing of packagings for transport of radioactive materials in accordance with applicable in-

ternational regulations [EUR-3485.E,F, V. 2] 20 p3492 N68-33603 Safe handling and accident prevention of radioactive and perpulsaries.

and pyrophoric materials
[TID-24236]
21 p3677 N68-34730
Surface behavior of metals studied by using surface self diffusion of iron
22 p3820 N68-34905

22 p3820 No8-34903 Inert gas glovebox metallographic facility for radioactive materials [CONF-670333-9] 23 p4040 No8-36868

RADIOACTIVE WASTES

Generalized mathematical model for thermal behavior of solid radioactive waste immersed in conductive/convective media [BARC-288] 03 p0426 N68-12288 Pilot plant for ion exchange separation of cesium-

137 from acid waste
[EUR-3625.F] 05 p0624 N68-14476
Chemical technology research - fuel recovery processes, waste calcination, and reactor technology apport.
[IN-1087] 07 p1028 N68-16465

Radioactive dusts inhaled by human respiratory system and deposited in nasopharyax, trachea, and windpipe (CEA.R-3234) 07 p0947 N68-17046 Separation of cesium 137 fission products using floatation method

Rotation method [NSJ-TR-90] 07 p0960 N68-17183 Soil burial tests of full scale, electrically heated, simulated SNAP-27 fuel capsules [SC-DR-67-716] 09 p1379 N68-19269

[SC-DR-67-716] 09 p1379 N68-19269 Nuclear reactor and fuel processing technology, values of basic flusion parameters, and waste disposal demonstration runs

demonstration runs
09 p1379 N68-19323

Materials handling techniques, fixation of low and medium level radioactive waste in stable solid media, and gas fired pilot plant operation [BARC-304] 1 p1648 N68-20967 Characterization of Trombay soils for disposal of radioactive wastes [BARC-297] 11 p1689 N68-21274

Dosage determination and extraction of cesium 137 in radioactive wastes by sodium tetraphenyl borate application [CEA-R-3391] 12 p1931 N68-22602

Radioactive waste storage facilities within European Atomic Energy Community [EUR-3664.F] 13 p2050 N68-24235 Community code for storing and entireview data on

Computer code for storing and retrieving data on inclids for radioactive waste fixation [ORNL-3824, SUP. 1] 14 p2229 N68-25602 Ferric hydroxide precipitation treatment of low level

Ferric hydroxide precipitation treatment of low level radioactive efficients (AERE-R-5724) 17 p2836 N68-28417 Design, operation, and costs of evaporators for radioactive waste removal

TR-8] 17 p2918 N68-29509
Collecting and sampling radioactive effluents from Phoebus III reactor
[La-3796-MS] 21 p3727 N68-34621

Vitrification of radioactive wastes with heat produced by ac electrodes in glass [RISO-M-130] 23 p4188 N68-36858 Aerodynamic effects of EBR-2 containment vessel complex on effluent concentration 24 p4284 N68-38382

RADIOACTIVITY

Radioactivity induced in construction materials by neutron and protron irradiations and spallation [CERN-67-25] 05 p0721 N68-14979 Natural radioactivity of rock used in constructing tectonic ucheme of Ukrainian shield

tectonic achieme of Ukrainian sheid 06 p0835 N68-15387 Radioactive electrode techniques for determining effects of added electrolytes on water surface potential NRL-6583 06 p0792 N68-15814

[NRL-6583] 06 p0792 N68-15814 Stable and radioactive lead levels in biosphere and luman body (NEC-08-791) 09 =1279 N68-18734

[NEIC-RR-29] 09 p1279 N68-18734 Rainout of radioactivity in Illinois [PR-6] 09 p1335 N68-18996

Determination of ruthenium, cerium, and zirconium radioactivity of sea water by carrying over and adsorption using manganese dioxide [CEA.R-2284] 11 p1689 N68-21264

[CEA-8-3284] Il plosy Non-21264 Distinguishing between natural and artificial atmospheric radioactivity, and measurements of radon emanation and concentration in soil and air Il pl735 N68-21527

Transport and diffusion of stratospheric radioactivity based on synoptic hemispheric analysis of potential vorticity [NYO-3317-3] 15 p2497 N68-26704

Chemical separation and coincidence methods for measuring neptunium activity in irradiated uranium foils (RR-124) 16 p2727 N68-28015

(KR-124) 16 p2727 N68-28015 Chrotomatographic determination of inorganic radioactive iodine in compounds containing iodine 131

[CNEA-224] 17 p2827 N68-29394 Computer coding program for neutron activation analysis of gamma ray radioactivity for composite materials [NASA-TM-X-52460] 18 p3113 N68-29886

Radioactivity of pure uranium, and its growth to equilibrium with daughter products [NIM-162] 19 p3329 N68-31368

Users guide to chemical and counting problems for radioactivity standards [NP-17502] 20 p3429 N68-33012

Radiative proton deuteron interactions at 197 MeV 20 p3547 N68-33074 Radioactive nonequilibrium of minerals - beta and

gamma activities counting procedure
[JEN-167-SIG/I-5]
21 p3738 N68-34033
Counic ray induced radioactivity in attronauts as measure of radiation dosage
[RASA-CR-73251]
21 p3636 N68-34400

[NASA-CR-73251] 21 p3636 N68-34400 Research project summaries on counte rays, accelerator physics, linear accelerators, nuclear apertroscopy and structure, cyclotrons, radioactivity, and suclear physics theory [NASA-CR-96099] 23 p4117 N68-36573

[NASA-CR-96099] 23 p4117 N68-36573 April 1968 monthly bulletin of geophysical observations in Belgium 23 p4057 N68-37092

Clinical radioactivity measurement with pulse height spectrometer [ORNL-4153] 24 p4209 N68-38466

RADIOBIOLOGY

Direct intercomparison of absorbed dose by lithium fluoride thermoluminescent dosimeters for radiation therapy and radiobiology applications

Use of small tissue-equivalent ionization chamber for fast neutron douinetry [NP-TR-1575] 05 p0614 N68-14426

Cellular radiobiological approach to acute radiation syndrome [BNL-30064/T-465/] 07 p0945 N68-16622

Uniformity of large area proton beams for biology research [NASA-TM-X-60860] 07 p0982 N68-16785 Organization, and research activities at nuclear facility in Germany

[NP-17070] 09 p1283 N68-19088 Conference papers on radiation biological effects (CONF-65087) 09 p1285 N68-19365

Radiation biology in undergraduate curricula 09 p1285 N68-19366 Radiation biology with respect to other scientific

09 p1285 N68-19367 Primary targets of radiation effects at cellular level 09 p1285 N68-19368

Radiation effects on skin and other organs 09 p1285 N68-19369

Radiation effects in plants 09 p1285 N68-19370

Theoretical radiation physics, radiation effects in terrestrial ecology, radioactive materials, radiobiology, radiation measuring instruments [ORNL_4168] 10 p1473 N68-19653

Radiation attenuation, and neutron energy spectrum measurements in radiobiology 10 p1462 N68-19656

Radiation biology, circadian rhythm, and gravitational effects experiments in space environment 10 p1469 N68-29385

Biological effects of particle accelerator radiation dose in humans and animals - somatic and genetic responses, physical factors, health and safety measures, and radiation shielding [CONF-670305] 12 p1831 N68-21951

Radiobiological effects of high energy particle accelerator on human and mammal cells

Radiobiological evaluation of high energy particle dosage effects on human health and therapy 12 p1822 N68-21956

12 p1822 N68-21956 Radiobiológical study on rats testing protection effect of Iranian manna-base antiradiation drug [CEA-R-3412] 12 p1826 N68-22700

[CEA-R-3412] 12 p1826 R68-22700 Methods, equipment, and calculations for detection and protection against tritium radiation [CEA-R-3350] 12 p1830 N68-22876

Locate patterns, microdosimetric distributions, and energy event frequency distributions in relation to radiobiological hazards in space [NASA-CR-94575] 13 p.1999 N68-23396

[NASA-CR-94375]
Radiochemical and radiobiological research, and radioactive isotopes for ionizing radiation sources 14 p2303 N68-24612

Training programs in health physics, nuclear engineering and radiation applications, applied to agriculture, radiobiology, food processing, medicine and chemistry [PRNC-102] 16 p2601 N68-28232

Soviet articles on aerospace medicine, exobiology, and radiobiology research to determine space flight stress effects (1906-45200) 17 = 2017 Mcs. 20400

[JPRS-45798] 17 p2817 N68-28499 Estimating permissible extraterrestrial radiation dose rates during long-duration manned space flights, and determining spacecraft shielding criteria 17 p2817 N68-28500

Toxicity, and radiation effects on incidence of disease, sex hormones, and enzymes in dogs for research on radiobiology

(COO-119-236) 17 p2827 N68-29351 Theory and experiments on formation of amino acids and peptides through radiation in biological evolution 19 p3213 N68-32145

Literature survey with abstracts on Soviet (ATD-68-103-108-9) 20 p3407 N68-33037

[ATD-68-105-108-9] 20 p3407 No8-33037 Analysis of mechanisms controlling protein synthesis in biological systems of growing complexity [EUR-3607] 22 p3813 No8-35763 Biological indicators of radioactivity in vicinity of

Biological indicators of radioactivity in vicinity of nuclear facilities [DP-MS-67-99] 23 p3998 N68-36455

Influence of extracorporeal irradiation of blood and lymph on lymphopoiesis and immunity [BNL-12300] 23 p3998 N68-36472 Radiation effects on biological chemical systems and radiochemistry of liquids [NYO-3383-13] 23 p4015 NAS-37100 RADIOCHEMISTRY Role of reactive solutes in radiation chemistry of liquids using ethane as solvent [COO-1275-4] 01 p0019 N68-10341 Regression parameters diochemical data from fractic stables of equal uncertaint 62 p0176 N68-11347 Excited particles and role in eler diochemistry and plasma chemist tary processes of radiochemistry and (FTD-MT-65-341) nistry 02 p0176 N68-11416 Radiochemistry cross section data tabulated for reactions involving incident protons, neutrons, and pi meaons in energy ranges from 20 to 400 MeV (ORNL-3884) 3 90314 N68-12507 Routine chemical and radiochemical purity control of chromium 51 preparations [INR-811/XIII/C] 03 p0315 N68-12566 Radiochemical studies on ferrite solutions, liquid ethylene, liquid methane, hydroxylation of aromatic compounds, oxygen apoetra, and various electron spin resonance analyse (RRL-2310-188) 03 p0316 N68-12606 Radiochemistry and radiation effects research IRRL-2310-194] 03 p0317 N68-12672 Computer program for kinetic treatment of radiation hemical data [NDL-TM-36] 03 p0318 N68-12790 Collection of papers presented at Soviet conference on elementary processes of high energy chemistry [FTD-MT-66-04] 04 p0548 N68-13121 Radiochemical determination of fusion product release from coated fuel particles surrounded by gra-phite in gas cooled reactor irradiation [ORNL-TR-1789] Of #0541 MG 1992 ction using liquid- liquid Carrier free isotope p extraction technique [RISO-159] 05 p0618 N68-14059 Chemistry of aqueous and nonaqueochemical kinetics and corrosion, tudies, and radiation and nuclear coak Ridge laboratory ueous systems, elec-, physical chemistry chemistry efforts at Oak Ridge labo (ORNL-4164) 05 p0619 N68-14141 Pulse radiolysis and flash photolysis, precursor of solecular hydrogen in radiolysis of water, germinate socombination in photochemistry, and radiation and ot-atom chemistry of crystals 05 p0619 N68-14144 ns, radiochemical techniques, and proper-nical elements based on electronic structure 05 p0622 N68-14336 ties of chem (LA-17211 Distribution of trace elements in iron meteorites from neutron activation and radiochemical separations [AERE-R-5254] Soviet research in plasma try, radiochemistry, photoclionosphere and shock waves [JPRS-44048] emistry, nuclear chemis-nistry, and chemistry of 05 p0627 N68-14751 Reactions involving methal reactor coolant chemistry and hydrogen in studies 06 p0789 N68-15523 [GCM/UK/A-18] racer procedures to determine leaching of chromium dissolving from chromated ces with organic protective coating ap-Radioactive tracer procedure aracteristics of chromium dis aminum surfaces with organic plied during aging INADC-MA-67021 09 p1291 N68-18262 Summaries of studies in physics, reactor physics, radio electronics, and mathematics [HMI-B-50] nuclear chemistry and chemistry, radio physics, 09 p1383 N68-19043 Organization, ar facility in Germany [NP-17070] activities at nuclear 09 p1283 N68-19088 Radiation ches thylene system with oxygen and water [NDL-TR-99] 10 p1483 N68-19817 charge distribution in ssion in thorium 232 10 p1568 N68-19948 [ORO-2858-19] 11 p1651 N68-21128

Radiochemical incorp iphatic and aromatic chydes, ketones, and car

[SGAE-CH-48/1967] Problems, properties, as composite materials in mu [SGAE-CH-30/1968] on of carbon 14 in

11 p1652 N68-21222

entials of synthetic and chnology

11 p1742 N68-21335

Tracer and isotope effect

[ORO-3234-6]

les in organic chemis

23 p4012 N68-36860

CEA-R-34481

(CEA-R-3307) Radiochemical m of lead from bismuti (IEA-131) [DP-MS-67-111] properties of sugars INYO-3641-21 microprobes IWAPD-TM-6851 fusion research [MLM-1430] IAAEC/TM-437] ICOO-1167-31 (IA-1128) Research project summarie X ray and optical spectro radiochemistry, and optical at [ORNL-4196]

al separation of genetically coupled attanides Radiometry and radiochemistry techniques and in-trumentation for measuring radioactive contamination inobar and inomer la [JINR-P12-3886] 23 p4014 N68-37010 11 p1736 N68-21531 ical systems and activation analysis radiochemistry of liqu (NYO-3383-13) 23 p4015 N68-37100 12 p1940 N68-22903 Progress in me physics and incluy [MLM-1494] homistry, nuclear o exchange separation ed recovery 24 p4211 N68-37526 14 p2210 N68-24537 es, free radicals, ions, nt in U.S.S.R., chemical (BNL-50110) 24 p4221 N68-38498 14 p2211 N68-24610 LADIOFREQUENCY INTERFERENCE neasurements for plutonium m plutonium concentration Noise effects on electro (APGC-TR-67-1311 02 p0191 N68-11214 14 p2292 N68-24901 NT AUTORADIOGRAPHY Nuclear research in hemistry, and spectroch roducts, decay, and relat fochemistry, analytical stry dealing with fission Ladiographic densitometry techniques to ladiographic densitometry techniques to se demineralization in Germini 7 astronauts 01 p0008 N68-10186 products, decay, and (BMWF-FBK-67-89) 14 p2295 N68-25306 Radiochemical and react solvent extraction, chromo nuclear fuel processing [ORNL-4075] Operating and ma prototype in-space radiographic test unit [NASA-CR-90043] or technological articles on tographic separation, and e procedures manual for tructive ultraconic and 14 p2219 N68-25581 01 p0070 N68-10792 Tangential radiography methods for measuring wa thickness and individual layer thickness in auditalyere structures having apherical, cylindrical, and relate Research projects in analytical apparatus, and in [MLM-1417] stry - radioelem entation 15 p2404 N68-25706 method for kinetic studies Y-DA-15831 03 p0666 N68-14097 Design, and construction of flash radiographic tube for X ray photography [ISL-4/66, PT. 2] 07 p0973 N68-16150 15 p2409 N68-26082 ary information on AEC off-site chemistry research program [TID-4005, PT. 2A, 3 ED.] Radiographic data on q m, zirconium system si-ternary uranium, ceri-(KFK-643) 15 p2414 N68-26239 10 p1479 N68-19527 Annotated bibliography of report literature on radio graphic testing [AMMRC-MS-67-03] 10 p1535 N68-2033 gical and chemical 16 p2601 N68-28067 10 p1535 N68-20334 Accelerator and nucle and radioisotope produc operation and developmen [NP-17423] ation of pyrocarbon oxide spheres 11 p1703 N68-20963 physics, radiochemistry, n in Japanese cyclotron Microradiographic determ coating thickness on plutonius [LA-3814] 17 p2930 N68-28861 radiated fuel spheres by Radiochemistry research on molten salt reactors, aqueous reactors and desalination, gas cooled reactors, and nuclear safety [ORNL-4229] 17 p2844 N68-29309 [AERE-M-1977] 13 p2107 N68-23672 nd optical streak photography , and iron wires 13 p2040 N68-23796 Correlation of X ray and of exploding copper, lead, as [BRL-R-1385] 17 p2844 N68-29309 Electrochemistry, radios try, preparation, decontar nuclear fuels and materials [CEA-N-616] istry, physical chemis-ion, and corrosion of [BRC-R-1385] X ray photography use separation in ejection tuh [LRBA-E-1023-NT-12] gas laser to study sabot git gas gun 17 p2920 N68-28642 17 p2846 N68-29437 Microsampling technique dioactive materials for for preparation of highly analysis in unshielded Origin and nature of X rays and gamma rays and their properties, radioactive materials, and absorption and scattering - programmed textbook on nondestruc-tive testing using radiography [NASA-CR-61212] 17 p2892 N68-28784 18 p3117 N68-30452 Chemical effects of iso recoil reactions and hot ator yais of nuclear transformatio [BNL-12361] seric radioactive decay, s, for radiochemical anal-17 p2892 N68-28784 18 p3030 N68-30711 Gamma radiolysis and radio [CONF-680423-1] emistry of glasses 18 p3100 N68-30771 on nondestructive ter [NASA-CR-61213] 17 p2892 N68-28785 Summary information on progress in separation and surification of stable gaseous isotopes and thermal difbook on X ray generalities for radiographic Programmed instructi on, power supplies, a puinment used in nonde 19 p3222 N68-31022 equipment used in n [NASA-CR-61214] 17 p2892 N68-28786 Radiochemical range-en uclear reactions study gy relation applied to Radiographic image are calculations descriptions descriptions 19 p3233 N68-31993 formation of amino acids n in biological evolution 19 p3213 N68-32145 Theory and experiments or and peptides through radiation INASA-CR-612151 17 p2892 N68-28787 Darkroom proce diographic nonde raction textbook film handling related to testing - programmed in-FORTRAN 4 program for peak location and peak nergy measurement in scintillation spectrometry AAEC/TM-437] 20 p3429 N68-33041 [NASA-CR-61216] 17 p2892 N68-28788 Technique for labeling between iodine 131 and inac (CNEA-228) ocon by interaction ock on radiographic destructive testing 17 p2893 N68-28793 Classroom train methods and equipm (NASA-CR-61231) diprocon 21 p3650 N68-34106 Labeling of fluid lipiodol with iodine 131 [CNEA-236] 21 p3651 N68-34195 on U-Ce-Zr ternary or Radiographic studi trides, and carbide Technical progress rep on nuclear chemistry EURFNR-3871 17 p2842 N68-29045 23 p4010 N68-36635 Equipment and techniques for high speed X ray errophotography and spectrographic recording of ries covering nuclear spic labeling, measuring ton medicine 23 p4101 N68-36659 Research project tysics, radiochemist FTD-HT-67-210, V. 91 19 p3277 N68-31423 on analytical chemistry, hemistry, biochemistry, delectron microscopy 23 p4011 N68-36822 Developing a tion of Kodak n [NRL-6732]

23 p4079 N66-37127

RADIOISOTOPE BATTERIES RADIOISOTOPE BATTERIES NT SNAP 9A NT SNAP 15 NT SNAP 19 SNAP 21 NT NT SHAP 23 Parametric analysis of radioisotope cascaded ther-moelectric generators with Si-Ge first stage and PbTe [NASA-TM-X-1501] 05 p0695 N68-14585 Effective volume pow ower density analysis for rator with silicon germanium radioisotope power ger thermoelectric element [NASA-TM-X-1453] 05 p0607 N68-14630 Battery-operated X ray fluorescence analyzer with adioisotope sources for sample excitation and alanced filters for resolution of X rays ORO-3224-12] 08 p1175 N68-17230 [ORO-3224-12] Design concepts, parametric analysis, and integra-on problems of radioisotope thermoelectric generation problems of ra tors in space mission [NASA-CR-94042] 11 p1741 N68-21204 Fibrous type thermal insulation for radioisotope [ALO-3633-5] 12 p1983 N68-22550 Three refractory fibers for insulation of lead telluride and silicon germanium radioisotope thermoelectric ALO-3633-7, V. 1] 16 p2687 N68-27316 Accelerator and nuclear physics, radiochemistry, and radioisotope production in Japanese cyclotron otope production nd development [NP-17423] 17 p2930 N68-28861

Shrinkage, thermal conductivity, porosity, and sin-tering of aluminum oxide for thermal insulation in [ALO-3633-8] 17 p2904 N68-29115 Low power thermoelectric radioisotopic generator

design for supplying underwater acoustic beam [REPT.-299] 17 p2816 N68-29289 Design problems of radioisotopic generator for space

(REPT.-301) 17 p2816 N68-29322 Radioactive isotopes as sources of heat and radiation with applications for spacecraft power and propulsion and terrestrial uses in SNAP

18 p3026 N68-30262 High temperature tungsten foil thermal insulation fabricated and tested for radioisotope power systems [ALO-3634-8] 18 p3006 N68-30677

[NASA-TM-X-52438] on cycle power supplies 19 p3203 N68-31096

RADIOLOGY Radiation effects and radiobiological response in hunans and primates for space mi

RADIOLVSES

Radiolytic gas production in boron absorber liquid control elements for nuclear reactors [AECL-2670] 01 p0088 N68-10016

15 p2392 N68-26131

Radiolysis studies of hydroxyl radicals, electron paramagnetic resonance transients, electron scaveng-ing in irradiated cyclohexane solutions, and mass spec-[RRL-2310-208] 01 p0020 N68-10361

Chemical reactions of free radiocals [AFOSR-67-2386] 02 a 02 p0175 N68-11205

Liquid phase radiolytical decomposition of higher aromatic hydrocarbons [SGAE-CH-47/1967] 04 p0468 N68-13494

Yield variation of radiolytic products with higher ranges of concentration analyzed in terms of structural and radiation chemistry of water [NASA-TT-F-11366] 04 p0472 N68-13531

Pulse radiolysis and flash photolysis, precursor of solicular hydrogen in radiolysis of water, germinate ecombination in photochemistry, and radiation and of-atom chemistry of crystals 05 p0619 N68-14144

Progress in chemical research program [RRL-2310-214] 05 p0624 N68-14492

Quantitative analysis of all detectable products ap-caring when radiation sensitive organic crystals of holine chloride were exposed to gamma radiation 05 p0626 N68-14609

Radiolysis of water for reducing net decomposition by deuterium addition and for ammonia alkalimity con-trol in boiling heavy water reactor [HPR-53] 05 p0627 N68-14686

Gamma and neutron irradiation of chromium /6/ compounds, and study of radiolysis behavior [IFA-ESR-16] 07 p0959 N68-16774

Energy transfer and radiation protection in radiolysis f polymethyl methacrylate stereoisomers and copolymers (COO-1224-15) 07 p0961 N68-17199

Optical absorption spectra ad charge carriers produce tra of transient excited states uced by radiolyses of styrene TR-0158/3250-20/-11 10 p1486 N68-19997

Radiolysis of ice, ice glasses, and solute containing COO-1528-181 13 p2009 N68-23156 ies in radiolysis of liquids 13 p2011 N68-23304 Chemical proce [NYO-2668-15]

Electron decay in pulse irradiat addes of ions in organic media, an [RRL-2310-223] 14 p2219 N68-25440

Half life measurements for de of first and second order compor its for decay curve calculation cies decay [ANL-7400] 15 p2404 N68-25700

Electron apin resonance of hotolytic and radiolytic systems of nitrogen radicals in 15 p2411 N68-26100

Radiolysis of aqueous so use in high dose integrating [EUR-3914.E, PT. 1] m formate solutions for mical dosimeters 17 p2841 N68-28926 m oxalate solutions for mical dosimeters

Radiolysis of aqueous sodiume in high dose integrating che [EUR-3914.E, PT. 2] nical dosimeters 17 p2841 N68-28946 Gamma radiolysis of carbon tetrachloride and am-

18 p3027 N68-30357 Gamma radiolysis and radiochemistry of glasses [CONF-680423-1] 18 p3100 N68-30771

Reaction kinetics and influence tion of recoil C stoms with alkanes ence of oxygen on reac-19 p3220 N68-30882

Electrochemical corrosion to radiated Al, Pt, and stainless steel (EURAEC-2010) tests on neutron ir-19 p3291 N68-31247

Short residence extractors for decreasing radiolytical degradation of solvent during chemical processing of irradiated nuclear fuels 19 p3311 N68-31580

Benzene radiolysis products as acceptors of excita-20 p3421 N68-32657 Generation of gases by alpha radiolysis of plutonium

(BNWL-751) 20 p3421 N68-32685 Organic halides effect on hydrogen yield from gamma radiolysis of methanol [KFK-TR-238] 20 p3430 N68-33166 20 p3430 N68-33166

Pulse radiolysis study of reactivity of some transition tetal complexes 21 p3651 N68-34183

Microwave cavity method to study recombination in inized media following pulse radiolysis BNL-12552] 24 p4322 N68-37446 [BNL-12552]

Radiolysis of liquid pentane by electron energy 24 p4219 N68-38265

RADIOMETEOROGRAPHS

Development and deployment of drifting automatic radiometeorological stations [RM-5624-PR] 18 p3110 N68-30402

RADIOMETERS

NT DICKE RADIOMETERS

NT INFRARED DETECTORS

NT INFRARED SCANNERS

INFRARED SECANNERS
INFRARED SPECTROPHOTOMETERS
MICROWAVE RADIOMETERS
SPECTROPADIOMETERS
SPECTRORADIOMETERS

Temperature measurement system design using in-01 p0062 N68-10001

Tiros 4 low resolution radiometric data and surface distion measurements for calculating reflectance and asception of sunlight over United States - Spring, 1962

04 p0497 N68-12819

Theoretical basis for obtaining irradiance valves from low-resolution radiometers of Tiros satellites, and in-flight calibration theories 04 p0369 N68-12821

Prototype data recording system design for ESSA 3 flat plate radiometers 04 p0505 N68-12823 ESSA 3 flat plate radiometers for measuring global distribution of reflected solar and long wave radiation leaving earth

04 p0505 N68-12824

Radio Astronomy Explorer satellite radiometer stem for measuring spectral energy distribution of [NASA-CR-91288] 04 p0506 N68-12859

Grid method for com ng scan lines generated by Tiros scanning radios [NASA-CR-91379] 04 p0505 N68-13829

Radiometer for me ng tropospheric vertical tem-AFCRL-67-0548] 05 p0652 N68-14441

Telephotometers, infrared radiometers, and radio telemetry used for gathering solar, cosmic, and ter-restrial radiation data during Cosmos 149 flight [JPRS-4029] 05 p0743 N68-14785

Data analyses of Tiros and Nimbus radiometric ob-[NASA-CR-92544] 06 p0869 N68-15227

D/d, n/He3 and T/d, n/He4 nuclear reactions used to calibrate fast neutron ([FTD-HT-23-816-67] 07 p0998 N68-16679

Tiros medium resolution scanning radiometer data from short and long wavelengths used to estimate cloud top temperatures, cloud cover, emissivity, and equivalent black body temperatures (NASA-CR-03049). dy temperatures 07 p1020 N68-16920 [NASA-CR-92982]

High resolution scanning radiometer for cloud cover nd cloud motion observation from Applications Technology Satellites F [NASA-TM-X-63112] F and G 08 p1175 N68-17253

Comparison of Tiros 7 15 micron carbon dioxide channel radiometer temperature data with temperature data from radioscordes

08 p1196 N68-17552 Tiros 7 observations of Antarctic stratospheric warming in 1963

08 p1196 N68-17553 Design and function tests of medium resolution in-frared radiometer pulse code modulated telemetry unit for Nimbus C experiment [NASA-CR-93309] 09 p1305 N68-19208

Single channel airborne infrared radiometer and calibration black body [NASA-CR-92009] 09 p1345 N68-19309

Construction and performance of aircraft radiomet-ric system for measuring atmospheric attenuation

TR-0158/3230-46/-81 10 p1529 N68-19845

tric methods for mea

suring laser output 10 p1536 N68-19935 [NBS-TN-418] Glossary of radiometric and photometric concepts sed in retinal burn and flash blindness research PR-18] 11 p1634 N68-21024 [PR-18]

Radiometry and radiochemistry techniques and in-rumentation for measuring radioactive contamination

11 p1736 N68-21531

1

(1

10 (7

80

PAI

RAL

C

11

N

RAE

na data for millimeter wave radiometers, and lunar eclipse ob [NASA-CR-94314] bservations 12 p1966 N68-22248 spheric probing in in-

Radiometers for rem frared from satellites [NASA-TM-X-63188] 12 p1870 N68-22924 ose of thermal radiome-

Transient temperature respo [ECOM-2917] 13 p2066 N68-23121

Integrating two-stage radio model of day-night radiomete [NASA-CR-94603] nt cooler into breadboard

13 p2068 N68-23609 Design, thermal analysis, testing, and breadboard in-egration of two-stage radiant cooler for high resolution

[NASA-CR-94600] 13 p2068 N68-23710 immersed thermistor

Development of germ detector for Nimbus radio [NASA-CR-94613] 13 p2070 N68-24165 absolute radiometer with librating radiometers for

Standard total-radiation improved accuracy for ca simulated solar radiation mer [NASA-CR-94609] 13 p2072 N68-24292

Radiometer design and measuring procedures for ab-olute irradiance measurements in near ultraviolet, visi-ile, and near infrared regions of standard incandescent 14 p2371 N68-24913

Lunar surface layer density measurement by Luna 13 using radiometric method of registering scattered [NASA-CR-94797] 14 p2349 N68-25590

rne radiometric system for measuring absorp-ission properties of atmospheric oxygen and floxide in microwave and infrared regions CR-68-15] 15 p2469 N63-26608 Airborne radiometric sys

RAIN X-15 aircraft radiometric measurement of earth in-frared horizon in three spectral intervals [NASA-TN-D-4654] 16 p2702 N68-28262 Metrorological wind, and temperature data from at-compleric radiosomic soundings in Southern Hemi-Low and medium energy fission properties of ele-10 p1568 N68-19912 NASA-TN-D-4429] 09 p1369 N68-19084 Radio Astronomy Explorer satellite radiometer for measuring cosmic noise in vicinity of 100 meter wavelengths [NASA-TN-0-4634] 16 p2666 N68-28327 Preparation and X ray analysis for crystal and atomic structure of 15 radium compounds [NP-17364] 17 p2840 N68-28867 North America 11 p1693 N68-21653 (AFCRL-64-30, V. 4) Wind and temperate eteorological sounding ryations - June 1967 iture measurement data from ng rockets, and radiosonds ob-RADIUM ISOTOPES Detection of terrain featur high resolution infrared radio res from Nimbus I satellite ometer nighttime measure-Thermal neutron fission and capture neutron cross section estimation for transurantum isotopes [CONF-680307-18] 14 p2311 N68-25050 11 p1736 N68-21827 [NASA-TN-D-4603] 17 p2877 N68-28872 Wind and temperature measurement data from meteorological sounding rockets, and radioacode ob-servations - July 1967 Systems analysis and performance test data on dual radiometer assembly for measuring far infrared wavelength bands of earths horizon radiance profile [NASA-CR-1086] 17 p2884 N68-28965 U RADII RADOME MATERIALS 14 p2286 N68-25593 Characterization parameters and equipment specifi-cations on fused silica slips for test radomes [GIT-A-994-2] 22 p3895 N68-35398 oviet bloc research efforts in radio aounding, ther forecasting, hydrology, air pollution, and Agricultural possibilities of used on Nimbus 2 high resolu-ata for equivalent black body ies of arid and sub-arid lands resolution infrared radiometer body temperatures 17 p2878 N68-29082 15 p2496 N68-25824 RADOMES data for equivalent mac [NASA-TM-X-63268] NAM: reRadiometric measurements at
Page 17 p.2881 N68-29426
17 p.2881 N68-29426
18 measurements at
Page 18 p. Time and space variability of atmospheric ballistic Methods used to measure complex dielectric con stant of Plexiglus radome [TR-0158/3230-46/-10] 15 p2497 N68-26636 [REPT.-7486-278] 13 p2030 N68-24155 Statistical temperature data analysis from wind tim-ref tests on Von Karman radomes [TG-983] [BRL-ARR-1912] Infrared acoustic correlation in free hot gas jets mea-mend by new optical system. [DGRR/WGLR PAPER-66-118] 17 p2875 N68-29550 Aerological radiosonde da atmospheric heights, tropopa ata evaluation for various 16 p2701 N68-27266 Temperature effect, stress analysis, and aerodynamics of Von Karman radome [TG-982] 15 a2520 bits 2000. Wind and temperature measurement data from meteorological sounding rockets, and radiosonde ob-servations - August 1967 Systems design of high-sensitivity radiometer for seasoning fast, intermediate, and slow neutron and 16 p2701 N68-27677 gamma radiation [FTD-HT-23-856-67] Thermal stress analysis of Von Karman radome sub-jected to aerodynamic heating in wind tunnel tests [TG-985] 15 p2571 N68-26629 18 p3073 N68-29889 Radiosonde data acquisition and reduction systeming strip chart recorder, strip chart digitizer, and Temperature induced errors in caloric radiometer [ECOM-2933] 18 p3074 N68-30012 digital computer Thermal-stress analysis of pyroceram radomes [APL-TG-980] 16 p2775 N68-27040 Spectrum analysis and calibration of radiometer for measuring infrared radiation [REPT.-4613-105-T] 18 p3136 N68-30637 17 p2885 N68-29127 Pressure distribution in apherical radome models [ESD-TR-68-84] Wind and temperature measurement data from meteorological sounding rockets and radiosonde obser-vations - September 1967 niform and gradient flow on Compensating effect of air layer between ground and radiometer during airborne meteorological surface temperature surveys

[7-497.4.203] 19 p.3304 N68-31451 18 p2997 N68-30081 17 p2909 N68-29398 New ozone radiosonde development and investiga-tion of air movements in lower stratosphere [REPT.-28/1967] 18 p3066 N68-29740 New ozone radioso on of air movements enna pattern errors during aerodynamic heating of radome [JPRS-45981] 19 p3241 N68-31606 Characteristics of experimental prototype of ab-Statistical analysis of radiosonde scalar data with data reduction and autocorrelation, and least aquares analysis of variance (REPT-3) 18 p3109 N68-30194 RADON 21 p3690 N68-34126 Convex-type silicon detector precipitator as collecting electro of alpha particles of radon decay [CLOR-65/D] or for use in electrostat ctrode for direct counting RADIONUCLIDES U RADIOACTIVE ISOTOPES Wind and temperature measurement data from eteorological sounding rockets, and radiosonde ob-restions-January 1968 03 p0343 N68-12374 Monte Carlo computer code for estimating internal gamma radiation dose in human simulation study [ORNL-TM-2250] 22 p3813 N68-35831 Meteorological effects on rac round level atmosphere 23 p4096 N68-37119 08 p1196 N68-17491 Radiosonde data comparisons of atmospheric tem-perature at 100-, 80-, 50-, and 30-mb levels, and tem-perature gradient effects on supersonic aircraft per-Distinguishing between natural and artificial at-coupleric radioactivity, and measurements of radon manation and concentration in soil and air 11 p1735 N68-21527 RADIOPROTECTIVE AGENTS
U ANTIRADIATION DRUGS RADIOSENSITIVITY
U RADIATION TOLERANCE (ESSA-TR-EDS-7) 23 p4097 N68-37381 inear operators from dual space of radon measures lanach space of continuous functions RADIOSONDES NT IONOSONDES NT RAWINSONDES Daily and averaged radiosonde data on aeronomy nd climatology obtained at Berlin, Germany, during 21 p3710 N68-33691 RAIL TRANSPORTATION 24 p4280 N68-38041 Radiosonde measured atmospheric moisture accuracy in terms of dew point from 40 to minus 40 deg C [TR-198] 02 p0232 N68-11401 Siting and design criteria for airports, highway, and rail installations to reduce community noise intrusion arising from transportation facility operations [RR-6] 05 p0698 N68-14189 Daily and averaged radiosonde data on aeronomy and climatology obtained at Berlin, Germany, during March 1968 Meteorological data from radiosonde ascents over Berlin during July 1967 24 p4281 N68-38042 Forty six annotated bibliographies on air transporta-tion, rail transportation, and motor transportation [AD-662414] 05 p0762 N68-14620 Daily and averaged radiosonde data on seronomy and climatology obtained at Berlin, Germany, during April 1968 03 p0362 N68-12049 Meteorological data from radiosonde ascents over Berlin during June 1967 Mathematical model for instability effect in railroad cars traveling at high velocities 24 p4281 N68-38043 03 p0363 N68-12050 Balloon-borne radiosonde measurements on at-moupheric turbulences over U.S.S.R. regions [FTD-MT-24-207-67] 24 p4282 N68-38167 Systems design and flight test data on chirp digital 07 p1037 N68-16969 Technology of high speed ground transport [PB-176923] 19 p3389 N68-31889 04 p0505 N68-12822 Radiosonde data tables of aerological measurements in upper atmosphere during January, 1968, for Ger-many Primary counic radiation variations effect on meson and nucleon components at ground level studied using nonlinear primary (REPT-2/1959) 04 p0503 NAS-33434 Nonlinear vibration problems in road and rail vehicular engineering [WTHD-4] 22 p3974 N68-35640 24 p4283 N68-38350 RADIOTELEPHONES BAIN Radiosonde meteorological data flights over Ger-Rain washout coefficients for sub-micron silver odice particles similar to those used in cloud aceding BNWL-SA-1405] 02 p023 N68-11539 Washout coefficients for silver lodide particles in Assembly and development of radio frequency por-tions of transmitter and receiver in thin film personal communications and telemetry system [NASA-CR-65937] 07 p0967 N68-17170 06 p0869 N68-15335 iodide particles sim (BNWL-SA-1405) Equipment, methods, and tabulated results of ozone measurement with electrochemical radiosonde at Ber-lin, Germany, Nov. 1966 - June 1967 Washout coeffic light snow and rain [BNWL-SA-798] Summary of radio relay development and application in U.S.S.R. 03 p0366 N68-12670 08 p1195 N68-17346 Design, and performance of various humidity sen-ors, and radiosondes Climatology data for southeast Asia including synop-ic patterns for monsocnal influences on wind, rain, and clouds RM-3418-PR] 04 p0333 N68-13397

16 p2621 N68-27290

Feasibility of using pulse code modulation chaiques for long distance telephone transmission per coatial cables 20 p3440 N68-33353

RADIOTHERAPY U RADIATION THERAPY

RADIUM

08 pl177 N68-17487

08 p1196 N68-17552

Comparison of Tiros 7 15 micron carbon dioxide channel radiometer temperature data with temperature data from radiosondes

Aerological data from radiosonde soundings ourna-ntember, 1967, over Germany 08 pl 197 N68-17686

High resolution continuous pressure sensor modifi-cation for radioscondes flown on hallooms [ECOM-5145] 09 p1367 N68-18286

Preparation and crystal chemistry of pron-compounds, vapor phase hydrolysis of a chlorides, lattice constants of lamihumides, and u-dioxide and radium studies [BMWF-FBK-67-76] 07 p0953 N88

07 p0953 N68-16172

09 p1335 N66-18996

09 p1370 N68-19166

Radioactive fallout in rainwater and airborne dost over Great Britain during mid 1967 [AERE-R-5575] 09 p1334 N68-18894

Tropical meteorological data catalog, including wind irections and speeds, moisture parameters, and rain-

Rainout of radioactivity in Illi [PR-6]

II data NCAR-TN-35)

RAN N' N'

SH

flig [N.] I lau Grin F

> G 1944 Uninym 3 (NA A) exter (NA Opend sor,

n

[FTI RAMP Dy ramp [ON! RANDM U S RANDM Co statis

D

The problem on it is not in the problem on it is not in the problem of the proble

Hei simuli flight RANDO NT

Gaussi square [ARC Sec thin s interni [TR-6

Res excita techni [NAS. Con ferent linear

19 p3287 N68-30896

satic hydrocarbons and

19 p3233 N68-31994

Airborne instrumentation and measurement accura-cy in silver iodide cloud seeding for rainfall augmenta-Rain erosion behavior of galvanic surface layers on steel structures 09 p1354 N68-19421 INRC-99781 10 p1529 N68-19869 Test parameter effects on material erosion by rain-Extreme daily rainfall an ts in South Vietnam 13 n2100 N68-23795 09 p1446 N68-19425 Prediction equation rainy season in south ating date of onset of ism of single droplet impacting on tetnam 13 p2101 N68-23944 09 p1446 N68-19427 Attenuation and scattering effects on rain detection Electroplated nickel coatings for protecting plastic aircraft components from damaging effect of rain by radar (TR-0158/3525-09/-11 13 p2102 N68-24174 AFML-TR-67-3561 13 p2086 N68-23202 Climatological estimatusing annual rainfall data [AWS-TR-202] ton of clack hour rainfall extra Polyurethane plastic coati ngs for rain impact erosion AFML-TR-67-3551 16 p2687 N68-27327 Distributions of radioactivity and chemical con-stituents in rainfall PAINDROPS In-cloud drop size distribution function measured by 24 p4289 N68-38414 Precipitation scavenging of s (P-181 01 p0086 N68-10019 bmicron particles 24 p4289 N68-38416 General mete neral meteorological radar equation derived from rent scattering of radar waves by cloud droplets Calculations based on convective and Brownian diffusion to predict rain wash and raindrops [EMM-67-159] 03 p0363 N68-12080 24 p4289 N68-38417 static radar of of drop size distributi Artificially placed tracers for study of scavenging by in rain sh 09 p1368 N68-18556 [PUBL-1311 24 p4289 N68-38418 Rain impact damage, and water tructural materials - aircraft str peeds, metals, plastics, ceramics, s ter erosion effects on RAIN EROSION U WATER EROSION RAIN GAGES 09 p1337 N68-19401 Steady precipitation research based on rain gage network data pike tests for drag reduc-13 n2100 N68-23861 tion, and rain drop di Intensification of precipitation and cloud seeding effectiveness from rain gage networks and radar observa-09 p1268 N68-19413 Test parameter effects on material erosion by rain-(T-R-5071 13 p2100 N68-23863 Error analysis to determine accuracy of precipitation data recorded by meteorological network stations [M-7369] 9 N68-32438 09 p1446 N68-19425 Water drop size, and erosion resistance of impinged Correlation of rain gage mean levels in regions of Soviet Union [M-7370] ean data on precipitation 09 p1446 N68-19426 sm of single droplet impacting on 20 p3519 N68-32439 Statistical analysis of total liquid precipitation struc-ture and mean depth from rain gage data [M-7372] 09 p1446 N68-19427 on of cloud di et spectrum by introduction of particles that absorb (T-R-550) BAIN IMPACT DAMAGE 13 p2100 N68-23891 Multiple impact rain erosion of airframe materials studied at speeds up to 450 m/s in test facility [RAE-TR-67019] 06 p0857 N68-15423 re effects on cloud droplet growth rate 23 p4095 N68-36821 [RM-5489-PR] Rain impact damage, and water erosion effects on structural materials - sircraft structures, supersonic speeds, metals, plastics, ceramics, steels, and protective continues NT THUNDERSTORMS per atmosphere ice crystals for triggering cirrus (PB-175993) 07 p1018 N68-16674 09 pl337 N68-19401 nation of rainy season in relation to t of monsoons in east Asia 09 p1369 N68-18791 Onset and termination of advance and retreat of more Neoprene coating techniques fiber polyester laminu ique for rain erosion tests on 09 p1356 N68-19402 Rain impact damage tests on polymers, ceramics, ut of radioactivity in III [PR-6] 09 p1335 N68-18996 09 p1337 N68-19403 Nickel electroplated noncon erosion protection of aircraft st ctive coatings for rain Wind tunnel tests of rain erosion effects on aircraft flying at transposic speed 09 p1354 N68-19416 09 p1337 N68-19404 Space communicat 17 p2853 N68-29111 Environmental hydrometeor standards for super-sonic aircraft structures Synoptic-statistical analysis and forecast method for overe rain situations in central Europe 20 p3524 N68-33256 09 p1272 N68-19405 Effects of impact velocity, impingement angle, and drop size on rain erosion rate of solids.

09 p1338 N68-19408 ADIO ATTENUATION MEASUREMENT M PROJECT Development of single in rain erosion damage studies pact laboratory device for on solids RAMAN SPECTRA 09 p1324 N68-19410 timulated Raman em m in nonlinear media ion and self focusing of laser Polyurethane coatings for subsoni tection of metallic, and plastic lamin Stir onic rain erosion pro-09 p1356 N68-19411 02 p0219 N68-11081 on computed from Q-Single impact gun for rain erosion studies, and analysis of experimental rain impact damage data
09 p1324 N68-19412 witch laser [REPT.-8581] 02 p0220 N68-11765 Rain erosion effects on dielectric materials, coatings, composites, and ductile metals at supersonic speeds 09 p1356 N68-19415 Infrared and Raman spectra of bis trifluoromethyl NASA-CR-91342] 04 p0464 N68-12868 Nickel electroplated nonconductive coatings for run-grosion protection of aircraft structures 09 p1354 N68-19416 Simulated Raman emission from toluene and enzene materials using giant-pulse ruby laser 7-19] 07 p1005 N68-16816

Raman and infrared spectra of liquid pyridazine, and susterated pyridazines

Ruby laser excitation for Raman spectra analyses on rganic solids

09 p1297 N68-19133

09 p1350 N68-19478

Quantum mechanical theory of stimulated resonance aman scattering and laser synchronization by FTD-MT-66-871 12 p1915 N68-22129 mechanica aman scatt nalysis of stimulated during transition from ntum nce Ra 12 p1922 N68-22130 Raman spectroscopy for laser ex [SAR-5] excited liquids 13 p2110 N68-23956 ne spectra for laser excited liquids, includ-disulfide, benzene, toluene, oxygen, and 13 p2110 N68-23957 aman emission in mixtures of acetone and carb nsers 13 p2110 N68-23958 Infrared and Raman lattice modes of mixed polar crystals (TR-19) 14 m2328 N68-24348 infrared and Ra tional spectra of ethylstituted analogs [AFML-TR-67-292] ethyl beampe Raman Quantitative analy spectra 15 p2415 N68-26406 nfrared and R nd structure of several 16 p2609 N68-27648 or absorption using 17 p2936 N68-29212 ing spec 18 p3083 N68-30085 IFTD-HT-66-4961 18 p3023 N68-30113 [TR-6] First and second Stokes of during forced Raman scatters [NASA-TT-F-11816] to of laser b 18 n3084 N68-30212 Overlapping spectral line pressure broadening theory INASA-TT-F-118171 18 p3137 N68-30730 Raman spectra of lead tits solutions of sodium tantalum talum trioxide and potassium s [NASA-CR-96362] nium trioxide and solid trioxide-potamium tan-iobium trioxide 20 p3575 N68-33454 Far infrared and Raman spectra studies of hydrogen 21 p3646 N68-33638 an scattering and refractive index of. fects in liquid 21 p3700 N68-34485 Raman spectra of xer fluoride, and iridium per difluoride, iodine pen-(TR-2/7/) 22 p3826 N68-35491 d on off axis resonator 23 p4071 N68-36061 ulated Raman effect in off-axis resonator 23 p4072 N68-36305 pectra determined for hydrogen and deu-de crystals in all temperature phases 23 p4012 N68-36906 [TR-3/28/] RAMAN SPECTROSCOPY Stime slated Raman effect under high intensity laser on studied in hydrogen gas 03 p0349 N68-12269 (TR-539) els, and radiation spectra using gas lasers 13 p2079 N68-24329 Line structure, energy of Raman scattering stud [SATR-4] Random molecular Raman spectroscopy, nuclear magnetic reso [NIJS-R-521] n data from infrared and tic neutron scattering and 18 p3131 N68-30056 Raman effect and Rayleigh scattering spectroscopy for photon absorption by mass in electromagnetic fields 18 p3083 N68-30085 [FTD-HT-66-496] of laser Raman spec-Redesign and con [TR-4/29/] 18 p3085 N68-30548 Hydrodynan acked structu or Raman spec nic behavior of multi-subunit particles on ares and use of ruby laser as light source

quid shock impact effects on polymethyl acrylate, and aluminum copper alloys 09 p1446 N68-19419

oretical calculations, and rain erosion test pro-

09 p1356 N68-19420

rge lumps used for Raman stu-salts, curbon tetrachloride, and Electrodeless discha-dies of colored fused 21 p3647 N68-33782 17 p2979 N68-28614 RAMJET ENGINES
NT PULSEJET ENGINES
NT SUPERSONIC COMBUSTION RAMJET ENwith viscoel 20 p3599 N68-32252 accountic fatigue consi ith random loads History of ramjet engine design, development, and flight testing in Russia through 1944 [NASA-TT-F-11429] 04 p0565 N68-13566 0 p3605 N68-33327 RANDOM NOISE Limitations of ramjet engines for spacecraft and ation of FM demodulator noise 04 p0566 N68-13567 02 p0181 N68-11395 [NOLC-724] Operational and design characteristics of ramjet en-ses, and requirements for hypersonic aircraft 04 p0566 N68-13569 n noise and vibra-03 p0420 N68-12157 Flight tests of early ramjet engines 04 p0566 N68-13570 ns for products of ince and covariance 06 p0797 N68-15308 Probability de bivariate Gaussian (PAF-TR-67233) of finel com Firing prototype ramjet rockets ar for optimal estim 04 p0566 N68-13571 Design and flight tests of aircraft with ramjet engir in 1939-1940 NASA-CR-92981 20977 N68-16918 04 p0566 N68-13572 d limited signals cor-eath, and Doppler of Ground and flight tests of ramjet engines in 1942ects NRI -6673) 10 p1497 N68-19984 04 p0566 N68-13573 Unstarted inlet flow field during restart cycle of axanalysis to estimate Frequency and tin periodic signals in nois [5-68-1019] 11 p1662 N68-21523 INASA.TM.X.15471 11 p1621 N68-21703 naust plame effects on nion of X-15 aircraft 14 p2336 N68-24614 external pressure of n (NASA-TM-X-1571) 11 p1733 N68-21790 Optimum supersonic diffu ended ram jet, flow field co or, central body contour ad e of signal averaging rs - relationship with ap-putations, buzz suppres-station to variable flight veforms 12 p1872 N68-22110 nd signal through cur-and masker 13 p2026 N68-23472 (RAE-LIB-TRANS-1285) 17 p2962 N68-29459 Design principles of rocket and rainjet engines for unmanned flight vehicles [FTD-MT-24-108-68] 22 p3954 N68-35235 s and unknown noise (RE-285J) 15 p2424 N68-25984 RAMP PUNCTIONS Dynamic response of wedge she 15 p2508 N68-26070 ramp air intakes at supersonic s (ONERA-NT-117) 04 p0437 N68-13677 a to broad and narrow RANDOM DISTRIBUTIONS
U STATISTICAL DISTRIBUTIONS 15 p2483 N68-26168 RANDOM ERRORS Construction of optimal line tatistical predictive error dispe ear control system with 16 p2618 N68-27057 sion 06 p0819 N68-15579 on and applicability to Theory of linear est problems of smoothing ude of energy nonlinear estimation [NASA-CR-62053] spectra of random (TM-203.3361-11) 11 p1733 N68-21837 19 p3236 N68-30972 random error correcting variance operators, and sunication theory 19 p3236 N68-31016 [NASA-CR-95142] Effect of errors on orbit [ETV-TM-68-86-TM-89] 19 p3259 N68-31940 Block, interfaced, cyclic, and product codes for cor-ecting burst errors and random errors ory system with input 23 p4017 N68-36046 21 p3663 N68-33761 Helicopter flights along selected VOR routes under mulated IFR operations to assess vertical and lateral light technical errors 23 p3990 N68-36652 21 p3785 N68-33804 NT GUST LOADS irved panels to high in-uency noise 21 p3789 N68-34344 tensity random and disc INASA-TM-X-612001 e case for p square values [ARC-R&M-3513] 03 p0424 N68-12652 Second order con nin shell displaces elation function of linearly elast ent field subjected to rando 22 n3852 N48-35723 ds subjected to rando 04 p0588 N68-13313 23 p4183 N68-36932 is to random acoustic nel models and specifi-24 p4222 N68-37589 [NASA-CR-91812]

05 p0750 N68-14648

ct to random excitation 05 p0751 N68-14854

v due to broad and narrow

linear structural syste [NASA-CR-91803]

RANDOM NUMBERS

of uniform pseudorendo INASA-TM-X-60370)

erator 16 p1474 N68-19769

15 p2491 N68-25696

ply in ger

(D1-82-0689) 15 m2433 N68-26378 space integral 17 w2924 N68-28413 18 p3102 N68-29917 upply having to 0 #3517 N68-33275 01 p0041 N68-10301 neural networks 01 p0016 N68-10515 Signal repre nalysis - properties of used in detecti (AD-6612111 03 p0320 N68-12055 rations for use in (FTD-MT-67-23) 63 -0325 NAR-12337 on process 03 s0323 Non-12484 [JPRS-43551] 04 p0530 N68-13328 Nonparametric testing of ergodic properties of given set of samples from time series 04 p0502 N68-13596 walk model of photoem ITR-0158/3230-13/-11 05 p0728 N68-14504 06 p0902 N68-15062 egate of causal effects 06 p0904 N68-15081 06 p0904 N68-15082 06 p0817 N68-15200 INASA.CB.919021 06 p0924 N68-16093 [NASA-CR-61 1901 07 p1035 N68-16431 monary rando Generation of process with specific [NASA-CR-92799] O N68-17150 Performance of queueing od queueing system 10 p1512 N68-19866 liating systems 11 p1745 N68-20907 r delay systems 11 a1727 N66-20910 systems 11 p1745 No DLR-FB-67-891 11 p1746 N68-21215 PAE-TR-47134) 11 p1626 N68-21794 13 p2081 N68-23312 13 p2056 N68-24344 14 p2197 N68-24788

SU

in in it is in in it is in it

Preliminary results concerning random graphs, di- graphs, time dependent processes, and probability models	Stability of assumptions used to determine autocor relation and spectral density functions of nonlinear devices or filters	
[NASA-CR-84674] 14 p2281 N68-25430	[RR-68-1] 14 p2231 N68-24470	Asymptotically robust competitors of one sample
Limiting distribution of sums of random number of independent variables	Real time digital filtering limitations for non-sta- tionary random processes	(TR-70) 09 p1362 N68-1876
independent variables [TR-86] 15 p2495 N68-26762	15 p2424 N68-26061	Limiting distributions of maximum likelihood
Soviet textbook on random processes, optimal con- trol, and correction methods in automatic systems	Optimum estimator for random signal sequence derived by digital computer and evaluated by Monte	statistical tests
[FTD-MT-24-127-67] 16 p2633 N68-27135	Carlo method	Ctatistical analysis on machine autilian analytics of
Gravity anomalies and linear transforms over rotat-	[NASA-CR-87241] 16 p2623 N68-27560	fact on surface coughness and power requirements
ng spheres treated as random process with spectrum malysis and applications for geodesy	Behavioral and physiological experiment studying ef- fect of predictable and random electric shock signals	Cost auticipation of allocation cats of salaraness of
NASA-CR-83742] 16 p2654 N68-27466	on rats 18 p3007 N68-29665	cost optimization of anocaring acts of operances of
Optimal control of multivariable stochastic process a applied to hydrofoil craft	Response of frequency modulation discriminator to	to given constraints on output variables
16 p2634 N68-27673	frequency modulated signal in randomly fading chan-	Interaction of optical system with incoming
Automatic stochastic predictor model BCL-8-2] 16 p2635 N68-27800	18 p3036 N68-30243	wavefront in presence of atmospheric turbulence
Suboptimal solution for optimal feedback control	Efficiency of nonparametric tests in detection of	[TR-19] 10 p1558 N68-1995; Probabilistic measures of system function deviation
roblem in systems with random parameters 19 p3255 N68-31134	stochastic signal in noise 19 p3236 N68-30937	der to anadom undetlose or laborate costom appropri
Solving equations of motion to obtain relationship	Multichannel reception of signals that depend non-	[AFOSR-68-0327] 10 p1549 N68-20456
etween random crew motions and angular change in	[FTD-HT-23-518-67] 19 p3241 N68-31567	Impedded semi-Markov analysis on time dependen
nacecraft orientation 19 p3218 N68-32043	Acoustic measurements of jet engine noise contain-	and asymptotic distributions for queueing and waiting
Existence and uniqueness theorems proved for ran-	ing discrete frequency components in presence of ran-	[AD-663783] 11 p1725 N68-20761
om ordinary differential equations AD-672207] 21 p3715 N68-34669	dom noise signals [D6-8786] 20 p3397 N68-32210	Information theory in sequential analysis
Role of diffusivity in turbulent dispersion	Sources of electrical poise in insulation	[ORNL-4208] 11 p1730 N68-21209
23 p4042 N68-36013	22 p3915 N68-35120	Methodology used in guidance system performance analysis /assessment/
Linearly dependent process measurement without ference to generating Markov chains	Noise generation and reduction in Zener diodes 22 p3846 N68-35122	[NASA-CR-1016] 11 p1783 N68-21442
24 p4274 N68-37591	Test instruments and methods - noise generator and	Random and systematic factors in creep scatter data
DOM SAMPLING	spectrum analyzer for measuring system random noise and impulse noise signals	[ARC-CP-935] 12 p1979 N68-22822 Associated random variables defined and results ap-
Fortran analytic solution of transport equations by	22 p3874 N68-35131	plied to reliability models of various types of main-
ndom sampling in radiation shielding design and alysis of nuclear rocket systems	Optimum receiver method for estimating phase dif-	[D1-82-0696] 13 p2093 N68-23394
ASA-CR-91238] 04 pu240 Non-13209	ferences between stochastic narrowband signals 24 p4223 N68-37640	
Statistical approach to analysis of public opinion on ntinental defense	Parameter probability density distributions for gaus-	Analysis and synthesis techniques for linear systems and methods of minimizing sensitivity of optimal con-
IRNL-TM-1919] 05 p0759 N69-14120	sian pulse and radio signals 24 p4223 N68-37697	trol systems to large parameter variations [NASA-CR-93731] 13 p2044 N68-23561
Sequential sampling problems in trial, and error proing strategy	RANDOM VARIABLES	Optimal control of plants with random slowly varying
R-03105-49-T) 09 p1358 N68-18397	Mathematical expectation asymptote for rate of con-	parameters 13 p2045 N68-23565
Frequency function for testing small samples for	vergence of random search for global minimum of vari- able function	Distribution and properties of weighted sum of chi
odness of fit to normal populations (ASA-TN-D-4405) 09 p1364 N68-19144	01 p0041 N68-10304	aquares random variables
Secondary proton and neutron dose equivalent odel calculations of random position, kinetic energy,	Periodic and random perturbations effects on non-	[NASA-TN-D-4575] 14 p2280 N68-24565
odel calculations of random position, kinetic energy, id servival weight	[FTI-102/T-035] 01 p0107 N68-10477	Power of tests for uniformity of circular distribution [TR-78] 15 p2492 N68-26290
15 p2553 N68-26146	Probability distribution in studies of riff shuffles as	Probability density and cumulative distribution func-
Sequential Monte Carlo sampling method for linear	Markov process [ORNL-4156] 01 p0084 N68-10478	tion tables for quadratic forms in variables [AFOSR-68-0793] 15 p2492 N68-26294
stems of equations (RC-TSR-816) 15 p2493 N68-26415	Distributions of random quantities in applied proba-	Asymptotic methods for estimating distribution and
Sampling and probability theory for estimating	bility [TR-28] 01 p0085 N68-10642	expected value of stopping variables [TR-83] 15 p2495 N68-26733
mber of system failures in telephone networks ITR-575] 16 p2618 N68-27008	Characteristic functions of random vector with linear	
Reliability and confidence limits for random sample	functional components of process having independent	Chebyshev type inequality for sums of independent random variables
MC-MP-68-2] 16 p2667 N68-27330	o2 p0226 N68-11066	[AD-668978] 16 p2693 N68-27192
Optimal control of satellite attitude acquisition by	Source encoding in presence of random disturbance	Proving local limit theorems for large deviations of sums of independent random variables
sdom search algorithm of hybrid computer	[NASA-CR-90295] 02 p0180 N68-11095	16 p2697 N68-27761
ASA-TM-X-61197] 21 p3673 N68-34394 Statistical estimation and hypothesis analysis for	Composition limit theorems for probability generat- ing functions	Solving problems of statistical inferences based on
ribull and extreme value distributions	[MRC-TSR-732] 02 p0228 N68-11349	independent observations and distribution function of random variables
RL-68-0068) 24 p4275 N68-37644	Variance of increasingly smoothed random variable [BNWL-SA-1406] 02 p0229 N68-11505	16 p2716 N68-27769
statistic confidence bounds on reliable life for ribull sampling model with progressive censoring 24 p4275 N68-37645	Mellin transforms used to find probability distribu-	Asymptotic method for determining random insta- bility of nonlinear oscillations
	tion of products of beta variables	[NP-TR-1625] 16 p2717 N68-28075
Itatistic analysis of equality hypothesis for scale ameters of populations with asymptotic extremum	[TR-50] 02 p0230 N68-11800 Estimation problems related to geometric distribu-	Mathematical methods for finding minimum of func- tion of n variables
pe distributions	tion and sum of two independent nonidentically dis-	17 p2857 N68-28585
24 p4275 N68-37646 expected value tables of order statistics from first	tributed random variables [TR-130] 03 p0360 N68-12291	Statistical gamma distribution and Martingale
nptotic distribution to extremum values for sam-	Integral limit theorems for large deviations of sums	sequence applied to sequential analysis [TR-60] 18 p3101 N68-29569
1 size	of independent random quantities when Cramers con- dition is broken	Convergence of sums of random statistical variables
OM SIGNALS	04 p0530 N68-13329	[AFOSR-68-1072] 18 p3105 N68-30411
igital smoothing algorithm for discrete random als - transmission delay of smoothed input signal	Tests for monotone failure rate based on normalized	Synthesis of random variable from power spectrum for application to onboard and inflight alignment of carrier aircraft inertial navigation system platforms
als - transmission delay of smoothed input signal	spacings [ORC-67-37] 06 p0863 N68-15517	carrier aircraft inertial navigation system platforms
01 p0043 N68-10324	Probability density function of chi-square statistics	
easibility of using Fourier transforms in expressions	applied to goodness of fit tests [NASA-TM-X-63100] 07 p1013 N68-16400	Approximate generation of random variables when using Monte Carlo method for solving statistical problems
easibility of using Fourier transforms in expressions ross spectral density and power spectral density in tral human response analyses	Bayesian reliability growth mathematical model	problems [AROD-4721-15-M] 24 p4278 N68-38277
06 pu/81 Nos-13913	[TR/RP-80] 07 p1014 N68-16603	Variance of increasingly smoothed random variable
Analytical treatment of electromagnetic scattering of adband random signals by discrete target	Probability distribution functions for sums of certain random variables compared to Gaussian approximation	applicable to atmospheric pollution studies 24 p4288 N68-38408
PCHL-67-0602] 06 p0802 N68-16055	The second section of the second section of the second sec	
Andrew Arm Arm Sanda Arm Material and an all and	[SC-RR-67-799] 08 p1192 N68-17234	RANDOM VIBRATION
Pesign of random signals for digital communication	March all annual and the state of	
Design of random signals for digital communication 10 p1495 N68-19741 Wideband random signal radar system	Stochastic approximation algorithm to estimate probability density functions of random variable	Statistics of switching time jitter for tunnel diode threshold crossing detector [NASA-CR-90306] 02 p0190 N68-11039

447

767

boe

ef-

619

on

919

ing

952

ion me-

284

ent

768

209

nce

442

sta 822

394

561

ing

565

chi

565

294

733

192

of

761

769

sta-

075

mc-

585

ale

560

es 411

198

277

hie

ode

039

se of panel flutter and vibration to simulated jet aircraft noise [D1-82-0652] 04 p0590 N68-13817 Theoretical and practical applications of correlation methods in calculating rundom structural vibrations [TDCK-49420] 06 p0922 N68-15672 Random and sinusoidal vibration effects on heat pipe LA-3798) 07 p1095 N68-16650 Flight vibration data of Astrobee 1500 rocket vehicle INASA-TM-X-631281 09 p1437 N68-19210 Systematic methods for determining dynamic characteristics and random vibration of linear struc-(TR-53) 11 p1793 N68-20866 Controlled feedback to evaluate stability reserve of stochastic objects undergoing stationary random varia-12 p1853 N68-22286 General theory for determining exceedances of ructural interaction boundaries for random excitation 13 p2158 N68-23311 [ARAP-1131 Finite element approach to dynamic analysis of vibration modes and random response of multibay panel system [NRC-10001] 13 p2164 N68-24282 Pressure fields in elastic shell with random vibrations 14 p2298 N68-24720 Fokker-Planck equations for random vibration analyses on discrete nonlinear dynamic systems 14 p2300 N68-25378 Random vibration response data for orbiting geophysical observatory - comparative analysis of flight, acoustic, and vibration tests 14 p2363 N68-25501 Random vibration test level control using input and test item response spectra 14 p2363 N68-25502 Random force vibration testing 14 p2363 N68-25503 Vibration methods for multiple ra e random excitation 14 p2363 N68-25505 ntegrated random vibration-electrical test method demonstrating performance of rendezvous radar 14 p2364 N68-25509 ck and vibration studies /cos onference/ 14 p2364 N68-25525 [AD-667229] S-IC reliability program - simulation of transient vibrations occurring during engine phase of static firms using short duration, high intensity shaped ran-dom vibration test 14 p2365 N68-25529 Spatial correlation spectrum of field of plate vibra-tions under wideband random loading 18 p3182 N68-30660 Stochastic stability of heavy liquid free surface en-closed in partly filled prismatic cylinder subjected to random vertical acceleration [NASA-CR-98009] 23 p4052 N68-37231 U CATALYSTS U NICKEL RANGE [EXTREMES]
NT FREQUENCY RANGES
NT SUBAUDIBLE FREQUENCIES Extreme values for asymmetric graphs 12 p1897 N68-22084 Variational principles for lower bounds in ground state particle energy and free energy of ferromagnetic systems in many body problems 17 p2919 N68-28400 RANGE AND RANGE RATE TRACKING Error model for Doppler range rate and phase modulated range tracking system for which data weighting factors can be obtained for use in space vehicle trajec-(NASA-TN-D-4267) 02 p0193 N68-11513 Goddard range and range rate system performance while tracking IMP-F [NASA-TM-X-63040] 02 p0182 N68-11651 Modulation techniques for position fixing by range measurements from two or more satellites [NASA-CR-86017] 04 p0534 N68-13132 Oscillator stability in range and range rate tracking

[NASA-CR-80891] 05 p0631 N68-14819 Onboard range and range rate measurements of lunar beacons for position and lunar orbit estimation [NASA-TM-X-1529] 09 p1423 N68-19064

Signal processing techniques for range and range rate measurements in airborne range and orbit deter-[NASA-CR-61670] 10 p1495 N68-19632 Range and range rate med determination program PROF [RAE-TR-67199] ements used in orbit 10 p1595 N68-20367 Spin axis for spinning range rate data [NASA-TN-D-4483] 11 p1782 N68-21182 Long are orbital solutions fr to evaluate range and range rai [NASA-TM-X-63159] m Geos-I satellite used tracking system 11 p1664 N68-21660 Coordinates for MADGAR range and range rase site estimated from Geos-1 [NASA-TM-X-63154] 11 p1664 N68-21678 Modulo acquisition of a biguity resolving tracking [NASA-TM-X-63167] 12 p1842 N68-21921 Radar ambiguity functions constructed with angle and angle rate and range and range rate as variables [RAE-TR-67266] 12 p1898 N68-22280 Comparing measured ranges from range rate tracking systems with optical reference orbits [NASA-TM-X-63199] 13 p2027 N68-23523 Data from radar range a nd Doppler observations of (NASA-CR-95374) 16 p2770 N68-28254 Correlation pattern between Goddard Range And Range Rate KRARR/ system optimum antenna polarization and IMP orbit position [NASA-TM-X-63263] 17 p2850 N68-29077 17 p2850 N68-29077 Description and test evaluation of prototype laser satellite tracking system [NASA-CR-96739] 21 p3701 N68-34735 21 p3701 N68-34735 Spacecraft radar preser rendezvous and soft landin [NASA-TM-X-60473] nt and future applications in 23 p4020 N68-36488 RANGE CONTROL

U TRAJECTORY CONTROL RANGE ERRORS Line-integrated refractivity measurements for valuating atmosphere-induced radar ranging data er-[D1-82-0639] 04 p0478 N68-13271 Oscillator stability in range and range rate tracking NASA-CR-80891] 05 p0631 N68-14819 RANGE FINDERS
NT OPTICAL RANGE FINDERS Modified control logic with random-number procedure to determine error effects on range controller of reentry vehicle [NASA-TN-D-4317] 05 p0687 N68-14732 05 p0687 N68-14732 Computer plotted range, height, and elevation angle charts for radar antenna [NRL-6650] 10 p1497 N68-19976 Radar modulation waveforms with optimum signal utocorrelations for rangefinding 16 p2624 N68-27804 Flight tests of airborne beacon range altitude monitor feasibility model for interrogating air traffic control radar beacon system transponder-equipped aircraft [RD-68-48] RANGE INDICATORS
U INDICATING INSTRUMENTS

RANGE MEASUREMENT U RANGEFINDING

RANGE SAFETY

Flight safety requirements, restrictions, and instru-mentation secessary for Apollo/Saturn 1B launches [NASA-TM-X-60841] 07 p1084 N68-16194

Range safety analysis for Saturn 1B nose cone and command service module configurations. [NASA-CR-93715] 10 p1589 N66-19572 Range safety data with trajectories, impact, and sualty probability for Saturn 1B/AAP-1A launch [NASA-CR-93656] : 10 p1600 N68-20413

RANGEFINDING
NT AIRBORNE RANGE AND ORBIT DETERMINATION
NT SOUND RANGING Line-integrated refractivity measurements for valuating atmosphere-induced radar ranging data er-[D1-82-0639] 04 p0478 N68-13271

Least squares adjustment of satellite observations for simultaneous directions or ranges [NASA-CR-93425] 09 p1333 N68-18763 Simulation and analysis of over ocean separation assurance procedures and displays [NA-68-14] 09 p1373 N68-19372

S band turnground ranging transponder [NASA-CR-93669] 09 p1306 N68-19390 Comparative accuracy of two passive rangefin (OEG-RC-80) 13 p2030 N68-24178 Laser applications in medical science, welding, ran-rfinding, material testing, retinal tumors, and plasma NOLTR-68-53 20 p3492 N68-32374 Technique for visibility a erver sighting and target rec SIO-REF.-66-13) ty calculations of serial ob-recognition ranges 21 p3693 N68-34523 Spectral studies of signals present in command and onnunications system uplink transmitter of Saharn 5 adio frequency tracking and ranging systems NASA-CR-98033] 23 p4023 N48-37208 radio frequency tracking and ranging systems [NASA-CR-98033] 23 p4023 N RANGER BLOCK 3 TELEVISION SYSTEM Microwave voltage breakdown at critical p 15 p2445 N68-26897 Materials engineering supects of corons and arcing phenomena - evaluation of materials used in high voltage units in Ranger 6 television system

15 p2446 N68-26899 RANGER LUNAR PROBES Optical imaging systems for Ranger, Mariner, and Surveyor television 19 p3280 N68-31764

RANGER PROJECT Lunar mapping from stereophotographic measure-ments from Ranger photography [NASA-CR-92080] 12 p1873 N68-22331 RANGER 6 LUNAR PROBE

Materials engineering aspects of corona and arcing the nomena - evaluation of materials used in high voltage units in Ranger 6 television system. 15 a 2446 N68-26899 15 p2446 N68-26899

RANGES (FACILITIES)

NT BALLISTIC RANGES

NT MISSILE RANGES

NT TEST RANGES Digital data transmission subscribers and range comm [MTR-409] pethods between remote nications control centers 04 p0476 N68-13093 Systems engineering plan for national range data anuminion system

MTR-434] 10 p1499 N68-20182

MTR-434] RANGING U RANGEFINDING

RANK TESTS Statistical test theory based on asymptotic linear embinations of bivariate layer ranks 10 p1546 N68-19759

Explicit solution of linear programming operations research problems extended to case of arbitrary rank [AD-672584] 22 p3900 N68-35433 RANKINE CYCLE

Comparison of load-bearing conical nonload-bearing and heat radiators for potassium Rankine nuclear NASA-CR-72307] 01 p0088 N68-10050 Electromagnetic pump designs for use as be pumps in Rankine cycle, space electric power [NASA-CR-911] 01 p0069 No

pumps in Rankine cycle, space electric power plants [NASA-CR-911] 01 90049 NdS-10303 Design study of electrical component technology for 0.25 to 10.0 megawatt space power systems [SAN-679-3] 01 90006 NdS-10967 Energy conversion components for large, Rankine cycle spacecraft power systems Energy conversion compone cycle spacecraft power systems 03 p0371 N68-12192 Fabrication and evaluation ry alloy corrosion test loop on of Rankine system refrac-

tory alloy corrosion t (NASA-CR-72335) 04 p0522 N68-13658 Fabrication and evaluation of Rankine system refrac-tory alloy corrosion test loop [NASA-CR-72336] 04 p0516 N68-13659 Compatibility of materials for single, and for multiple loop Rankine cycle power systems [ORNL-TM-1964] 04 p0541 N68-13744

Weight, heat transfer, and efficiency comparison for Rankine cycle space radiators constructed of three dif-ferent fissed table peometries (NASA-TN-D-441) 07 p1094 N68-16324 07 p1094 N68-16324

Or p.1094 N68-16324
Organic Rankine cycle boiler feasibility and testing [PRF-67-1184]
Or p.0958 N68-16301
Mechanical design and development test program for two-stage potentium vapor Rankine cycle turbine [NASA-CR-923]
Or p.0940 N68-17075
Development engineering for Rankine system corrosion test foog, and specimens preparation for familian along capacity tests.

07 p0941 N68-17194 [NASA-CR-72352]

S

del [JI

to bar

MIC [JII

C

Alkoxy and acylexy derivatives of lanthanons 20 p3426 No8-32864

Rankine cycle low power turbocompressor for space 08 pi121 N68-17799 and performance of facility for Rankine ium vapor turbine 08 pl 125 N68-18044 cycle testing of two stage pota [NASA-CR-924, V. 3] SNAP 8 simulator using primary sodium-potassium loop, mercury loop operating on Rankine cycle, and hear rejection sodium-potassium loop [NASA-TM-X-1515] 09 p1322 N68-18460 Performance tests of vapor turbines for use in Ran-kine cycle space electric power generators [NASA-CR-72273] 09 p1276 N68-19007 Design criteria for Rankine magnetohydrodynamic generators in space applications [NASA-TM-X-5219] 09 p1276 N68-19019 Mathematical model for deriving pressure drop against flow function of counterflow boiler tube in Rankine space power system [NASA-TN-D-4498] 10 p1613 N68-20066 Steady state perform nce tests on single pass coun-m cooled mercury Rankine cycle condenser [NASA-TM-X-1548] 10 p1615 N68-20340 Lunar surface layer cor ed to store solar energy for generating power during lun [NASA-TM-X-1560] ar night 10 p1461 N68-20363 Operational characteristics of two loop lithium boil-ing potassium system of niobium zirconium Rankine cycle test loop [NASA-CR-93910] 11 p1679 N68-20943 Biphenyl and extectic mixture of biphenyl and biphenyl ether working fluids for organic Rankine cycle power conversion system for operation in space ISAN-651-431 11 p1629 N68-21127 Liquid metal boiler conditioning studies applicable to Rankine cycle systems [GLR-55] Phase distributions in forced flow boiling applicable to Rankine cycle systems [GLR-58] Primary loop transients during startup of Rankine cycle space power system in SNAP 8 simulator [NASA-TN-D-4546] 12 p1819 N68-22257 IP 8 simulator 12 p1819 N68-22257 Fabrication of T-111 Rankine system corrosion test op using tantalum alloy capsules filled with alkali [NASA-CR-72383] 13 p2170 N68-23724 Frequency response analysis for forced flow single tube boiler containing Freon [NASA-TM-X-60523] 14 p2193 N68-25280 m as working fluids in Rankine Cesium and potassi cycle space power pla [NASA-CR-95616] 17 p2815 N68-28881 Biphenyl and eutectic mixtures as working fluids for organic Rankine cycle power conversion system for 17 p2842 N68-29051 Turbines and heat recovery system for thermal energy in Hanford power reactor
[CONF-680204-2] 17 p2916 N68-29074 17 p2916 N68-29074 Conceptual design of 10 MWe nuclear Rankine system nuclear electric space power [UCRL-50382] 18 p3007 N68-30760 Summary of mercury hoiler development on SNAP 2/ Mercury Rankine Power Conversion Program [TRW-690-32] 20 p3530 N68-32780 Utilization of nonuniform axial heat flux distribution and four heat transfer regions in design procedure for advanced rankine cycle space power system potassium [NASA-TM-X-61162] 20 p3403 N68-33270 Analytical data for electric power system com-onents in advanced high temperature potassium Rankine nuclear space power systems [CONF-680802-1] 21 p3726 N68-34481 Helical, forced flow boiling mercury phase distribu-tion research applicable in determining parameters and nechanisms influencing performance of Runkine cycle votems. 21 p3628 N68-34592 Development and testing of alternator assembly, imp motor, boiler, condenser, and electrical control pump motor, boiler, condenser, and electrical control for SNAP 8 space power system [NASA-CR-72103] 22 p3910 N68-35068 Analytical conceptual designs on electrical power system components in advanced high temperature, potassium, Rankine nuclear space power systems for

Alloying behavior and magnetic properties of rare arth transition metal compounds AD-666993] 13 p2081 N68-23363 BANKING Selection and ranking procedures [AD-659073] 01 p0086 N68-10992 (AD-666993) Anion exchange affinity and chromatographic separation of rare earth complexes with trans 1,2 diaminocyclobexane n,n tetrasceric acid [IBJ-660/VHIC] 13 p2015 N68-23682 Selection, and ranking procedures for restricted families of probability distributions [AD-664474] 09 p1359 N68-18538 09 p1359 N68-18538 Generalized goal in fixed sample ranking and selec-Far infrared spectrometer for direct observation of transistions between Stark spiit ground J-manifolds of rare earth ions in ethylsulphate crystals

13 p2016 N68-23730 10 p1545 N68-19659 Algorithm for optimization of choice in preference listing or ranking problem with incomplete data 17 p2858 N68-28820 High temperature X ray diffraction studies of stabili-ty regions of intermediate phases of praseodymium oxide-oxygen, serbium oxide-oxygen, and cerium-terbi-um oxide-oxygen systems RAPCON [CONTROL]
U RADAR APPROACH CONTROL 13 p2023 N68-24271 NT NEODYMIUM ALLOYS Composition and thermal stability of rare earth car-Fundamental investigation of alloying behavior of eodymlum, praseodymlum, gadolinium, yttrium, and amarium and related metals bonates of yttrium group [NASA-TT-F-11710] 14 p2214 N68-24732 Determination of rare earths and fluorides in rare 11 p1714 N68-21130 Direct electrolysis of rare earth oxides to metals and alloys in fluoride melts [BM-RI-7146] 14 p2210 N68-24547 [UCRL-50383] 15 p2404 N68-25791 ion exchange separation and flame emission spec-ometric determination of trace impurities in rare trometric determ earth compounds [IS-T-223] Rare earth metals and alloys properties at high pres-17 p2842 N68-29121 20 p3566 N68-32827 Reflectance technique using carbon arc image fur-ace to find spectral emittance of rare earth sesquiox-Magnetic properties and structures of rare earth metal or yttrium cobalt intermetallic compounds 20 p3568 N68-32853 18 p.3017 N68-29614
Energy distribution measurement of neutrons acattered by trivalent rare earth ions in octahedral crystal field [SM-104/5]

19 p.3331 M69 3166 18 p3017 N68-29614 Phase relations in samarium-gadolinium alloy system 20 p3500 N68-32871 Effect of a-f exchange interaction in dilute alloys of Dielectric properties of thin praseodymium, cerium, and neodymium fluoride films
[FTD-HT-23-507-67] 19 p3355 N68-31654 20 p3569 N68-32872 Direct electrolysis of rare earth oxides to metals and High temperature thermodynamic properties of rare earth fluorides 20 p3427 N68-32894 20 p3607 N68-32242 Toxicity and safety hazards to personnel from in-sled aerosols and dusts of rare metals, metal alloys, Rare earth element and compound research conand metal compo ference [CONF-670502] 23 p4000 N68-36888 20 p3423 N68-32824 RARE EARTH COMPOUNDS
NT CERIUM COMPOUNDS
NT EUROPIUM COMPOUNDS
NT NEODYMIUM COMPOUNDS
NT SAMARIUM COMPOUNDS
NT SCANDIUM COMPOUNDS Applications review for rare earth cor arth compounds 20 p3423 N68-32825 Magnetic behavior of rare earth compounds with singlet crystal field ground state 20 p3567 N68-32830 Nuclear magnetic resonance measurements in sodi-um chloride type rare earth group 5A intermetallic THULIUM COMPOUNDS Phase diagrams and lattice parameters of cubic and seudo cubic phases of Pu-O compared with those of e-O, Pr-O and Tb-O EUR 24542 20 p3567 N68-32832 Electron paramagnetic resonance angular spectra of gadolinium in rare earth double nitrate single crystals 20 p3567 N68-32833 01 p0025 N68-10783 Phase transformations, crystallography, electronic properties, and mechanical properties of rare earth zinc intermetallic compounds
[NVO.356.02] Nonstoichiometry and crystal defects in solid state chemistry of lanthanides 03 p0407 N68-12362 20 p3423 N68-32836 Thuse transitions in rare earth metal oxides, in rare th metal fluorides, and in manganese fluoride, in-ted by shock waves from explosives Point defects in rare earth dihydrides 20 p3423 N68-32837 Phase tras Crystal structures for compounds composed of rare earths and elements of groups 5 and 6 20 p3424 N68-32838 03 p0423 N68-12519 Magnetically ordered low temperature structure of rare earth carbides [ANL-TRANS-517] Occurrence and unit cell constants of ternary com-pounds with cerium copper type structure 20 p3424 N68-32839 03 p0409 N68-12727 Electrical conductivity in ceramic and single crystals of cerium oxide and erbium oxide [AFOSR-67-2649] 04 p0358 N68-13431 Chemical and electron optical studies of sols, gels, and oxide microspheres prepared from rare earth hydroxides Solid state chemistry of rare earth oxides [COO-1109-25] 05 p0627 N68-14727 20 p3424 N68-32841 Electron paramagnetic resonance of rare earth Equilibria, point defect nature, and kinetics in systems of rare earths and di or tetravalent oxides 09 p1411 N68-19216 etruvalent oxides 20 p3424 N68-32845 Hydrolysis products of rare earth silicides 10 p1489 N68-20112 Crystal structures of ytterbium and magnesium yttri-Electrical resistivity measurements of rare earth ox-des, whisker formation, crystal growth, and electron unneling in thin films 20 p3425 N68-32846 10 p1494 N68-20514 20 p3568 N68-32851 Nuclear fission studies on uranium 238, helium-ion induced fission of rhenium, lutetium, and thulium, and thermodynamic properties of platonium [COO-1716-4] II p1649 N68-21029 Preparation and properties of fluorescent rare earth compounds 20 p3425 N68-32852 Rare earth oxides and oxysalt structures as function of oxygen atom coordination Heavy ion bombardment techniques for measuring short lived alpha decay processes in rare earth oxides 11 p1757 Né8-21381 20 p3425 N68-32858 Preparation of thorium dicarbonate, uranyl car-bonate, and rare earth sesquicarbonates from cor-responding anhydrous acetates Preparation and physicochemical properties of rare (UCRL-TRANS-10222) 12 p1839 N68-22832 20 p3426 N68-32861 Precipitation of rare earth oxides from molten salts 20 p3426 N68-32863 Monohydrate structures of rare earth trisacetylacetonates and stability constants of rare earth acetylacetonates calculated from solvent extracof rare earth ty constants of rare

0.25 to 10.0 megawatt range 24 p4198 N68-37438

Jet condenser design and performance for organic Rankine cycle power conversion systems [AGC-3484] 24 p4199 N68-37637

tion data [ORO-2124-12]

12 p1840 N68-22857

rare

363

1,2

682

n of

730

271

car-

732

rare

791

121

fur-

614

568

654

rare

242

824

825

with

830

odi-allic

832

a of

h 833

tate

236

837

-

838

om-

839

841

in

845 ttri-

846

ium

851

arth

942

258

168

864

Magnetic hyperfine field interaction in rare earth metals and compounds 20 p3569 N68-32875 ce of hyperfine field in rare Temperature depen earth-gold compounds 20 p3569 N68-32876 Electrical resistivity, thermoelec agnetic susceptibility of rare earth etric behavior, and 20 p3571 N68-32889 mical production of rare earth metals by fused salt electroly 20 p3427 N68-32895 Spectroscopic analyses of fluorides and oxides of rare earth metals and of phenol, guaiacol, and biphenyl in different phases [FTD-HT-23-882-67] 21 p3651 N68-34429 Monthly review of sele cted foreign scientific and (AD-672814) 22 p3950 N68-35364 Specific heats of rare earth gallium garnets at low 24 p4329 N68-37529 RARE EARTH ELEMENTS CERIUM ISOTOPES CERIUM 144 DYSPROSIUM DYSPROSIUM ISOTOPES ERRIUM NAME OF ERBIUM ISOTOPES EUROPIUM GADOLINIUM HOLMIUM LANTHANUM NTNTNT LANTHANUM ISOTOPES LUTETIUM LUTETIUM ISOTOPES PRASEODYMIUM PRASEODYMIUM ISOTOPES PROMETHIUM PROMETHIUM ISOTOPES SAMARIUM SCANDIUM SCANDIUM ISOTOPES TERBIUM TERBIUM ISOTOPES THULIUM THULIUM ISOTOPES NT YTTERBIUM One particle states of deformed nuclei in final potential with diffused edge for rare earth levels [JINR-P4-3451] 01 p0110 N68-10552 Plant for extraction by solvent of strontium-90 and rare earths from cesium 137 free flasion product solu-(EUR-3612.F) 01 p0026 N68-10863 thin film capacitors 02 p0257 N68-11024 INASA-CR-903011 Chemical separation of iodine from molten fluoride sels and rare earths from molten salt reactor fuels DRNL-P-2601] 03 p0314 N68-12496 fuels and rare car (ORNL-P-2601) Preparation and crystal structure of selected rare intermetallic compounds with Group 5 and roup 6 elements 09 p1293 N68-18519 Lower oxide phases of rare earth o 09 p1333 N68-18878 Spin quadrupole forces and collective states in formed nuclei effects on transition probability ition probability 10 p1562 N68-19586 [JINR-E4-3134] to ground state levels of beta bunds of rare earth elements [AD-664799] bilities for de excitation and gamma rotational 11 p1751 N68-20811 N-forbidden beta tra in odd mass rare earth liffused potential nuclei for approx [JINR-P4-3650] 12 p1930 N68-22588 Rare earth infrared life and exciton migration rates in trichloride crystals [AROD-54009-P] 13 p2130 N68-23046 mide and actinide ele-Chemical properties of I [BMWF-FBK-67-87] 13 a2009 N68-23117 lyses on transition and Kinetics and structural a rare earth metal [NYO-906-80] ta-diketones 13 p2010 N68-23285 Relative efficiency index for mining rare and noble 13 p2175 N68-23816 Direct electrolysis of rare earth oxides to metals and alloys in fluoride melts.
[BNI-RI-7146] 14 p2210 N68-24547

Creasing tought Anion exchange for tr nthanides in hydrochlor [ANL-7415] Rare earth elements as trace elements in chronditic electrites and terrestrial sedimentary rocks
16 p2656 N68-27812 Heat of solution of p um and rare earth ions Reaction kinetics of rare earth ion and anion forma-tion to study ion complexes stability [FTD-HT-67-220] Optical and electrical properties of thin films of rare Rare earth element and compound research con-CONF-6705021 ments and ionic com-M series X ray emit Rare earth chemistry of la Energy transfer in crystals doubly doped with rare Magnon dispersion relation in relatic neutron scattering rare earth metals from Coordination chemistry of rare earth metal ions 20 p3425 N68-32857 Band structure, Fermi surface, and physical proper-ties of rare earth elements nihilation in single crystals of yttrium n, terbium, dv Magnetic hyperfine field interaction in rare earth metals and compounds 20 p3569 N68-32875 Magnetostriction in dilute rare earth iron garnets 20 p3569 N68-32877 Low temperature heat capacities of rare earth metals 20 p3570 N68-32882 Electrical conduction and dielectric breakdown in in evaporated layers of lanthanum, cesium, raseodymium, and neodymium 20 p3571 N68-32884 mary data for high field mag nts in single crystal rare earth rtic moment meaarth metals 20 p3571 N68-32886 Fluoride and chloride chem for preparation of rare earth me al industrial process 20 p3427 N68-32890 rcial ion exchange sep aration of rare earths 20 p3427 N68-32892 Rare earth elements abs rites determined by radio ce in meteoritic chor ical neutron activatio [NASA-CR-84733] 21 p3685 N68-34058 troscopic analysis of flu ides and oxides of rare 21 p3652 N68-34430 Inefficiency of triplet energy transfer from ketones to trivalent rare earth ions [AD-673075] 22 p3826 N68-35422 Rare earth spectra analyses for first forbidden beta 23 p4111 N68-36037 Neutron activation analysis of rure earth abundances managemen nodules (DSR-78841) 23 p4056 N68-36557 in lanthanide and actinide [COO-1533-7] 23 p4012 N68-36848 Effect of nucleus defi-density in rare earth reg [JINR-P4-3925] on neutron resonance

ons to alloy steel for in-15 p2480 N68-25750 reducing preparati radioisotopes of rare [JINR-P12-3887] n of rare earths and fluorides in rare 23 p4128 N68-37047 15 p2404 N68-25791 d magnetic ordering calculated for rare [IS-T-226] ransplutonium elements and ric acid organic solvent mix-23 p4139 N68-37325 AROON AROON ISOTOPES HELIUM NT NT HELIUM ATOMS HELIUM FILM HELIUM ISOTOPES NT and entropy of plutoni-NI NI NI 17 p2835 N68-28342 HELIUM ELIUM 3 LIQUID HELIUM NEON ISOTOPES RADON XENON SOTOPES XENON 133 ity 17 p2835 N68-28344 rth iom in silica glass 18 p3029 N68-30538 19 p3349 N68-30973 NASA-CR-89955] 20 p3423 N68-32824 01 p0098 N68-10177 Separation and isotopes by thermal [MLM-1409] of stable go 01 p0026 N68-10902 20 p3566 N68-32826 es of rare earths 20 p3567 N68-32835 heric and rare games 20 p3568 N68-32847 01 ±0027 N68-10983 (RT/EL/67/8) 20 p3568 N68-32849 01 p0116 N68-10997 lation methods a namic properties of 20 p3568 N68-32855 (FTD-HT-46-251, V. 1, PT. 3) 02 p0280 N68-11073 of rare gas contents of [NASA-CR-90216] 02 p0206 N6B-11377 20 p3569 N68-32873 otoms and molecules 02 p0255 N68-11666 20 p3569 N68-32874 tribution measurements tween parallel plates in for rarel transition regis 03 p0427 N68-12488 Low voltage arc in rare gas [REPT.-12, PT. 5] 03 p0402 N68-12563 Mathematical models and experimental inves discharge in rare g 03 p0402 N68-12582 Wave spectra of garesonance of inert gase and DNA [AFOSR-67-2668] olecules, electron spin distion effects on RNA 04 p0464 N68-12876 Three dimensional gas atoms scattered fr [NASA-CR-92704] al experiments on rare crystals in aliver 07 p0984 N68-16482 of adsorption of inert Quantum mechanic gas atoms on crystal su [NASA-TT-F-11493] 08 p1210 N68-17739 Inert gas fusion to of oxygen in uranium [ANL-7264] or macrodetermination imposites 10 p1479 N68-19540 10 p1485 N68-19958 on of hydrogen as 10 p1489 N68-20114 ding inert gas 10 p1467 N68-20164 n by removal of n INASA-CR-943881 12 p1934 N68-22686 of polymers in oxys 13 p2172 N66-24012 23 p4127 N68-37002 13 p2128 N68-24032

.

eta acintillation monitor for continu of radioactive noble gases are rement of ar facilities 14 p2257 N68-25049 [BNL-12154] interatiomic interaction potentials determined by use of elastic scattering of rapid neutral particles in rare TRANS-1138] 14 p2315 N68-25182 Attachment and cap radioactive inert gases or [BMWF-FBK-67-79] re of decay products from 15 p2524 N68-26678 Partition of electron-ion recombination energy in decaying rare gas plasma by free electrons and radia-NASA-CR-898191 16 p2735 N68-27401 Solutions of Percue-Yevick equation for Lennard-nes potential, and statistical thermodynamics of rare nes potential, a a and fluid syste 18 p3187 N68-30062 Summary information on progress in separation and rification of stable gaseous isotopes and thermal diffusion research [MLM-1430] 19 p3222 N68-31022 ed in stony meteorites Contents and is and Xe determined [MPIH-1967/5/11] Permeation and diffusion of nitrogen, oxygen and rare gases through stainless steel [LA-3909-MS] 20 p3503 N68-33236 Mass spectrometer for high temperature inert gas nalysis of cover gases in liquid metal cooled nuclear [LA-DC-8999] 20 p3480 N68-33368 Atomic interaction model potentials for calculating lattice dynamics of inert gas solids 21 p3753 N68-33883 Vacuum ultraviolet photo electric emission of cryogenic thin film rare gases 22 p3946 N68-34816 Comparison of nonrelativistic Hartree-Fock calcula-tions for fluorine, neon, chlorine, argon and bromine atoms and bromine iom atoms and bromine [ORNL-TM-2251] 22 p3935 N68-35830 Design and operation of tungsten inert gas arc spot (SC-DR-67-725) 23 p4070 N68-37179 Molecular spectra produced by collision with setastable noble gas atoms [RE-346-J] 24 p4221 N68-38455 RAREFACTION Eulerian, reactive, numerical, hydrodynamic code for calculating failure of nitromethane detonations resulting from side rarefaction cooling of explosives in-side reaction zunes 09 p1449 N68-18871 RAREFACTION WAVES U ELASTIC WAVES HAREFTED GAS DYNAMICS Theoretical and experimental data on rarefled gas flow through annuli for continuum, alip, and free molecular regimes [NASA-CR-90214] 02 p0199 N68-11372 Effect of incomplete energy accommodation of free molecule recovery temperature [TR-0158/3240-20/-1] 03 p0335 N68-12098 Theoretical research on aerodynamic gas flows around hypervelocity bodies - supersonic and hypervelocity bodies - supersonic flow dynamics of blust bodies, bodies of revolution, sharp edges, and flat plates
[DLR-MIT-47-13] 05 p0601 N68-13908 Vibrational relaxation field around blunt bodies tion effects on hypersonic flow 05 p0601 N68-13911 Polynomial distribution functions for analyses of rarefied gas flow past flat plate [FTD-HT-23-923-67] 06 p0765 N68-15949

Steady, hypersonic, plane flow of rarefied, conatomic gas with infinite free paths around flat ates normal to streams with diffuse reflection of (AVA-FB-6707) 07 p0933 N68-16266 en parallel plates and in Rarefied gas dynamics betw 09 p1330 N68-19257 Direct measurement of differences between free and near free molecular flow in low density, high tempera-(AFOSR-68-0463) 11 p1686 N68-21323 lysis with pulsed vacuum net-Molecular flow gas analy works of interconnected vol [NASA-CR-94530] 13 p2051 N68-23287

Electron beam fluorescence method and applica-ions in systems and gas dynamics research 13 p2054 N68-23943 Fluid flow analysis on visco with nonequilibrium chemical region of reentry vehicle [TR-0158/3240-10/-8] is merged shock layer reactions in stagnation NT COSMIC PLASMAS 15 p2454 N68-26412 13 p.2434 N68-26412 Analysis of rarefied plasma flow velocity around sta-onary charged body 16 p2736 N68-27576 fusion and conductivity in partially ionized gas re with different component temperatures [AFAPL-TR-67-79] 16 p2736 N68-27577 Experimental and thurrents in plasma flow Structure of BBGKY hierarchy for Boltzmann gas and particle distribut [NASA-CR-75659] 16 p2646 N68-27611 [SC-DC-67-2052] Kinetic moment equations for evaluation of quadra-ires applied to aerodynamics of rarefied and tures applied to monatomic gases [FTD-MT-66-165] 18 p3062 N68-30079 Supersonic rarefied gas flow at stagnation point of [NASA-TT-F-11797] 18 p2998 N68-30367 Wind tunnel study of co hypersonic diffuser in rarefle [REPT.-68-4] m mech 20 p3459 N68-32436 Modified mo ach applied to problems in rurefied gases [PIBAL-68-16] [NASA-CR-95956] 21 p3683 N68-34590 Dynamic response of ga tric field application Flow of rarefied pla Viasov equation at spheres formulated by 22 p3940 N68-35037 RASERS U MASERS Rarefied gas flow analysis s sint of blunt hypersonic body is near forward stagnation 22 p3862 N68-35612 Mathematical model for calculating shape of hyper-sonic minimum drag body with elliptical cross section [NASA-TT-F-11833] 23 p3984 N68-36322 Linearized Rayleigh problem in rarefled gas flow for-ulated using BGK kinetic equation 24 p4244 N68-37598 RAREFIED GASES

NT COSMIC GASES

NT INTERPLANETARY GAS

NT INTERSTELLAR GAS Thermal conductivity through rarefied gas between ocentric cylinders [AS-67-15] 01 p0149 N68-10274 Rarefied gas density a tron beam glow ts based on elec-01 p0100 N68-10710 Relationships between rarefic integral equations and theories or random Markov processes ed gas theory, based on of purely discontinuous 04 p0495 N68-13332 fied gas from nozzles 06 p0828 N68-15711 [FTD-MT-67-22] GROUND SPEED HEART RATE tions for analyses of mial distrib rarefied gas flow past flat plate IFTD-HT-23-923-671 06 p0765 N68-15949 tion in one or more regions of 06 p0830 N68-16033 Law of drag variations and negative moments of heres rotating in high velocity, rarefled gas flows 06 p0831 N68-16046 Experimental investigation sozzle flow with vibrational [DLR-FB-67-69] n of low density hypersonic 07 p0989 N68-17217 Fabry-Perot interferometer for lo of low-density gas flows 08 p1178 N68-17619 Linear energy transfer henomena of rarefied gases model for turbulent 08 p1219 N68-17707 d heat transfer between Rarefied gas cor parallel plates analyzed by ([NASA-TN-D-4579] sampling procedures 13 p2053 N68-24129 glow discharge for of rarefied gas 13 p2055 N68-24223 High sensitivity me visualization of superso (FTD-MT-24-125-67) tatic low-density air 13 p2071 N68-24244 Electron beam probe ad vibrational temperate [NASA-TN-D-4500] ensation of ion beam d in rarefied gas 14 p2321 N68-24381 Plasma instability and co space charge by electrons for [IAE-1277] Laboratory m of rotational tempera-ith electron beam probe 16 p2661 N68-27416 tures in static low density air with [NASA-TM-X-59966]

Solving problems of hypersonic rarefled gas flow round obstacle in almost free molecular flow 19 p3195 N68-31722 Nonvincous gas jets in rarefied at [REPT.-67-11] 20 p3461 N68-32628 m of shock wave in rarefled tur-08 p1218 N68-17705 Analysis of four bar mirror cusp magnetic field by 08 p1219 N68-17868 theoretical analyses of electrical w behind incident shock in shock 12 p1951 N68-22920 Stability and propagation of shock waves in rarefled plasma within strong magnetic field [FTD-MT-24-182-67] 13 p2130 N68-24289 13 p2130 N68-24289 Tenuous crossed field plasma contained in magnetic findrical chamber 14 p2324 N68-24994 Poisson equation studies of asymptotics of wake of body moving in rarefied plasma [FTD-MT-67-44] 15 p2530 N68-26309 Structure of plane magnetohydrodynamic shock ave in rarefied fully ionized plasma 19 p3340 N68-31436 is plasma to sudden elec-23 p4141 N68-36629 RATE METERS
U MEASURING INSTRUMENTS MATEMENT OF THE STRUMENTS IN THE STRUMENT STRUMENTS ST HEAT FLUX HIGH ACCELERATION HIGH GRAVITY ENVIRONMENTS HIGH SPEED HYPERSONIC SPEED IMPACT ACCELERATION ION PRODUCTION RATES BERADIANCE
LANDING SPEED
LIGHT SPEED
LOGHT SPEED
LOGHT RATE
LOW SPEED
LUMINOUS INTENSITY
LUNAR GRAVITATION
LUNAR GRAVITATION
LUNAR GRAVITATIONAL EFFECTS
MAGNETIC FLUX
MASS FLOW RATE
NEUTRON FLUX DENSITY
ORBITAL VELOCITY
PARTICLE ACCELERATION
PARTICLE FLUX DENSITY
PHASS VELOCITY
PHASS VELOCITY
PHOTON DENSITY
PHOTON DENSITY PHASE VELOCITY
PHOTON DENSITY
PHYSIOLOGICAL ACCELERATION
PLASMA ACCELERATION
PLASMA ACCELERATION
PROPAGATION VELOCITY
PROTON FLUX DENSITY
PULSE RATE
RADIANCE RADIANCE
RADIANT FLUX DENSITY
RECOMBINATION COEFFICIENT
REDUCED GRAVITY
RELATIVISTIC VELOCITY
RESPIRATORY RATE Plasma generated by beam of high energy photons in wefied argon ROTOR SPEED SOLAR CONSTANT 19 p3339 N68-31140

722

628

705

by

868

fied

289

994

of

ock

136

529

NT SOLAR FLUX DENSITY NT SOLAR GRAVITATION NT SOUND INTENSITY NT SPIN REDUCTION NT STRAIN RATE NT SUBSONIC SPEED NT UPS SPEED NT TRANSONIC SPEED NT TRANSONIC SPEED NT TRANSONIC SPEED NT TRANSONIC SPEED NT WIND VELOCITY NT ZERO SOUND Rate coefficients for ionization-deionization reac-[RM-388] 02 p0285 N68-11618 ose rates estimated for exter-ts of Black Arrow type satel-Corpuscular radiati nal and internal comp (RAE-TR-67206) 10 p1588 N68-20447 Isotopic exchange reaction rates at elevated tem-eratures in shock tubes NYO-3211-61 11 p1651 N68-21081 Single particle tra-um and heavy nuclei [NP-17386] measurements in medi-15 p2524 N68-26755 Linear polarization of electrochemical measurement of low material corrosion rates 16 p2611 N68-27810 Vaporization rate measurements for vomming as on hydrocarbon fuels at low pressures 16 p2748 N68-27857 Survey of photon counting iques for light mea 20 p3538 N68-32990 Tap density values for irregular boron particles of specified sizes and size blends [MLM-1458] 20 p3513 N68-33325 RATINGS nts for calculating nozzle and rocket ex-Rate cor haust flow fields [NASA-CR-90528] 02 p0292 N68-11782 NT SPACE RATIONS Built-in mechanisms for softening and rehydrating TR-68-13-FL] 08 p1133 N68-17862 Bite size food in fighter aircraft [SAM-TR-67-114] 13 p1999 N68-23343 RATIOS ASPECT RATIO FROUDE NUMBER FUEL-AIR RATIO GRASHOF NUMBER FUEL-AIR RATIO
GRASHOF NUMBER
HIGH ASPECT RATIO
INDEXES [RATIOS]
LEWIS NUMBERS
LIFT DRAG RATIO
LOW ASPECT RATIO
MACH NUMBER
MASS RATTOS
OPTICAL REFLECTION
PAYLOAD MASS RATTO
PECLET NUMBER
PERVEANCE
POISSON RATIO
PRANDTI NUMBER
PROPELLANT MASS RATIO
RAYLEIGH NUMBER
REYNOLDS NUMBER
REYNOLDS NUMBER
REYNOLDS NUMBER
RICHARDSON NUMBER
SCALE [RATIO] NT NT NT NT RICHARDSON NUMBER SCALE (RATIO) SCHMIDT NUMBER SIGNAL TO NOISE RATIOS SIMILARITY NUMBERS STANTON NUMBER STRESS RATIO STROUGHAL NUMBER THICKNESS RATIO THRUST-WEIGHT RATIO VOID RATIO apling distributions of ratio estimators for small 14 p2281 N68-24996 RATS

Intestinal absorption of radio to hypoxia and food deprivation [NASA-CR-90307]

03 p0305 N68-12219

04 p0450 N68-12925

Experimental procedures for studying topological aracteristics in pattern perception physiology of rat

18 p3008 N68-29948

INASA-CR-958111

effects on growth rate of rats

nd electrical manipulation of ning ability in rats. 04 p0451 N68-12953

Effects of ph

ISAM-TR-67-821

Effects of chemica brain metabolism on i [ARL-TR-67-18]

APR-11

iodide in rats exposed 02 p0165 N68-11141 ride on animals sub-

Nutritional value of algae and soybean prutein diet e of erythrocytes in rate for rate adapted to hypoxia 18 p3011 N68-30555 04 p0453 N68-13187 Reactivity, and tolerance of rats in hypothermal state low atmospheric pressure body weights and ges-on sormal, low fat, and osure to cobalt 60 19 p3208 N68-31350 04 p0454 N68-13189 high diets with and w Hemolytic activity of lipids in rats exposed to oride 30 effect on 04 p0454 N68-13194 20 p3407 N68-33128 illed stimulation of brain to ercranial self stimulation in Self and electrode controlled at determine biophysics of intercrani Dietary effects on tot hanges in liver, adip tty acid content in rats, and tiome, and carbohydrate (ARL-TR-67-25) 05 p0610 N68-14359 metabolism [NASA-CR-96422] 20 p3409 N68-33506 Effects of age at time of exposure on persistent and te effects of fast neutron irradiation of male Spraguecal changes in respira-of rats 21 p3632 N68-33912 inges in respira-Hyperoxia induced ory and cardiovascul Dawley rats (USNRDL-TR-67-1211 06 p0774 N68-15710 ffect of high pres re on red blood Cardiac output and regi rats exposed to acute hypo [NASA-TM-X-60839] blood flow in conscious e oxygen expo cells in aplenectomized [NASA-TM-X-61195] 21 p3638 N68-34666 07 p0943 N68-16274 ry perception of X rays Effects of unicellular algae steric microflora in rats diet on composition of by rats [NYO-3698-1] 22 m3812 N68-35658 08 p1131 N68-17747 Biological effects of chronic gamma irradiation in 08 p1131 N68-17751 in rats after four weeks Inhalation toxicity of b remethane pyroly sis products in rats 23 p3999 N68-36674 09 p1280 N68-18748 Cortex activity inhibition in rats exposed to transverse acceleration nl soundings in United Frocket data 07 p1016 N68-16139 High altitud 09 p1281 N68-18911 Rates to obtain rawin WETM-DATAC-11 Hypoxia effects on vestibation of the second dar dynamics in rats at low onde data reduction racy of tracking and 09 p1281 N68-18913 [NASA-CR-61192] Proton irradiation effects on phosphorus absorption into rat tissue proteins 07 p1019 N68-16812 d by sound ranging 09 p1282 N68-18914 IECOM-51651 15 p2460 N68-26198 Biological value of unicell ar algae proteins in rat wind flow using Investigating upper 09 p1282 N68-18917 22 p3870 N68-35531 effects on oxygen ing wind velocity data se data 23 p4094 N68-36429 hamber 10 p1462 N68-19582 ortical steroids, body organ weights, and he-rats exposed to pure oxygen environments tures for application to low pressure, normatology of rats expose at low pressures for a mozic environments [SAM-TR-67-78] BAY TRACING Ray tracing optics for ana ristics of transparent bead s lysis of reflective charac-10 p1468 N68-20208 05 p0699 N68-14297 s of liver samples taken from rats at level stained for glycogen to deter-Histologic sections of liver altitude and ground level sta mine effects of monomethyll (SAM-TR-67-79) y tracing methods for field intensities from estimating atmosph aerological observat INASA-CR-611871 10 p1468 N68-20250 06 p0881 N68-15870 Effect of whole body X irradiation on resistance of male rats exposed to low environmental temperature [USNRDL-TR-68-6] 10 p1469 N68-20451 Ray optical analysis ents from open ended 07 p0965 N68-16932 Effects of decaborane and several potential antidotes lary layer exp [SAM-TR-67-103] 11 p1634 N68-20900 07 p1036 N68-16935 Survival of rats exposed to 10 psia oxygen to further thosure at one atmosphere oxygen NADC-MR-6714] 11 p1634 N68-20919 [NASA-CR-93209] 08 pi167 N68-17595 exposure at one atm [NADC-MR-6714] Effects of ruby laser irra [REPT.-759] n on rat performance 11 p1636 N68-21392 08 p1173 N68-17981 studies using rate alin model ionosphere 10 p1520 N68-19734 ready trained to press har for fo INASA-CR-945521 od supply 13 p 998 N68-23180 Urinary pyrimidines in ts after whole body X ray ir-Ray tracing of Z-[AFCRL-68-00991 n tilted layer ionosphere 13 p2065 N68-24227 [USNRDL-TR-68-15] 13 p2002 N68-24218 nt angle of arrival of conditioning, and use condition ruts 13 p2002 N68-24293 Role of attention in Pa 17 p2853 N68-29112 of auditory and visual st [NASA-CR-94558] just for optical Rat and ground squirrel electrophysiological response to light stimuli varying in brightness and hue using electroretinographic observations 19 p3249 N68-31765 17 p2828 N68-28398 aberrations in single (NASA-TN-D-4692) mirror systems 23 p4107 N68-36460 oxygen communition in changes in lungs 17 p2818 N68-28505 Pathological effects of high rats, and pathomorphological ci Mathematical mode mulating ray tracing d FORTRAN 4 program for signal path in opherically Response differentiation by rats in slow rotating [NASA-TM-X-63365] 23 p4022 N68-36870 17 p2821 N68-29133 waves, magnetoionic e, and ray tracking 24 p4225 N68-37826 Properties of propageory, radio waves in ion Behavioral and physiological experiment studying ef-fect of predictable and random electric shock signals RAYLEIGH DISTRIBUTION 18 p3007 N68-29665 Linearized Rayleigh permedition treated by

19 p3385 N68-31471

SU

44.5

61

En LA

(E

tie [A

for

wit (B)

Pr tions and c [AR

H

(NR

He studii orbei [NRI

[AFC

RAYLEIGH EQUATIONS RAYLEIGH EQUATIONS Generalized Rayleigh thermal convection theory ap-plied to atmosphere and numerical solutions for dif-ferential equations governing convective motions in stratified layer stratified layer [ARL-1515-2] 07 p1016 N68-16326 Rayleighs thermal convection theory applicable to mosphere generalized to include effects of radiation and forced conduction at top and bottom boundaries of 07 p1016 N68-16327 Natural frequencies determined for eigenvalues and eigenvectors by Rayleigh equations and orthogonality principles 08 p1247 N68-17503 Selected roots of symmetric Rayleigh-Lamb equa-[AFIT-TR-67-2] 08 p1251 N68-17679 Compressible, viscous, gray gas flow near flat plate ous, heat conducting, radiating 15 p2452 N68-26188 BAYLEIGH NUMBER Rayleigh number, temperature and velocity fields, and hexagonal free convective flow and amplitude of fluid heated from helow and cooled above 17 p2985 N68-28545 Benard convection roll cells dependence on Rayleigh number in atmospl [RM-5504-PR] 23 p4096 N68-36836 Linearized Rayleigh problem mulated using BGK kinetic equa m in rarefied gas flow for-24 p4244 N68-37598 RAYLEIGH-RITZ METHOD Rayleigh-Ritz method for analyzing variable thickness cantilever plate [NAL-TR-138] 02 p0277 N68-11582 Rayleigh-Ritz method requencies and vibration old wing models or calculating natural odes of low aspect ratio solid wing models [NLR-TN-F.260] 07 p1090 N68-16625 Analysis of conical shell buckling using Galerkins [ARL/SM-311] 17 p2981 N68-29029 Rayleigh-Ritz method used to tions of isotropic cylindrical shell d to study natural vibra-

18 p3178 N68-30159 Prediction of vibration frequencies and modes for free-free truncated conical shells, using Rayleigh-Ritz [NASA-TN-D-4772] 20 p3603 N68-33057 RAYLEIGH SCATTERING Calculations of reflected and tru for earth atmosphere by Mo [NASA-CR-91228] 03 p0339 N68-12064 Temperature profiles of Lewis-Rayleigh afterglow emitted by active nitrogen [TR-1001/2240-20/-6, V. 1] 03 p0312 N68-12228

Structure of dislocation core an orientation in Brillouin zones of ion [AD-661247] 0: on core and Rayleigh scattering ionic crystals 03 p0383 N68-12301 Rayleigh scattering of ruby laser light in neutral gases [REPT.-07599-15-T] 08 pl183 N68-17963

Approximation models for radiative transfer in isotropic and Rayleigh scattering fluxes [RM-5537-PR] 10 p1569 N68-19979 Raman effect and Rayleigh : for photon absorption by mass is gh scattering spectroscopy as in electromagnetic fields

18 p3083 N68-30085 [FTD-HT-66-496] Liquid dynamics studied using Mossbauer effect and Rayleigh scattering of recoilless gamma rays [AFOSR-68-1041] 18 p3064 N68-30642

Signal analysis and weighing functions applied to am-itude distribution in Rayleigh scattering channels 21 p3660 N68-34333 Colorimetry of radiation from top of Rayleigh at-

mosphere [AFCRL-68-0090] 21 p3686 N68-34469 seasurements from random ns using gas lasers 23 p4108 N68-36744 Rayleigh scattering mean

RAYLEIGH WAVES

Light scattering technique for production and mea-trement of ultrasonic surface waves and dispersion of Rayleigh waves [TR-3] 13 p2109 N68-23855 Dispersion of flexural waves in circular bi-material cylinders [T&AM-298] 14 p2353 N68-24364 Raleigh-Lumb wave propagation in anisotropic [GSF/MC/68-6] 22 p3973 N68-35485 **BAZOR BLADES**

Measurement of skin friction at low subsonic speeds by razor blade technique [ARC-R&M-3525] 14 p2181 N68-24792

U B- 57 AIRCRAFT

RELATIVE BIOLOGICAL EFFECTIVENESS [RBE]

RC CIRCUITS Five element RC network for maximum utilization of frequency modulated subcarrier bandwidth [NRL-6449] 02 p0180 N68-11079 Analysis and synthesis of networks using resonators compatible with integrated circuits [AFCRL-67-0472] 03 p0331 N68-12126

Procedure for synthesizing active RC networks con-taining distributed and lumped elements [NASA-TM-X-60856] 07 p0977 N68-16790 milinear time variable capacitor for bounded input-ded output stability of passive lumped RC net-[R-369] 08 p1156 N68-17772

State space synthesis of passive one port networks 10 p | 508 N68-19854 Analyses and design of active and distributive alter-sting current networks (TR-400-180) 15 p2441 N68-26469 Network function synthesis using nonideal grounded amplifiers and RC one-ports [TR-400-174] 18 p3049 N68-29689

Analysis and synthesis of multi-layer RC distributed CU-172-68-ONR-266-PHYS.] 18 p3053 N68-30513

Development of RC single two-port synthesis technique to realize open-circuit voltage transfer func-tion of lumped, linear, finite, passive, and bilateral net-19 p3254 N68-30915

Periodic sampling logarithmic amplifier using voltage decay in RC network [SR-313] 19 p3252 N68-31444 Active RC circuit network synthesis techniques for reactance reduction [AFAL-TR-67-349] 19 p3257 N68-31810 stributed RC networks 21 p3671 N68-33739 Annotated bibliography on distrit [NASA-CR-96548] 21

Use of phantom zeros to pole Q in integrable interme [NASA-TM-X-61235] hieve gain reduction for the frequency amplifiers 21 p3670 N68-34693 Modeling of general three terminal distributed RC [NASA-CR-97201] 23 p4037 N68-36654

Synthesis of n-port networks from RC lines, lumped sistors, and capacitors 24 p4238 N68-37479

Circuits for design of RC electric filters using feed-(ESD-TR-68-249) 24 p4240 N68-37991

ROX Colorimetric, titrimetric, gravimetric, and X ray dif-fraction techniques for chemical analyses of cyclotrimethylene trinitramine [TIL/T-3728] 02 p0178 N68-11588 REACTANCE

Variations in mor and dipole antenna ric sounding rocket spin period and plasma flow [NASA-TM-X-63285] tion 18 p3035 N68-30003 Synthesis of lumped n-port electrical networks with eactances removed using S matrix theory PIBMRI-1370-67] 18 p3047 N68-30371

Active RC circuit network synthesis techniques for reactance reduction [AFAL-TR-67-349] 19 p3257 N68-31810

REACTION CONTROL Pressure regulated moderator gas tube for nuclear

power reactor control [NASA-TT-F-11373] 08 p1207 N68-18174 Comparison of gamma sensitive and neutron sensi-tive ionization chamber measurements for reactor diag-[ORNL-TM-2144] 16 p2706 N68-28050

Reactor operator training handbook on radiation safety and control [ORNL-TM-2034, V. 2] 23 p4102 N68-36806

Reactor control and reactivity experiments with Los Alamos Turret Reactor [LA-3965-MS] 24 p4294 N68-37579 REACTION JET ATTITUDE CONTROL
U ATTITUDE CONTROL

U JET THRUST U JET FLOW U JET THRUST REACTION KINETICS

Rate of synthesis reaction in me [JINR-P4-3384] 01 p0103 N68-10224 Molecular beam and shock wave techniques for determining kinetics of chemical reactions [AROD-4676-7-C] 01 p0022 N68-10540 01 p0022 N68-10540

Chemical kinetics of uranium, neptunium and amer-ium oxidation-reduction reactions in perchlorate 01 p0022 N68-10554 [ORNL-TR-1644] Analytical study of catalyzed hydrazine decomposi-on reaction chambers for predicting system steady ate and transient behavior

01 p0128 N68-10633 [NASA-CR-89791] s and formation of uranyl ions in

01 p0023 N68-10637 Kinetic studies of heterogeneous water reactions in water cooled reactors [STL-372-50] 01 p0093 N68-10688

Chemical potentials and activity coefficients of bi-ary solid solution components by third component ethod [PA-TT-59] 01 p0025 N68-10823

Chemical potentials and activity coefficients of potassium sulfate-copper sulfate-water and ammonium sulfate-copper sulfate-water binary solid salt solutions [PA-TT-61] 01 p0027 N68-11002 Hydrogen-oxygen chemical reaction kinetics in

rocket engine combustion [NASA-TN-D-4250] 02 p0285 N68-11642 Thermal properties and chemical kinetics of solid hase in combustion process of ammonium perchlorate opellants during steady state and transient pressure

[NASA-CR-66487] 02 p0292 N68-11784

Reaction kinetics of trans-gluconization mechanis nitrogen glucosides 02 p0179 N68-11882 acids with liquid

Reactions of Lewis iffuoromethane for anion synti 03 p0310 N68-11909

Kinetic study of fluorination reactions of uranium and pluronium compounds with elementry fluorine using thermogravimetric method [ANL-TRANS-515] 03 p0310 N68-11981

Reaction kinetics of gaseous unimolecular isomeriza-tions of cyclobutane and cyclopropane [AFOSR-67-2449] 03 p0312 N68-12225 Thermal and chemical ablation in hybrid combustion

[ONERA-TP-517] 03 p0427 N68-12476 Spectrophotometric determination of laurylamine reaction constants with cyclohexane for plutonium pu-[CEA-R-3118] 03 p0318 N68-12725

Computer program for kinetic treatment of radiation hemical data [NDL-TM-36] 03 p0318 N68-12790

Reaction kinetics in oxidation and reduction of al-kaline silver electrode [NASA-CR-91448] 04 p0446 N68-12910 Crystal growth kinetics of molten oxides containing yttria or lanthana [NASA-CR-91377] 04 p0525 N68-13106

Standard heat of formation of all (R.163/SR/4) 04 aluminum chlorides 04 p0466 N68-13111 Photographic trace method kinetics of dispersed metallic fu [FTD-HT-66-706] ed applied to combustion 04 p0595 N68-13238

Criteria for near equilibrium monoreactive and mul-tireactive flows [ONERA-NT-115] 04 p0494 N68-13259 Formation of carbon diaxide and carbon from carbon monoxide in presence of iron pellets [RM-RI-7064] 04 p0467 N68-13295

Chemical studies on metal catalysts, molecular seves, transition oxide systems, kinetics of homogeneon of catalysts 04 p0467 N68-13383 ed characterizat Ous reactions, and [NYO-1158-21]

Pressure-speed diagram of air heating process by chemical fuel combustion [DLR-FB-67-61] 04 p0596 N68-13454 Reaction kinetics, and reaction mechanics of

04 p0472 N68-13746 [IS-T-142] Digital computer program for solving reactor kinetic equations, and for reactivity analyses [NAA-SR-12452, V. 1]

224

for

540

554

633

ns in

637

s in

688

bi-

823

of

ns 002

in

642

olid rate sure

784

882

puid

909

981

iza-

225

tion

476

pu

725

tion

790

910

ning

106

111

tion

238

nul-

259

car-

295

ular

383

by

444

of olu-

746

05 p0691 N68-14064 Electron paramagnetic resonmetals in mixed and pure solven alkalis and ethyle nediamine sols (COO-958-12) nance spectra of alkali 05 p0618 N68-14110 Electrochemical kinetics and applications to corro-05 p0620 N68-14147 Polarization effects in reactions induced by high (IAE-1241) 05 p0711 N68-14351 izers along flow in electrosynthesis of ozone [ANL-TRANS-521] 05 p0623 N68-14410 Reaction rates of chemical im um with graphite at high temper (EUR-2762.E) purities present in heli-05 p0623 N68-14445 Kinetics of ozone elect hesis under flow condi-[ANL-TRANS-522] 05 p0624 N68-14479 Joule heating and la for measuring molybdi [AFOSR-67-2800] rature jump equipment erization rates 05 p0671 N68-14796 Chemical reactions esses for production of TR-15] 06 p0786 N68-15006 Reaction kinetics ass teraction with platinum mosphere conditions [NASA-CR-92567] with oxygen atoms in-fer simulated upper at-06 n0832 N68-15098 Reaction kinetics for ma with hydrogen [BM-RI-7080] gnetite reduction to iron 06 p0791 N68-15704 Nucleation rate of solid phase in thermal dissociation reaction of magnesium carbonate [NASA-TT-F-11477] 06 p0793 N68-15857 Decomposition kinetics of carbon 14 labeled amino cids in soils [NASA-TT-F-11485] 06 p0775 N68-15867 Biological macromolecules and kinetics of biopolymer formation with and without templates, and (AD-662276) 06 p0887 N68-16016 Isotopic kinetics studies emphasizing carbon isotope

(COO-1142-771 07 p0955 N68-16345 Chemical and spectral analysis, mechanical and ther-mophysical properties, reaction kinetics, and molecu-lar studies for materials research 07 p1066 N68-16531

Shock wave reflections in mixtures of argon and trous oxide measured for studies of kinetics of ecomposition reaction WRE-TN-CPD-1141 08 p1255 N68-17321 nitrogen in argon with Reaction kinetics of tita n kinetics of transcring systems a to design of gettering systems 08 p1138 N68-17325

(ANL-7167) Nitrogen dioxide luminescence produced by molecu-r beam intersection of nitrogen oxide and oxone 08 pl 140 N68-17663

Reactant properties of fuel cells used as chemical energy converters 08 p1123 N68-17821

Activity of platinum catalysts in solution - kinetics of latinum-oxygen reaction with hydrogen and of latinum-hydrogen deposition using double pulse INRL-6627, PT. 21 08 pl141 N68-17857

Research survey on molecular structure, chemical reactions, magnetic and electrical properties, transport properties and reaction kinetics of complex materials of complex materials 08 p1225 N68-17865

Pressure and tempera-tions and kinetics, phase and electrical party re effects on chemical reac-ransitions, X ray diffraction, and electrical proper [AROD-2759-19-C] 09 p1406 N68-18364

ed darkening of copper bromide Heat, and light induc-containing films, and so [NRA-861]

09 pl292 N68-18389 Phase equilibria in ternary system vanadium niobiu carbon through mehing ranges of cubic monocarbide [AFML-TR-65-2, PT. 2, V. 17]

09 p1351 N68-18394 Hest treatment and chemical etching of platinus studied for effects on specific reaction rate of chemis orbad oxygen with hydrogen [NRL-6422] 09 p1293 N68-1843 09 p1293 N68-18434

Oxidation kinetics of tetrafluoroethylene com-bustion, and carbonyl fluoride pyrolysis [AFOSR-68-0099] 09 p1294 N68-18628

Thermodynamic rate equations for boundary analysis at liquid-vapor interface of mercury [NASA-CR-6[628] 09 p1448 N68-18630

Chemical kinetics of Martian atrespect to altitude effect on constituent tituent gases 09 p1420 N66-18837

position and physical properties [NASA-CR-93537] 09 p1424 N68-19093 Reaction kinetics for helium 3 born bardment of heli-

09 p1394 N68-19124

Reaction kinetics me dical aniom using elect enta on nitrobenzene resonance 09 p1299 N68-19339

ition kinetics of carbon mo xide-axygen reac-[NASA-TM-X-52196] 09 p1451 N68-19445

persed carbon 10 p1480 N68-19564 Oxidation kinetics [BM-TRANS-3323] Asymptotic methods for systems of differential tions in which some variables have very short re-10 p1554 N68-19585

ion of stripping Diffraction tech d miclei 10 p1563 N68-19648 and pickup reactions on defe [JINR-P4-3447] Kinetics of vapor phase deh hanol catalyzed by cation ex on of methanol and

10 p1482 N68-19739 Spectroscopy of reaction products of lithium ato in inert gas matrices

10 p1485 N68-19958 Driving mechanisms of longitudinal, high frequency ombustion oscillation in rocket motors burning premixed gases ISAS-420, V. 33, NO. 21

10 p1614 N68-20172 Thermal oxidation mechanism overy high pressures and varying to of methane studied at

10 p1492 N68-20327 Kinetics of calcium carbon ate-silicon dinside solid 11 p1644 N68-20633

Reaction kinetics for hydrolysis and oxidation of hydroxylamine sulfate 11 p1645 N68-20660

on metal surface 11 p1651 N68-21090 Kinetics of oxide film growth on at [SC-DC-67-1632] tics of oxygen solution

m tantalum and nic [ANL-7335] sodium environment 11 p1651 N68-21119 Kinetic study of scintil (UCRL-TRANS-10166) in pure organic crystals 11 p1754 N68-21136

d to mechanical proper

11 p1719 N68-21326 Lesd tetrascetate as oxional degradation processes in suilding models of reaction me ing agent for synthetic organic chemistry and building model [JPRS-45021] 12 p1831 N68-21861

Building models of reaction 12 p1831 N68-21863

Oxidation of 2-buteness 12 p1831 N68-21883

or incident proton and 400 MeV region 12 p1922 N68-22150 Effect of varying nuclear p radiochemical cross sections negative pion reactions in 50 to [NASA-CR-94309]

le couple on carbon and Kinetics of oxygen-peroxid raphite 12 p1834 N68-22181

Diffusion kinetics of radio conium surface [LA-TR-67-32] ctive carbon on beta-zir-12 p1890 N68-22669 se catalysis and studies in

Reaction kinetics of acid-b deuterium oxide as solvent [NYO-1725-28] 12 p1840 N68-22881 Kinetic study of hexavale hydrogen peroxide in acid so (CEA-R-3168) nt plutonium reduction by

12 p1840 N68-22904 Uranium and pustentic stainless carbide reactions with idied between 650 and 1050 deg C (CEA-R-3353)

12 p1893 N68-23019 inge reactions studied 12 p1841 N68-23027

13 p2008 N68-23082

yses on tramition and ta-diketones 13 p2010 N68-23285 Kinetics and structural a rure earth metals with chelat [NYO-906-80] ns by flash photolysis 13 p1999 N68-23292

kinetic studies of gas phose car-al with rapid scanning infrared

13 p2012 N68-23386 of hydrogen oxygen reacti

mear second ignit (BRL-R-1396) 13 p2170 N68-23727 ce and kinetics of

nical properties and reactions of stale - electric and crystalline pro-ing, alloys, mineral mining and FTD-47-65-201 13 p2075 N68-23814

ny chloride and antimony ponding halides of alkali

13 p2018 N68-23834 - reactions CI plus HCI and CI plus molecular chlorina (TR-0158/3240-20/8) 13 p2020 N68-24053

osteady state kinetics of a and gaseous diffusion (SRI-25-P) 13 p2022 N68-24233

on single step deuteriintraparticle diffusion et um-hydride exchange react 13 p2022 N68-24253

dioxide and graphite 13 p2023 N68-24266

Heat generating porous tube reactor for studying fast exctions at high temperature 13 p2024 N68-24295

Condensation kineti [NASA-TT-F-11716] 14 p2210 N68-24523

perature 14 p2212 N68-24691

14 n2213 N68-24694

Reaction kinetics for electrode-oxygen reaction 14 p2216 N65-25017 on analysis by men

Pion-proton high energy of alpha heavy plute spark of [CEA-R-3209] 14 p2314 N68-25165 Thermal analysis on pyr lvsis of charring ablator

NASA-TM-X-596411 14 p2373 N68-25277 f niobium pentachloride omatograph 15 p2403 N68-25662 Kinetic study of reduction by niobium metal using gas of (IS-1780)

on of silver nitrite in Kinetics of thermal d vaccoum and atmospheric [NASA-TT-F-11732]

and for kinetic studies me of flight mass spec-15 p2409 N68-26082

Kinetic behavior of chemil pressure independence of ni upper atmosphere uminescent reactions -15 p2409 N68-26083

Photolysis of mixtures of oxygen with nitrous oxide, itrogen, and carbon dioxide, and relative reaction stes of I D oxygen atoms with admixed gases dmixed gases 15 p2409 N68-26084

Reactions of methyl and acetyl radicals with oxides of nitrogen 15 p2411 N68-26096

Reaction kinetics of partly flu orinated ethyl radicals 15 n2411 N68-26097

Reaction kinetics of met of radioactive tracers in quiton kinetics 15 p2411 N6E-24099

action kinetics of iodole c - heat of formation of pi as on reactivity of beauence zene and hydrogon nyl radical and impli-

15 p2412 N68-26102 Kinetics of formation of senon

15 p2413 N68-26181 Liquid ammonia and alkali metal amides reaction notics and thermodynamic equilibrium

15 p2413 N68-26183 tics of comentation of

15 p2483 N68-26205

[FTD-HT-67-153]

[AFOSR-68-0"37]

Reaction kinetics of electrochemical oxidation and

Denaturation, melting, contractility, reaction inetics, and mechanochemical properties of collagen

15 p2418 N68-26581

16 p2606 N68-26988

SUB

kine

8

ICO

Repolys

REACT

Ele

Co

Fin ration (IZF-

[NAS

Pile and di [AM-

Cor

[NAS

of read

Stim

Pers

Sens jet din USAI

IZF-1

Axia isother reactor

Confe

Pyrolysis and thermal cracking on burning rate of [TR-5] 16 p2791 N68-27007 16 p2606 N68-27020 [LA-3875] Reaction rates and energy distributions during onization and recombination processes in optically 16 p2733 N68-27060 Electron transitions and angular distribution data for O/He 3,n/Ne double stripping reaction 16 p2721 N68-27344 Densification kinetics and rate equation in vacuum inate /spinel/ 16 p2669 N68-27461 hot pressing of magnesium alum [NASA-TM-X-59053] Adsorption of electroactive species in stationary electrode polarography in electrochemical system ochemical system 16 p2610 N68-27731 Reaction kinetics and particle distribution of barium oxide nickel thermionic cathode formed by nickelate technique 16 p2632 N68-27786 Combustion reactions, products, and temperature for fluorocarbons burning with fluorine 16 p2796 N68-27787 tion rate in therluminum sulfate 16 p2613 N68-28059 [NASA-TT-F-11479] Structure and composition of oxide films after high temperature oxidation of alloy containing iron, chromium, aluminum, and yttrium [RD/B/N-1006] 16 p2614 N68-28107 Reaction kinetics and analysis in use of gamma ray irradiation to initiate polymerization reactions [BNL-12334] 16 p2614 N68-28108 Calculation methods for transient kinetic power dis-ibutions in reactor cores and space-time flux synthesis 16 p2707 N68-28130 [KAPL-P-3425] Thermodynamics and kinetics of multiple chemical reaction system near equilibrium for isobaric and other 16 p2617 N68-28329 Stereochemistry and reaction kinetics in oxidation of butylbenzene in emulsion by molecular oxygen 16 p2602 N68-28332 Reaction kinetics of rare earth ion and anion forma-tion to study ion complexes stability 17 p2835 N68-28344 Reactor safety, reflectors, and cores, in nuclear fuel fusion reaction rate distribution for materials testing loadings of Dounreay fast power reactor [TRG-1571/D/] 17 p2913 N68-28411 Mass spectra and differential cross sections for nucleon isobar production in proton-proton reactions oton-proton reactions 17 p2924 N68-28434 Optically active polymeric imidazole and its effects on solvolysis of esters for explanation of stereospecificity of enzyme catalyzed reactions 17 p2837 N68-28455 Reaction kinetics and chemical composition in solid solution of calcium oxide, iron oxide, and silicon diox-ide, in contact with iron at 1080 deg C 17 p2838 N68-28480 Chemisorptions to find active surface area and study surface reactions during oxidation of granular gra-phitized carbon black 17 p2838 N68-28518 tion and polycordensation to study reaction and oligomer production in polymerization of troic acid to polycrystal state 17 p2838 N68-28546 Computer program for solution of competitive con-secutive, second-order kinetics reactions by least squares method (TR-68-69) 17 p2839 N68-28571 Ficks equation, diffusion theory, and electrode reac-ons in description of electrolysis process 17 p2840 N68-28909 Applicability of phase diagrams in predicting dissolu-tion kinetics of binary solutions and multicomponent [NASA-CR-95399] 17 p2904 N68-28917 Vaporization and pulverization in reprocessing of in-diated ceramic nuclear fuels by chlorine trifluoride

17 p2843 N68-29270

silicate and tricalcium during hydr annealing reaction kinetics [NASA-CR-95677] bination of atomic oxygen in gas fi [CAL-AF-2033-A-1] Surface diffusion mechanism and coefficient from gas phase adsorption kinetics in N-SiO gel 18 p3017 N68-29615 Mass and electron transfer, electrolysis and hydroly-sis in electrochemical oxidation in organic redox system to study reaction kinetics and rate Numerical analysis of interface layer generated by sonic jet directed against supersonic stream using boundary layer equations for stagnation point flow [MC-66-26-R1] 18 g3060 N68-29815 Reaction kinetics and rates, and isomerization effects in hydrogen peroxide oxidations of thiocyanate Nonlinear combustion instability in liquid propellant rocket motors, and research on damping devices, reac-tion kinetics, and cold flow tests [NASA-CR-72426] 18 p3186 N68-29983 Theoretical and numerical model study of oxidation kinetics based on ionic diffusion in discrete lattices [NASA-CR-95837] 18 p3152 N68-30028 Pyrolysis, phase compo for Zr-Ca-P2 oxide system Increased oxidation resista Plasma reaction kinetics, and electron energy and easity in plasma studied for direct conversion of ther-nionic nuclear fission energy in plasma diodes GMR-767] 18 p3005 N68-30443 mionic nucle [GMR-767] Molecular structure, reaction kinetics and rates, and (NRL-6690) Thermodynamic stability me phosphine metal compounds lon activity function in solution kinetics for drochloric acid catalyzed ester hydrolysis [COO-1712-2] Neutron em [MLM-1462] Stereochemistry and reaction kinetics of electrophilic additions to acetylenes
[AD-669614] 18 p3032 N68-30863 Kinetics of hydrogen reduction of manganese diox-Reaction kinetics and influention of recoil C atoms with alkan Rearrangement rates of labeled allylic esters in gas phase stirred flow system 19 p3220 N68-30906 Kinetics of grain boundary grooving at nickel alu-inum oxide interface 19 p3349 N68-30981 Polar addition of hydrogen halides to acetylenes 19 p3222 N68-30998 Theoretical and experie al studies on chemical chanisms in propellant reaction and vapor supply mech explosive sensitivity HTRI-C6099-11 19 p3226 N68-31347 Kinetics and chemical peculiarities of alow nitration reaction between propane and nitrogen dioxide [TIL/T-5757] 19 p3231 N68-31918 19 p3231 N68-31921

High temperature method for direct syntheses of polyhedral carboranes from boranes and excess acceylene [TR-16] 19 p3232 N68-31923 Reactor stability, xenon induced flux oscillation core power distribution and reactor kinetics for pressurized water reactors (BNL-12390) 17 p2940 N68-29314 [TR-16]
Reaction kinetics of silicon-fluorine and silicon hydrogen bonds in asymmetric silicon 20 p3416 N68-32334 Recoil reaction Recoil reactions of atomic carbon, and carbon 11 recoil product yield dependence on radiation dose and (IS-T-216) Kinetics of radioactive soil layer removal from stain-less steel surface 17 p2845 N68-29354 Reaction kinetics of electrophile additions to conju-ted dienes, especially addition of sulfenyl chlorides and nitroso compounds 20 p3484 N68-32336 Convection effects on ignition and combustion of liquid fuel droplets 17 p2846 N68-29433 20 p3608 N68-32341 s and interaction of tricalcium Critical examination of 12 empirical and theoretical formulae describing hydration kinetics of binding sub-17 p2846 N68-29439 Mathematical models for analyzing irradiation and 20 p3416 N68-32343 [RTS-4230] 17 p2960 N68-29561 Decomposition kinetics of photoassium nitrate and nitric acid Reaction kinetics and heat transfer in surface recom-RTS-4395] 20 p3418 N68-32509 18 p3017 N68-29573 Dehydration and decarboxylation kinetics, and glass n of poly acrylic acid 20 p3418 N68-32522 [TR-17] Reaction mechanism for Na-23/d,alpha/Ne-21 reac-20 p3542 N68-32536 Constant for reaction velocity of hydrogen atom with thyl alcohol molecule 18 p3018 N68-29737 ethyl alcohol [RTS-4424] 20 p3419 N68-32554 Unimolecular reaction kinetics and intermolecular energy transfer 20 p3420 N68-32574 Transport properties and reactions of thermal energy mass identified by drift tube mass spectroscopy [SQUID-TR-GIT-3-PU] 20 p3423 N68-32797 18 p3020 N68-29931 Equilibria, point defect nature, and kinetics in stems of rare earths and di or tetravalent oxides 20 p3424 N68-32845 ction geometry effects on oxidation and reduction of alkaline silver electrodes [NASA-CR-96279] 20 p3428 N68-32918 Organic halides effect on hydrogen yield from gamma radiolysis of methanol [KFK-TR-238] 20 p3430 N68-33166 Exchange reactions of bis complexes of chromous, ferrous, and manganous ions, acid hydrolysis of vanadous and chromous ion complexes, and kinetics of formation of vanadyl complexes. 18 p3090 N68-30124 th refractory metal powder
18 p3090 N68-30187 nce by mixing fluoride 21 p3649 N68-33900 ndary layer buildup effects in shock tubes on dis-on rate measurements INASA-TN-D-47951 21 p3681 N68-34089 Reaction kinetics and structure of self-susta detonation waves propagating in flammable gases [REPT.-06996-2-T] 21 p3795 N68-34 flammable gases 21 p3795 N68-34425 zations 18 p3099 N68-30444 Hydrogen overpotential and electrode kinetics for platinum in HCI solutions over large range of anodic and cathodic current densities [TR-21] 21 p3653 N68-34503 rasurements on aliphatic 18 p3029 N68-30520 Reaction mechanisms for heavy nuclides (UR-3591-91 21 p3745 N68-34658 r hydrolysis 18 p3029 N68-30557 Flow reactor kinetics of ethylene hydrogenation over metal oxide catalysts nission and reaction kinetics in exchange enriched O with Pu/238/O2 18 p3029 N68-30568 22 p3821 N68-35046 Oxydative platic tion mechanism with 22 p3822 N68-35092 Theoretical kinetics of therm nal reactions in gas phase omic molecule dissocia imolecular reactions, dia ms, and three body recon es /approxi 19 p3218 N68-30877 22 p3822 N68-35168 ence of oxygen on reac-Mathematical analysis of co reaction kinetics of combustion compression waves and on zone flame propaga-19 p3220 N68-30882 (FTD-HT-23-34-68) 22 p3978 N68-35408

Theoretical description of the reaction rate of an ion-olecule interchange reaction as a function of collision REACTION NASA-TM-X-63342] 22 p3829 N68-35747 Mathematical model and co lyzed hydrazine decomposition [NASA-CR-97097] computer program of cata-tion reaction chamber 23 p4160 N68-36029 Stagnation region of shock layer in high velocity flow of hydrogen-oxygen over blust bodies [MICH-8-PU] 23 p4186 N68-36344 Reac RAE-1 Reaction kinetics of high energy oxygen diffuoride diborane propellant system [NASA-CR-97203] 23 p4009 N68-36596 TN-19

Theory of mixtures of ch muids and numerical solution of th ically reacting inviscid 23 p4010 N68-36697

[ANL-TRANS-590]

923

con

334

136

of

341

ical uh.

343

of

509

lass

522

ac-

536

154

dar

574

rgy

797

in

145

118

om

66

000

tin-

189

sed

25

03

58

ver

46

92

to.

29

44

96

id.

Very high pressure p netics of chalcogenides pers in multiple axes cont [TR-0158/3307-01/-16] 23 p4010 N68-36747 20 p3595 N68-33527 in system for dual spin Sampled data controlle accoraft attitude control 23 p4012 N68-36902 20 p3597 N68-33539 and TNT time dependent reaction zone calculation [LA-3764] pointing control of 23 p4013 N68-36975 20 m3598 N68-33541 uation of rate data for homogeneous, gas-phase ns in curbon monoxide, and thermodynamic of dual-spin advanced 20 p3598 N68-33542 23 p4014 N68-37008 ntum exchange for at-orological semiors 20 p3598 N68-33544 Mass spectra and reaction properties of pion decay [COO-1428-83] 23 p4134 N68-37227 Proton transfer reaction kinetics determined by zero momentu 24 p4210 N68-37431 20 p3598 N68-33545 Diffusion kinetics of iron and nickel in single crystals of magnesium oxide REACTIVATION 24 p4212 N68-37625 ACTIVATION Mathematical model for reaction kinetics of conduc-tive heat transfer in ceramic surface 24 p4353 N68-37654 REACTIVITY Pulsed and statistical techniques and instruments for neasuring reactivity coefficients of control rods, noderator level, and core temperatures for R.O.S.P.O. pyrolysis RT/FI/67/221 24 p4214 N68-37680 01 p0093 N68-10694 Effect of group-consumer Kinetics and mechani and Pd /II/ complexes w [AFOSR-68-1620] of acid hydrolyses of Ni /II/ thylenebisbiguanide 24 p4214 N68-37707 veraging procedure on (RPI-328-99) 01 p0099 N68-10709 Two reactivity meters for fast re [TRG-1526/D/] REACTION TIME 04 p0538 N68-13051 Elementary rate constants for reaction atoms with substrate molecules in gas pl [NYO-3794-1] 05 poe ns of hydrogen Computer program for co reactivity effect in fast reactor (GEAP-3543) ulating total Doppler os poezs Nes-14540 04 p0542 N68-13871 Corrosion rate of graphites by carbon dioxide and vater vapor including effects of in-pore diffusion and emperature gradients Xenon reactivity transproduct decay after irra [IN-1096] measurements of fisaion of fisaile isotopes 05 p0706 N68-14114 [DP-391] 06 p0788 N68-15515 Human operator describing functions with visual and tactile displays rs on reactivity coeffi-05 p0696 N68-14794 sics including core power of varying reactivity in of linac pulse 05 p0697 N68-14988 06 p0780 N68-15906 Fine-graduated magnitude rations with closely spaced of [IZF-1967-19] le scale derived for short du-Neutron superbooster ph kinetics under conditions response to different lengths [AERE-R-5205] li 06 p0785 N68-16066 Low level, low frequency electric field effects on human reaction time [NASA-CR-92700] Dynamic characteris nd reactivity concents nuclear reactor systems, 07 p0942 N68-16115 07 p1025 N68-16217 Pilot reaction time as function of flash luminance ad duration from ground signals ration procedure using static eigenfunctions and ar equation for calculating particle decay con-and evaluating reactivity. [AM-67-24] 07 p0951 N68-17038 Correlation between sensation time and reaction me based on physiological tests patterned on as-unomic observations of star transients 07 p1039 N68-16218 Reactivity effect of polyethyle (AE-305) ne in fast reactor 07 p1032 N68-16881 [NASA-TT-F-11350] 08 p1133 N68-18009 Auditory adapta of ready and respon [AMRL-763] ts in reaction time to range nactivity coefficients 09 p1375 N68-18857 11 p1640 N68-21485 m effect on reactivity of aromatic ligands 09 p1295 N68-18884 Stimulus intensity and ad-nunts of simple reaction time 13 p2004 N68-23387 ractivity coefficients with riticality, and long-term Perceptual motor skills experimental design and man 15 p2399 N68-25803 09 p1377 N68-19042 get displacement and retinal la [USAMRL-773] ent of Pulfrich tar-Reactivity effects car d by radial power flattening tency differences 18 p3012 N68-30741 in gas cooled, fast-spe (NASA-TN-D-4459) 10 p1555 N68-19925 Experimental str perception during infor-

in polyethylene and hydrogen atoms 11 p1651 N68-21105 Reactive species pro-yrene by ionizing radiati Temperature coeffici for organic cooled latt uranium dioxide fuels (DPST-68-83-1) measurements of reactivity with simplaced burned-on Measurement of reactivity effects in Enrico Fermi [APDA-NTS-12] Prompt neutron decay and reactivity measurements in subcritical enriched uranium metal cylinders [ORNL-TM-1736] 12 p1939 N68-22866

ems design, feedback control, maneuverability, rformance analysis of dual reaction wheel con-spacecraft pointing of hollow Cd safety rod Negative reactivity worth with internal scattering mater [BNWL-618] 09 p1417 N68-18258 12 p1913 N66-23035 Elimination of perturbing effect of constant neutron source in reactivity measurements [NAA-SR-MEMO-12290, REV.] 13 p2112 N68-23058 Reaction wheel system for coarse and fine star ferenced altitude control of stellar observatory satel-

20 p3409 N68-32407

20 p3433 N68-33522

idence studies of audi-

23 p4003 N68-36808

(RAE-TR-67056) 14 p2345 N68-24782 Stable equilibris n of spacecraft contain ing momentum wheel [TN-1967-16, REV. 1]

Axial mixing effect on conversion of second order othermal methyl acetate saponification in fixed bed actor by reaction rate determination

Reaction time and choice of tory signal perception in huma

REACTION WHEELS

18 p3172 N68-30753 Conference on spacecraft with relative rotation

Reactivity insertions in compact reactor cores due to [NASA-TM-X-1587] 13 p2108 N68-23894 Reactivity effects of mo type lattice of nuclear reacts (AECL-3002) erator voids in CANDU 14 p2292 N68-25048

(FEI-77) m for critical reactor 14 p2293 N68-25135 in natural water (CEA-R-3173) 14 p2374 N68-25305 by mill reactivity RT/FV67/301 14 p2296 N68-25419 Criticality and central reactions with uranium and plutonius [LA-DC-9216] ity calculations in resc 15 p2501 N68-26432 Analysis and testing of a BNWL-475] 15 p2502 N68-26461 tivity and use as reactor m [WARD-3791-13] 15 p2484 N68-26554 16 p2703 N68-27218 untion reactions, products, and temperature ocarbons burning with fluorine uorine 16 p2796 N68-27787 Neutron kinetics of heavy after reactivity changes (IS-1808) 16 p2706 N68-28109 Reactivity, fission, and enthermal reactor /STARK/ wit [KFK-668] ment in loading of fast safety limits 17 p2915 N&8-28958 Reactivity change from cha ections of U 238 bound in us g melting studied for fast suc ge in absorption cross sium oxide luttice during melting stu (BNWL-717) r model, reactivity, ther action kinetics of various and automatic neutros mic properties and re ade in reactor physic ction analysis program [Al-AEC-12638] 17 p2917 N68-29353 Pu and U oxides, Zircaloy 2, finion products, reac-vity, and neutron physics in nuclear fuel element QR-16) 18 p3121 N68-30850 Static, oscillator, and trans reactors for reactivity and kins [KFK-649] nt tests on fast ceram 19 p3310 N68-31249 Fuel element size effect on Doppier coefficient of 19 p3310 N68-31344 c black alumina 19 p3229 N68-31784 [NRC-TT-1325] Summary inform projects and test re and criticality and [BNWL-739] 19 n3314 N68-32101 Investigation of p teraction effects (CCL-250) 22 p3953 N68-35371 Mathematical model of m with continuous reactivity mes [CEA-R-3375] 22 p3911 N68-35714 ats with reactor Evaluation of re (EUR-3013.E) 23 p4102 N68-36872 of materials measured as func-its of pulsed reactor Reactivity worth of position in glory (SC-CR-68-3571) reactor core reactivity during rise in power 23 e4104 Nids-37187 IGAMD-7909 Reactor contro Alamos Turret R [LA-3965-MS] 24 p4294 N68-37579 Reactivity integral [ANL-TRANS-645] 24 p4295 N68-37880 Rod drop tech uring large negative 24 p4296 N68-37923 umples in RANA reso of effective absorption RT/FU/68/23] 24 94297 NAS-37976 REACTOR CHEMISTRY U RADIOCHEMISTR

REACTOR CORES

Absorber plate e

reactors (EUR-3615.D, V. 1)

01 p0091 N&B-10446

Pulsed and statistical techniques and instruments for easuring reactivity coefficients of control rods, oderator level, and core temperatures for R.O.S.P.O. [RT/FI/67/22] 01 p0093 N68-10694 Maximum credible boron release from core surfaces of pressurfaced water reactor with chemical shim [EUR-3609.E] 01 g0095 N68-10862 Thermal, explosive, and cold sizing of large tubular Zircaloy structures for nuclear core applications [WAPD-TM-620]. 03 p0374 N68-12454 Neutron flux distribution and buckling measure-tents as function of fuel loading in reactor lattices NP-16953] 03 p0378 N68-12675 ormance of Peach Bottom high tempera-Physics perfe IGA-81171 oled reactor 03 p0379 N68-12683 Method for generating space dependent multigroup effective core cross sections for 710 reactor analysis [GEMP-548] 03 p0379 N68-12685 Models of fuel bearing nuclear reactor core matrices for analysis of individual principal and circumferential stresses based on isocline isochromatic spectra of geometric configuratio [NASA-TT-F-11371] 04 p0587 N68-13080 [NASA-TT-F-11371] 04 p0387 No8-13080 Plutonium enriched fuel use in pressurized water reactor systems through design, fabrication, and opera-tion of partial core of plutonium oxide uranium oxide in Saxton reactor [WCAP-3385-121 04 p0542 N68-13870 Design requirements and operating characteristics of plutonium fuel assembly of fast flux test facility [BNWL-SA-1434] 05 p0692 N68-14129 Critical experiment for cavity reactor using gaseous uranium bexaftuoride core configuration [NASA-CR-72329] 05 p0692 N68-14173 Power burst facility critical experiment reactor ratem control rod measurements
GEMP-560] 05 p0693 N68-14222 system control [GEMP-560] Analytical method for determining reactivity changes of fast reactor core due to elastic-plastic stress and creep 05 p0693 N68-14353 Mass spectrometric determination of cesium 737 content in Yankee core fuel samples and fuel burnup analyses for plutonium 236 and 238 [MCAP-605] 05 p0694 N68-14482 Hydrodynamic characteristics, instability thresholds to burnout limits for 6-rod clusters in natural and rced circulation 05 p0694 N68-14483 Method of computerized solution functions extended from rho-theta to rho-phi and rho-theta-phi cylindrical geometries for multiregion reactors [KAPL-P.3381] 05 p0694 N68-14491 In-core and out-of-core measurements on startup de-tectors for pressurized water reactors [BAW-3647-5] 05 p0694 N68-14494 Experiments, and property measurements with scored core load of fast thermal reactor KFK-592] 05 p0695 N68-14536 Engineering and metallurgical evaluation of Yankee core spent fael [WCAP-6084] 05 n0695 N68-14594 Feasibility study and in-pile experiments with twisted tape prototype (uel elements for boiling water reactors [EUR-3651.E] 03 p0696 N68-14736 Neutron superbooster physics including core power kinetics under conditions of varying reactivity in response to different lengths of linus pulse [AERE-R-5203] 05 p0697 N68-14988 [AERC-R-3203] U5 p0697 Nea-14988. Reaction rate ratios in reactor lastices including effects of local neutron fluxes occurring as discontinuities in regular fael rod patterns [WcAP-606] 06 p0875 N68-15493 WCAP-6066)

Effects of temperature and lattice pitch on material nuckling and reaction rates in low enrichment uranium storade fueled cores moderated by light water AFEW-R-502)

On 10876 N68-15780 [AEEW-R-502] Criticality calculations for small, cylindrical, lithium cooled reactors for space power systems [NASA-TN-D-4371] 66 p0876 N68-15792 Two microwave methods for measuring in-core tem-peratures of nuclear reactors [BNWL-399] 07 p1023 N68-16142

Thermoelastic response of fuel elements and cladding, and ejection of liquid metal coolants from core in pulsed fast reactors
[EUR.3654.E] 07 p1028 N68-16433

Nuclear fuel elements in Pegase reactor core [CEA-R-3213] 07 p1029 N68-16574

enter test fuel elements irradiation in steam

07 p1028 N68-16433

07 p1031 N68-16794

on of failed fuel in reactor core 1471 08 p1204 N68-17348 [JAERI-1147] (BNWL-1951 UJV-1904] [UCID-15268] [AE-315] Heat transfer mech [IDO-[7249]

Computer program for calculating isothermal, turbu-lent jet mixing flow of two gases in coaxial flow, gas LA-DC-9426]

Analytical investigation of flow and wall temperature remitivity in heated passages for large inlet to exit dentity ratios in subuonic flow of nuclear rocket NASA-TN-D-4649]

17 p2983 N68-28371 NASA-TN-D-4378 08 pl 165 N68-18146 Temperature profiles of porous plates with volume eat release for effutional cooling of nuclear reactors Reactor safety, reflectors, and cores, in suclear fuel fission reaction rate distribution for materials testing loadings of Dounreay fast power reactor [TRG-1571/D/] 17 p2913 N68-28411 09 p1449 N68-18679 Uranium base fuel assembly deve [ORNL-4108] 09 evelopment 09 p1379 N68-19264 Critical mass of uranium 235 for stainless steel lined cavities in nuclear research and test reactors with heavy water reflector [NASA-CR-72409] 17 p2914 N68-28566 Heterogeneity calculations dent resonance self shielding [KFK-633] is including space depen-10 p1554 N68-19554 Cavity reactor critical experiments with full gaseous core of uranium hexafluoride, and mockup experiments using sheet fuel [NASA-CR-72415] 17 p2914 N68-28612 Fabrication of instrumented and in-pile capsules [ORNL-4190] nuclear fuel elements 10 p1555 N68-19664 B beta current in core neutron flu flux detector 10 p1530 N68-19971 Mechanical and high temperature testing of graphite components as reactor core supports [GAMD-8371] 17 p2904 N68-28973 Eddy current testing equipment for inspection of reactor cores [JEN-179-DME/I-15] Core loading procedures and time-of-flight experi-ments for spectral measures from fast nuclear reactors [GA-8543] 17 p2916 N68-28977 11 p1702 N68-20601 Ultrahigh temperature reactor experiment [LA-3835] 11 p1738 N68-20892 Monte Carlo method and fitting procedure for heterogeneity calculation in fast reactor lattices [RT/FI/68/11] 17 p2918 N68-29532 procedure for procedure for infast reactor lattices 17 p.2918 N68-29532
Parametric studies of nuclear reactor core design to determine effects of control rod and fuel pin configuration changes on core characteristics [IDO-17241] Critical assembly for in-core checking of neutron detector for power reactor [BAW-3647-6] 11 p1697 N68-21075 [BAW-3647-6] 11 p1697 N68-21075 Ultrasonic band testing between tubes and metallic uranium core in nuclear fuel elements [REPT-856/14/PS] 12 p1902 N68-21891 Distribution of fuel concentration in active zone with given flux in core and related one dimensional Breeder characteristics of graphite moderated high temperature spherical pile reacti [NASA-TT-F-11705] 18 p3116 N68-30369 12 p1907 N68-22589 In-core electronic void meter development [AEC-TR-6929] 12 p1876 N68-22656 Reactivity and neutron spectra in fast nuclear reac-tors, and subcritical time-of-flight spectrum facility [GA-8377] 18 p3119 N68-30725 Cermet fuels for reduced fuel element swelling and pecific mass increase of reflector controlled reactor Computer program for three dimensional nuclear thermal-hydraulic characteristics of reactor core [JAERI-1159] 18 p3120 N68-30761 12 p1911 N68-22909 Computer program for calculating plutonium en-riched cores [EUR-3891.1] 13 p2108 N68-23892 Calculating experimental cores on critical assembly of Polish Maryla-2 reactor [REPT.-878/XXI/PR] 18 p3120 N68-30778 Fuel cladding temperature measurements of EK-10 type reactor fuel rods in EWA-2 core [KEPT.-879/XI/R] 18 p3121 N68-30817 Reactivity insertions in compact reactor cores due to fuel movement [NASA-TM-X-1587] 13 p2108 N68-23894 Partial differential equations for calculation of transient temperature distribution in reactor core with cylindrical fuel rods and compressible coolant Absorption cross section is containing burnable poisons as in power reactor cores ion measurements in samples ons used for reactivity control in power react 14 p2288 N68-24450 19 p.3311 N68-31505
Irradiation testing of low density uranium oxide
stainless steel dispersion fuel for Mark 1 core of Argome Advanced Research Reactor
[IN-1160] Efficiency tests of systems filters, reactivity and flux leasurements on cadmium-boron neutron filters, and related research reactor activities [ORNL-TM-2147] 14 p2294 N68-25227 Criticality data handbook for hydrogen moderated uranium 235 and plutonium reactor cores [AHSB/S/-HANDBOOK-5, PT.2] 15 p2500 N68-25977 Caine library 51 developed for use on small, high leakage cores [KAPL-M-6738/CLP-1/] 19 p3314 N68-32155 Absolute measurement of threshold detector activi-ties, and evaluation of fast neutron flux in core [ORNL-TR-1843] 15 p2518 N68-26304 Homogenization of a Wigner-Seitz cell in two group (AEEW-R-594) 20 p3530 N68-32694 Criticality and central reactivity calculations in reac-tors with uranium and plutonium cores [LA-DC-9216] 15 p2501 N68-26432 Fuel dynamics of thin walled metallic uranium tubu-lar reactor assembly [HPR-89] 20 p3531 N68-32981 Criticality data tables for unmoderated and moderated uranium and plutonium cores [AHSB/S-HANDBOOK-5, PT.1] 15 p2504 N68-26793 Thermal conductivity measurements on sintered pel-lets and compacted uranium dioxide fuel in reactor pile [GEAP-5100-6] 20 p3532 N68-33132 Large containment capsule radiation of explosive materials [NASA-CR-95102] e for nuclear reactor ir-Nondestructive and destructive testing of reactor core Zircaloy pressure tubes and control rods to evaluate irradiation performance of CVTR components [CVNA-289] 16 p2703 N68-27049 Cohn model for pulsed neutron reactivity in reflected reactors Piqua Power Reactor recovery core lower grid plate 16 p2703 N68-27218 [Al-AEC-MEMO-12574] 20 p3535 N68-33493 Core heat transfer measurements during rise to power in nuclear reactor [GAMD-7911] 16 p2706 N68-28084 Thermal neutron spectra in two dimensional omogeneous reactor cells Control red calibration curves for monitoring xenon reactivity during reactor power build up [GAMD-7910] 16 p2706 N68-28085 21 p3723 N68-33891 Thermionic reactor core with short-length externally fueled diodes, and electrical failure analysis [NASA-TN-D-4805] 21 p3723 N68-34087 ociated with core spray Model studies of reactor core [BNWL-518/DEL./] 16 p2706 N68-28089 21 p3726 N68-34474 Calculation methods for transient kinetic power dis-tributions in reactor cores and space-time flux synthesis Computer program for predicting lattice parameters for nuclear reactor cores [DUN-SA-70] 21 p3728 N68-34782 [KAPL-P-3425] 16 p2707 N68-28130 Electrically heated platinum wire for monitoring Calculated and experimental flux and energy distribution in ultrahigh temperature reactor [LA-DC-9511] 16 p2708 N68-28147 reactor temperatures [RISO-M-643] 23 p4062 N68-36716 Reactor fuels, reactor control elements, core lifetimes, fuel loading, and Phoenix marine reactors. Geometric problems and calculational methods as-ociated with radially loaded reactor - calculation of

SUB

P

K mod

RT

R

(BN

REAC

Ef meta

mod [AE

R

De

AL

data [AA

Er

Th

Hi

[CV

So [NA

Se (GE/

Inf

(KFI

De tiona vesti (EUI

lm netic (CLA

Th

proce heavy [AEE

De sule f [NAS

Exp reacti design

Co

integ [NA

core in pulsed for [EUR-3654.E]

23 p4102 N68-36756

DEX

28298

ralure it den-

28371

ar fuel testing

28411

lined with

28566

xperi-

28612

aphite

28971

xperi-

ctors 28977

e for

29532

ign to

0125

high

0369

reac-

0725

10761

mbly

0778

K-10

0817

mples

1505

oxide

2084

high

2155

roup

2694

ubu-

2981

pel-

3132

3316

plate 1493

ional

1686

nally

1067

474

782

ring

716

core

m Recycle Test Reactor, and Materials Testing [BNWL-635] Physical, mechanical, and nuclear properties of PAR-1 alloy used in nuclear reactor core construction [INR-779/XIV/PS] 23 p4120 N68-36776 Reactivity worths of materials measured as function of position in glory hole of pulsed reactor [SC-CR-68-3571] 23 p4103 N68-37044 Peach Bottom nuclear power reactor one reactivity and temperature measurements during rise in power [GAMD-7909] 23 p4104 N68-37187 cores [SNE-40] (RT/FI/68/27) REACTOR DESIGN (CVNA-274)

Reactor control and reactivity experiments with Los Alamos Turret Reactor [LA-3965-MS] 24 p4294 N68-37579 FORTRAN reactor cell code JASON for calculating thermal seutron flux fine structure [BNWL-482] 24 p4294 N68-37777 Aqueous solutions as emergency coolants for reactor 24 p4295 N68-37858 Kinetic and reactive behavior of two organic moderated and reflected, loosely coupled reactor cores 24 p4316 N68-37938 Reactor physics studies in fuel elements, fission and criticality, cooling gases, core calculations, and related computer programs

[BWWL-75] 24 p4298 N68-38497 24 p4298 N68-38497 Effects of irradiation and corrosion on structural metallic materials used in advanced gas cooled nuclear power reactors with emphasis on heat exchanger tubing and insulation foil:

[TRG-1516/EZ] 01 p0089 N68-10374 Digital computers used in gas cooled, graphite moderated reactor design [AEEW-M-754] 01 p0093 N68-10532 01 p0093 N68-10532 [AEEW-M-734] Ot p0093 Non-10332 Radiant heat transfer to aerosols for application in gaseous core nuclear rocket engine designs [NASA-CR-953] 01 p0093 No8-10561 Design problems in use of graphite as structural and noderator materials in nuclear reactor 01 p0095 N68-10807 Design, fabrication, and operation of heavy water organic cooled reactor 02 p0236 N68-11016 Erosion behavior of pebble reflector and pebble flow data for reactor design [AAEC/TM-339] 03 p0369 N68-11999 03 p0369 N68-11999 Theory and computer code for calculating resonance integrals and Doppler coefficients for reactor design [NAA-SR-12509, PT. 1] 03 p0374 N68-12436 High power, high burnup test assemblies for power 03 p0374 N68-12465 Sodium cooled fast reactor design criteria [NAA-SR-11378, V. 2] 03 p0375 N68-12509 Various research activities for nuclear reactor development program [ANL-7357] 03 p0376 N68-12532 Superheat nuclear fuel element tests [GEAP-5485] 05 p0696 N68-14712 Influence of design parameters on reactivity coeffi-cients of steam cooled fast breeder reactors [KFK-629] 05 p0696 N68-14794 Design features, safety instrumentation, and opera-tional characteristics of fast zero power reactor for in-vestigating neutron physics of large fast reactors [EUR-3676.E] 05 p0697 N68-14904 Improvement of cusp loss rate of fusion reactor mag-netic field using additional mirror field [CLM-M-61] 06 p0888 N68-15235 Three dimensional two group diffusion code for computerized simulation of nuclear reactor burnup processes encountered in designing steam generating heavy water read [AEEW-R-531] 06 p0876 N68-15779 Design data for gas cooled test loop, and impile cap-sule facility from mockup reactor experiments [NASA-TM-X-1509] 06 p0877 N68-15855 Experimental methods and assemblies for measuring reactor physics and lattice parameters for reactor design calculations 07 p1025 N68-16212 Computation of thermal neutron distributions for water moderated reaction (RCN-62) 07 p1030 N68-16607 Mark 5 fuel bundle design and fabrication to include bbed cladding turbulence promoters, lateral-type fuel

rod spacers, thin thermal liners, and himetallic process (GEAP-5400) . 07 n1032 N68-12036 Dragon project high temperature reactor operations [NP-17118] 08 p1201 N68-17242 Input language for NOVA module system for reactor [KAPL-P-3372] 08 p1204 N68-17399 Design, evaluation, improvements, and analytical techniques for reactor shielding standard [NASA-CR-93368] 08 p1207 N68-18184 Heavy water moderated boiling light water cooled utomium self-sustaining power reactor design AERI-1151] 09 p1376 N68-18879 JAERI-1151) Fast breeder reactor static physics methods - one mensional criticality and depletion code for relating naitivity of design parameters to complex physics odels 09 p1377 N68-19004 Influence of cooling cycle design on dynamic behavior and safety of steam cooled fast reactors [KFK-655] 09 p1378 N68-19252 Design criteria for high temperature, high pressure bolling required by power-producing nuclear reactors [NYO-3660-1] 11 p1705 N68-21074 Neutron noise analysis by probability distribution ethod for determining reactor parameters KFK-542] 11 p1740 N68-21143 [KFK-542] Design and technological development of zero power nactors and Experimental Breeder Reactor 2, reactor hysics experiments, and nuclear safety data 11 p1742 N68-21234 Reactor design and development, interactions with sozzle and turbopump during integrated testing, and fabrication and safety efforts related to NERVA pro-[NASA-TM-X-60977] 11 p1743 N68-21402 Overall systems design for fast flux test facility (BNWL-500) 12 p1856 N68-22597 Stability of boiling heavy water reactor studied by simulation on analog computer [BNWL-574] Design of water moderated, water cooled reactor with burnable poison [FEI-88] 14 n2296 N68-25403 Analysis and selection of design for plutonium 238 for Brayton cycle space powerplant [NASA-TN-D-4600] 15 p2389 N68-25829 Thermionic space power reactor design critical ex-periment program [GA-8309] 15 p2502 N68-26455 15 p2502 N68-26455 Component design and testing for deep sea radioisotope-fueled thermoelectric generator power supply system - SNAP 21 [MfM-3691-26] 15 p2506 N68-26947 Liquid metal cooled reactor development studies (ANL-7419) 16 p2703 N68-27881 reactors 16 p2705 N68-28036 Improved ablative materi vapor plating reactor for pre-titanium carbide continuous I [NASA-CR-72016] - design of chemical ing titanium boride and nents 17 p2903 N68-28440 Complete functional description of high flux isotope actors with reactor design, safety, fuel, control, and reactivity data included (ORNL-3572, REV. 2, V. 1A1 17 p2930 N68-28796 Molten Salt Reactor Experiment /MSRE/ fuel handling and processing plant design [ORNL-TM-907, REV.] 17 p2840 N68-28876 Fuel cycle costs for varying designs of gas cooled fast breeder reactors [GA-8032] Minimum radiation shield weight for nuclear reactor used as electrical source about apacecraft [NASA-TT-F-11651] [8 p3114 N68-29922

Parametric studies of nuclear reactor core design to determine effects of control rod and fuel pin configuration changes on core characteristics [IDO-17241] 18 p3114 N68-30125 Nuclear reactor design, construction, and utilization by atomic energy department of India 18 p3116 N68-30319 Experimental information from dilute photonium fueled critical assemblies used to improve fast reaction design data and calculation methods [GEAP-5271] 18 p3118 N68-30685 ethods 18 p3118 N68-30685 Conceptual design of 10 MWe nuclear Rankine system nuclear electric space power [UCRL-50382] 18 p3007 N68-30760

system for reactor design INAA-SR-MEMO-12529] 19 p3313 N68-32023 New design and material absorption and scattering of future zirconium hydrid (AI-AEC-MEMO-12673) equirements for achieving 21 p3727 N68-34596 Design features and perform thermionic reactor systems for [NASA-CR-96782] 21 p3728 N68-34737 Modification of bypass champ power of Triga reactor to 1 MW [RT/ING/66/26] el relative to increasing 23 p4101 N48-36599 on size, mass, and relia-electric propulsion 23 p4103 N68-36928 Design parameters influence bility of thermionic reactors for [NASA-CR-97257] U NUCLEAR FUELS REACTOR MATERIALS Double differential neutron scattering cress sections or zirconium hydride and uranium dioxide reactor AFCL-29151 01 p0092 N68-10475 nees with reduced sensitivity to neutron embrittle-ness for nuclear pressure vessel fabrication (EURAEC-1883) 01 p0093 N68-10483 Reactor materials and effects of radiation environ-nent on physical properties Radiation damage in nuclear reactor ceramic materi-01 p0082 N66-10803 Radiation induced changes in physical properties of reactor ceramic materials 01 p0082 N68-10804 Special uses of electron microscope and ossium thermal emission converter [JPRS-43323] 02 p0292 N66-11321 Empirical approach to estimating reactor vessel damage from severe nuclear excursion [GEAP-5163] 03 p0370 N68-12100 03 m0347 N68-12440 Test procedures for determ of reactor pressure vessel stee [COO-1477-8] ing fracture toughness 03 p0354 N68-12746 Methods for physical interpretation of time to rup-ture tests on reactor application metals [EURAEC-1908] 04 p0523 N68-13867 Saxon reactor special assemble data on prototype designs and manufacture comments of the plant chemical shim environments [WCAP-3269-59] bly irradiated to obtain naterials for use in large 05 p0691 N62-14094 Safety handling techniques for materials in nuclear ceramic resi [GEMP-557] active, and toxic 05 p0681 N68-14875 occupie, electrical, and for components and man High temperature therm lectronic materials for resc 06 p0873 N68-15354 fron and chromium alloys for fuel element cladding nd structural materials for fast breeder reactors 06 p0873 N68-15357 High strength steels and Incosel alloy 718 for oclear reactor pressure vessel materials 06 p0854 N68-15258 Fuel and blanket metals, ceramics, and other materials for reactors (IS-RD-11) 07 p1023 N68-16135 Material buckling concept in nuclear reactor theory nd experiment 07 p1024 N68-16210 Experimental methods of measuring lattice parameters, and uncertainties in estimating material buckling under intracellular thermal neutron density.

07 p1025 N68-16214 Interaction of Attapulgus clay and polyphenylic reactor coclants [EUR-2646.E, PT. 2] 07 n0056 N69-16434 tensile, croep, fatigue, of reactor materials 07 p1009 N68-16876 Neutron radiation effects impact, and hardness properti [NASA-CR-93128] Equation of state deterr reactor containment studies [HTRI-578-P-21-22] d for poreus solide in 07 p1092 N68-17062 n behavior of materi 07 p1033 N68-17079

SUB

N (KA

met [KA

subs [MI

Ri

(BN

E

reac [RIS

Ki

(STI

of pr

Ex

prov aspe on hi (CE)

on i

UFAM (EDC

Pr

NA.

(AN

En

Cricalcu

Di

Lit

Lie

Ins

tor s

(IDO

De tional vestig (EU)

Pro shield face

Rac

lacqui

Mo solids in nuc [IN-1

Dyn

petwe rod pl [RISC

Fue

Cor

AFT

(EUI

Safety

[NA

Va

REAC

C

REACTOR PHYSICS Theoretical and experimental studies of graphite and repectified reactor material oxidation behavior to 08 pl 190 N68-17424 [TID-23786] Irradiation effects on reactor structural materials (NRL-MR-1833) 08 p1206 N68-17918 al properties and frac-erials for water cooled Data availability on me are mechanics of irradiat (NRL-6625) 08 p1206 N68-17942 Tensile properties or seure vessel appli ected steels for nuclear reac-[NRL-6649] 09 p1351 N68-18415 Two dimensional reactor sh TRAN 4 for IBM 7090 compu [TRG-1466/R/] elding program in FOR-09 p1375 N68-18727 Neutron differential cross sections for graphite at high temperature [AERE-R-5574] 09 pl391 N68-18898 Literature survey on mechanical and physical pro-perties of nuclear fuels and cladding materials for potential use in pulsed fast reactors [BMI-X-455, PT. 1] 10 p1555 N68-19641 10 p1555 N68-19641 Synergistic effects of nu-pressure vessel materials [NRL-6620] ar radiation and stress on 10 p1605 N68-19978 Nuclear fuel [ORNL-4170] tor materials research 10 p1540 N68-20426 10 p1556 N68-20429 Fuel element develope and materials tests for 10 p1556 N68-20430 Brazing of aluminu um trioxide sintered [UCRL-TRANS-10144] 11 p1714 N68-21167 Reduced mechanical properties of hafnium after eat induced fracture with iron separation at grain (KAPL-3360) 12 p1909 N68-22723 Conference on irradia tural materials [BNWL-609] n effects on reactor struc-12 p1910 N68-22792

materials development, ced pressure vessels, and le and electric materials 12 p1911 N68-22836 Summary data on reactor refractory metal alloys, advan-high temperature thermocoup [GEMP-1002]

netry system for measuring fuel, it temperatures in liquid metal oled fast r 13 p2066 N68-23233 (QPR-1)

Component acceptance tests and data acquisition system for fast oxide reactor development [GEAP-5561] 13 p2106 N68-23372 Fracture mech nics evaluation of reactor vessel

[WCAP-3677-6] 13 p2081 N68-23424

[NRL-MEMO-1853] rts on reactor structural material 53] 13 p2108 N68-23881

Evaluating irradic water reactor pressu [HPR-91] ge in Halden boiling or pressure vessel m 14 p2288 N68-24500

Nuclear fuel materials, characteristics of uranium and photonium alloys, and radiation effects on materials during nuclear reactor operation

14 p2290 N68-24609 mary info anical properties of (GA-7978) 14 p2269 N68-24627

ar fuel elements and rector materials 14 p2291 N68-24759 (RISO-151)

Corrosion problems in nickel-iron in nuclear reacts e of austenitic chromement plants (BNWL-TR-25) 14 p2271 N68-25079

id reactor technological articles on chromatographic separation, and nuclear fuel proc [ORNL-4075] 14 p2219 N68-25581

Electrochemical corrosion ra galvanically coupled SNAP 21 mg [USNRDL-TR-68-26] rate measurements on materials in sea water 15 p2484 N68-26411

Vanadium cludding a tivity and use as reactor ((WARD-3791-13) s and stainless steel, reac-15 p2484 N68-26554

Effect of high temperature sodium environments on echanical properties of candidate ferritic and stemperature alloys for liquid metal reactors - high oxygen de high carbon cold tran analyses. and high carbon cold trap as [MSAR-67-203] 16 p2686 N68-28288

rements of fast neutron spectra in reactor [AERE-R-3364] 16 p2733 N68-28292 Reactor fuels and materials development [IN-1131] 16 p2710 N68-28299

ndiated and irradiated ad allowed start Fracture strength of no d alloyed steels 17 p2901 N68-28987 reactor pressure ver [WAPD-TM-565]

Nuclear safety program stud radiation hazards, materials, coes on reactor contre sponent design, fissio products, and f [ORNL-4228] 17 p2916 N68-28998

Phase diagrams and crystallo mediate phases of 63 binary thos [IS-1752] hic data for inter-17 p2901 N68-29122

Compressive yield strength of compuctear fuel plates nuclear for (IN-1179) 17 p2918 N68-29471

Summary information from various studies on effects of irradiation on reactor structural materials (BNWL-455) 17 p2918 N68-29533

tion, and utilization clear reactor design, co omic energy department 18 p3116 N68-30319

Fracture mechanics approof reactor vessel steel plates [EURAEC-2007] h to structural analysis 18 p3116 N68-30382

Fast Flux Test Facility for liquid metal fast breeder

[BNWL-SA-1750] 18 p3119 N68-30722 Transformations of resiphenyl and effect of r materials exposed to mixtures on degree of

FTD-MT-66-1231 19 p3295 N68-32031 huminum ionization plating of uranium-mo um alloy fast nuclear reactor materials to pro

19 p3313 N68-32040 terials for nuclear

[BNWL-SA-1458] 20 p3533 N68-33355 actor corrosion of zir-Parameters influ

(BNWL-SA-1719) 20 p3534 N68-33430 irements for achieving section specifications

New design and material absorption and scattering of future zirconium hydride [Al-AEC-MEMO-12673] 21 p3727 N68-34596 In-reactor corrosion of zirco um alloys 23 p4077 N68-36840

[BNWL-SA-1611] Reactivity worths of m of position in glory hole of [SC-CR-68-3571] ared as function 23 p4103 N68-37044

PM-2A reactor pres el material notch ductility and tensile property eva (NRL-6739)

23 p4104 N68-37339 Reactor materials studies, operation of W-Re-Mo capsule containing circulating Li, and space power reactor 4 reference design [UCRL-90004-68-1, PT. 1]

24 p4298 N68-38328

REACTOR PHYSICS

Probability distributions used to determine physics parameters in fast thermal reactor noise [KFK-542] 02 p0238 N68-11542 02 p0238 N68-11542

03 p0393 N68-12528

Various research activities for nuclear reactor development program [ANL-7357] 03 p0376 N68-12532

Equivalence relations for heterogeneous reactor [AAEC/E-166] 03 p0377 N68-12594

Physics performance ture gas cooled reactor [GA-8117] ce of Peach Bottom high tempera-03 p0379 N68-12683

Analytical results from neutron slowing down theory ad application to checkout of RBU slowing down rou-

(BNWL-3071 03 p0397 N68-12692 Radial temperatu kinetics of two dim ribution effect on neutron al circulating fuel nuclear

04 p0541 N68-13822 Neutron and reactor physics ielding, critical mass, and a mms and calculating methods , radiation detectors and mociated computer pro-

ORNL-4134] 05 p0703 N68-13952 Reactor zero power tra function measured with [APDA-NTS-11] 05 p0692 N68-14200

Steam cooled, fast reactor physics (KFK-627) 05 p0693 N68-14367

Computer methods for solving two dimensional, mul-tigroup reactor kinetics problems [GA-8169]

measurements of neutron t reactors, and analog com-

05 p0664 N68-14897 ts in thermal neutron

[PB-175681] 07 p1024 N68-16209 reducing fissionable rial in reactor phys

07 p1024 N68-16211 experimental methods and assemblies for measuring actor physics and lattice parameters for reactor ssign calculations

07 p1025 N68-16212

ring thermal neutron heterogeneous system ers, developing reactor physics experiments, retainties in cell and lattice parameters 07 p1025 N68-16215

ental design and theory esign problems 07 p1026 N68-16219

Integral measurements of epithermal neutron cap-ture to fission cross section ratios of uranium 233 and 235 irradiated with cobalt monitors in high flux facili-(WAPD-TM-613) 08 p1201 N68-17240

Fluxes and doses of filtered gamma and neutron diation at horizontal experimental channel outlets in 08 p1206 N68-17993

Coolant conductivity in water cooled research reac-[AFIT-TR-67-8] 08 p1206 N68-18037

d with chlorides of U, Pu, illing liquid metals 09 p1379 N68-19276 Fast breeder reactors, fueled d Na/K/ and cooled with boil (INR-842/C) rch in reactor and neutron physics 11 p1738 N68-20951 Summary of res [BNWL-472]

Applications of M tysics calculations te Carlo method in reactor BNWL-SA-1513] 12 p1908 N68-22676

Reactor physics and tec [KR-116] 12 p1911 N68-22839 as section set for fast res

Group en reactor calculations 13 p2105 N68-23220 physics methods develop-

Fast breeder rement and analysis [BAW-3867-2] 13 p2107 N68-23688

Experimental beryllin [GA-7485] m oxide reactor program 14 p2289 N68-24564 problems in reactor criticality calculations (KAPL-P-3400)

Neutron scattering, criticality, control, fuel eleme and shielding studies for nuclear research and test re

(BNWL-685) ... 15 p2506 N68-26942 Reactor calculations with TDSN discrete ordinates program 17 p2938 N68-29227

Reactor stability, xenon induced flux oscillation, core power distribution and reactor kinetics for presmirted water reactors [BNL-12390] 17 p2940 N68-29314

17 p2940 N68-29314 Nuclear data, optical nuclear model, reactivity, ther-odynamic properties and reaction kinetics of various ompounds in reactor physics and automatic neutron

[Al-AEC-12638] 17 p2917 N68-29353

Preparation, thermodynamic properties, and cold traps for ceramic Pu, PuC, and PuN nuclear fuels, and breeder reactor physics studies [LA-3880-MS] 17 p2918 N68-29410 prements in light

Reactor physics water lattices of ura [CNAEM-47] 18 p3117 N68-30575 thesis model for calculating reactor trans (KAPL-M-6742) 19 p3308 N68-30986

Fuel dynamics of thin wall ir reactor assembly d metallic uranium tubu-20 p3531 N68-32981

al for nuclear reactor operators on reactor physics topics (ORNL-TM-2034, V. 3) 20 p3531 N68-33078

Nuclear reactor physics experiments on energy spec-trum analysis, neutron diffusion length, and moderator temperature influence 21 p3739 N64-34270

REACTOR SAFETY

DEX

itron

4897

iron

5200

5211

5212

5215

eory

5219

240

tron to in

1993

037

Pu,

276

alue 272 942 ates 227

314 ous ron 353 old 410

ght 575 cu-981

178 270 NOVA computer system for reactor physics studies [KAPL-P-3431] 23 p4100 N68-36231

Monte Carlo techniques for checking analytical methods and analysis of basic nuclear data [KAPL-P-3432] 23 p4100 N68-36234 Moments method for analysis of flux distributions in [MIT-2344-11]

Chemical engineering, metallurgy, and physics in reactor development program
[ANL-7460] 23 p4129 N68-37048

23 p4129 N68-37048
Reactor physics studies in fuel elements, fission and criticality, cooling gases, core calculations, and related computer programs

[BNWL-775]

24 name Accounts

25 p4129 N68-37048

Electronic instrumentation developments for nuclear reactive technology [RISO-M-534] 01 p0092 N68-10454 Kinetic studies of heterogeneous water reactions in water cooled reactors [STL-372-50] 01 p0093 N68-10688

Maximum credible boron release from core surfaces of pressurized water reactor with chemical shim [EUR-3609.E] 01 p0095 N68-10862

Experiments with 6 GeV electron accelerator, improvements in accelerator and its facility, safety aspects, beam storage, and preparations for conference on high energy accelerators

(CEAL-1036) 01 p0047 N68-10938

SNAPTRAN program to provide nuclear safety data n rapid transient behavior of zirconium-hydride-03 p0372 N68-12202

Preoperational nonnuclear performance of sodium reactor experiment facility for power expansion pro gram system (NAA-SR-12408) 03 p0372 N68-12212

Various research activities for nuclear reactor development program [ANL-7357] 03 p0376 N68-12532

Environmental engineering and reactor sites for reduction of radiation hazards [NP-16793] 03 p0380 N68-12709

Critical mass and neutron decay experiments and alculations for reactor safety 05 p0690 N68-13954

Digital computer program for solving reactor kinetic equations, and for reactivity analyses [NAA-SR-12452, V. 1]

05 p0691 N68-14064 Literature survey on chemical aspects of reactor [HMI-B-64] 05 p0625 N68-14534

Liquid metal superheat and coolant flashing in sodi-um boiling and fast reactor safety [EURFNR-353] 05 p0695 N68-14589

Instrument development for radiation detector, reac-tor safety, fuel elements, neutron spectral measure-ments, and analog simulation (IDO-17234) 05 p0664 N68-14894

instrument component and systems development for reactor safety, nuclear technology, fuel elements, and health physics

05 p0664 N68-14896 Design features, safety instrumentation, and opera-tional characteristics of fast zero power reactor for in-vestigating neutron physics of large fast reactors [EUR-3676.E] 05 p0697 N68-14904

Protective coatings, and materials for radiation shielding of nuclear technology structures - epoxy surface layers, concrete construction materials, and polymer films

[FTD-HT-66-691] 06 p0873 N68-15409

Radiation shielding potential of polymer, and lacquer coatings in reactor contamination, and safety

06 p0874 N68-15410 Model for unidirectional diffusion in semi-infinite solids for penetration of iodine into protective coatings in nuclear reactor accidents [IN-1095] 07 p1029 N68-16581

Dynamic characteristics of electromagnetic coupling between magnet and absorber in fast releasing safety rod planned for DR 3 (RISO-M-627) 07 p1038 N68-17123 07 p1038 N68-17123

Fuel plate temperature measurements in engineering test reactor to determine limiting power (AFIT-TR-67-9) 89 p1205 N68-17637 Computer techniques for reliability engineering in (AHSB/S/-R-138)

09 pl309 N68-18779

Plutonium utilization in experimental boiling water reactor, liquid metal fast breeder reactors, reactor technology, advanced systems, and nuclear safety [ANL-7382] 09 p1376 N68-18893

MUNDO digital computer program for calculating accident radiation dotages near nuclear reactor [KFK-653] 09 p1376 N68-18944

Influence of cooling cycle design on dynamic behavior and safety of steam cooled fast reactors [KFK-655] 09 p1378 N68-19252

Steam cooling system parameter effects on dynamic behavior, and stability of fast breeder reactor [KFK-637] 09 p1379 N68-19480

Acrosol properties of vaporized plutonium dioxide and uranium dioxide in simulated accidental release of fast nuclear reactor fuels during power excursions [BNL-116/2] 10 p1554 N68-19640

Reactor design and development, interactions with nozzle and turbopump during integrated testing, and fabrication and safety efforts related to NERVA pro-INASA-TM-X-609771

11 m1743 N68-21402 Systems engineering, materials and component test-ing, and safety analysis for SNAP 23A power supply for relemetering oceanographic and meteorological buoy [WANL-3800-4] 12 p1908 N68-22718

Hybrid computer program for transient temperature calculations on transient reactor test facility /TREAT/fast reactor safety experiments [ANL-7374] 12 p1984 N68-22971

Parameters affecting installation of equipment for detecting jacket ruptures of reactor fuel elements [CEA-R-3342] 12 p1879 N68-22973

Radiation detectors in light vehicles for nuclear safety control at research facility [CEA-R-3324] 12 p1880 N68-23020

Operation and design safety criteria for radionuclide containment in fast flux test reactor [BNWL-607] 13 p2106 N68-23368

Rotating and stationary design concepts for secondary gamma shield for Fast Flux Test Facility /FFTF/ INAA-SR-MEMO-125861 13 p2108 N68-24337

Analysis of startup accident in nuclear reactors by nalog computers [CEA-R-3341] 14 p2294 N68-25252

Redundancy, operation, and error detection in linear safety systems for reactors [CEA-R-3335] 14 p2296 N68-25423 14 p2296 N68-25423

Analysis of pulsed fast reactor accidents and com-uter programs for simulating excursions EUR-39[5,E] 15 p2499 N68-25751 EUR-39 [5.E]

Data for fission product deposition on stainless steel and other surfaces under reactor accident conditions BMI-X-10222] 15 p2503 N68-26589 Reliability prediction for fast flux test facility reactor

15 p2504 N68-26717 Control rod calibrat

Control rod calibration curves for monitoring senon reactivity during reactor power build up [GAMD-7910] 16 p2706 N68-28085 Release and transport of fission products, adsorp-tion, oxidation, and corrusion in literature review on

reactor safety [HMI-B-68] 16 p2707 N68-28110 Radiological safety studies of space nuclear systems based on intact and dispersed reentry modes of SNAP units using Po-210, Pm-147, Pu-238, Sr-90, and Tm-171 - biological models [SC-CR-67-2729] 16 p2708 N68-28162

y, fission, and enrichment in loading of fast ctor /STARK/ within safety limits 17 p2915 N68-28958 Reactivity, fit thermal reactor [KFK-668]

Nuclear safety program studies on reactor control, radiation hazards, materials, component design, fission products, and fuel containment [ORNL-4228] 17 p2916 N68-28998

Radiochemistry research on molten salt reactors, aqueous reactors and desalination, gas cooled reactors, and nuclear safety [ORNL-4229] 17 p2844 N68-29309

Progress in thermodynamics, chemical analysis, succlear fuel fission, cross sections, and burnup, electrolytic cells, reactor safety, and studies on uranium and plutonium are reported [ANL-7375]

17 p2845 N68-29384 17 p2845 N68-29355

se processor, and proportional ctor control system 18 p3118 N68-30676

Fast breeder reactor optimization methods, reactor safety, and various aspects of fast breeder reactor ther-mal and hydraulic analysis [RT/INO/68/7-PRV-R-767/2]

19 p3310 N68-31463

Indexed bibliography of current nuclear safety litera-

ORNL-NSIC-441 19 p3313 N68-32021 Authority Health and Safety Branch plant fault code and punched card system for recording and storing data on UKAEA plants and nuclear reactors (AHSB/S-R-127) 19 p3314 Ne8-32104 lear reactives 19 p3314 N68-32104

Description and experimental results of containment system for radioactive fusion products in case of reac-[BNWL-SA-1863]20 p3457 N68-33030

Fundamental concepts for reliable and safe nuclear reactor instrumentation [RISO-M-722] 21 p3721 N68.33497

Digital program for reactor blowdown and power ex-cursion analysis (IDO-17263) 22 p3911 N68-35727

Reactor operator training handbook on radiation safety and control [ORNL-TM-2034, V. 2]

23 p4102 N68-36806 Shock tube blowdown tests to determine behavior of decompression of nuclear reactor coolant [ITTRI-578-P-21-35] 23 p4104 N68-37118

Operations history and reactor safety systems for High Flux isotope Reactor [ORNL-TM-2295] 24 p4294 N68-37769 Potential metal-water reactions in power reactors with light-water cooling systems [ORNL-NSIC-23] 24 p4295 N68-37884

Site evaluation of air polluta dent using measured meteo lity of occurrence as paramet nts following reactor ac-rology data with proba-24 p4255 N68-38378

Savannah River Laboratory met intrumentation, and operation orological program. 24 p4284 N68-38379

Wind speed, wind direction, and stability measure-ments used in evaluating radiation hazards associated with reactor accident 24 p4284 N68-38381

REACTOR TECHNOLOGY

Engineering developments in nuclear reactor and rocket programs
[ANL-7290] 01 p0090 N68-10440 01 p0090 N68-10440 Garigliano Nuclear Power Plant operations sun

01 p0091 N68-10452 IEUR-3489.II reactor technology (RISO-M-534) 01 ±0092 N68-10454

Fuel analyses and production engineering measures or nuclear reactors 01 p0094 N68-10759

Theoretical and experim ental nuclear reaction stu-RLO-1062-6751 01 p0113 N68-10760

Nuclear research and reactor technology, ATR, ETR, and MTR engineering experiments, and irradia-tion test program [IN-1083] 01 p0095 N68-10795

Proceedings of Symposi Technology for Ceramists [NBS-MISC.-PUBL.-285] n on Nuclear Science and

01 p0081 N68-10801 Technical feasibility of boiling water reactor nuclear steam supply systems with capacities up to 10,000 MW: (GECR-5155) 01 p0096 N68-10896 01 p0096 N68-10896

and construction of Engineering developments nuclear power plant in Nethert (EUR-3617.N) 01 p0097 N68-10951

Computer program for com tion in alab or circular reactor [ANL-7326] 02 p0236 N68-11023 Interaction among cores in cluster of nuclear rocket actors and resulting static and kinetic behavior analy-

03 p0372 N68-12244 (LA-3494)

Development and operation (WAPD-MRP-1201 03 p0372 N68-12259

Nuclear reactor research, and engineering developments in reactor technology
[ANL-7286] 03 p0373 NoV-12432

In-pile corrosion of nuclear materials [EURAEC-1825] 03 p0375 N68-12472 ation and fuels prepara-Nuclear power reactor of tion and testing [EUR-3380.F]

03 p0375 N68-12475 Thermalization theory, computer programs for nuclear reactor technologies, and reactor experimental

BNWL-400) 03 p0393 N68-12528

SU

10

tin [C

[A

(E

ch (E

an (F

REA

ele [R

ele tra [N

REA

REA

CON

READERS Various research activities for nuclear reactor development program [ANL-7357] 03 p0376 N68-12532 Vaporization of thorium oxides, carbides, silicides, permanides, nitrides, phosphides, and sulfides with ap-LA-TR-67-51) 03 p0316 N68-12587 Technical work in reactor projects, and reactor en-gineering research and development programs [ANL-7279] 03 p0382 N68-12750 Two reactivity meters for fast reacto 04 p0538 N68-13051 Ultrasonic instrumentation for m [NYO-3622-11] nuclear applications 04 p0509 N68-13419 Stability experiments for boil ng water reactors 04 p0541 N68-13866 [QR-9] Reactor technology and nuc gineering test reactor and advan [IN-1117] clear research using enced test reactor 05 p0691 N68-14012 Loss-of-fluid test facility reactor experimental and theoretical physics work - STEP project [IDO-17240] 05 p0692 N68-14193 Microwave techniques and instrumentation for mea-suring physical properties of nuclear reactors [BNWL-SA-1314] 05 p0660 N68-14196 Wide-range counting-Campbelling neutron flux de-ction system [ANL-7224] 05 p0660 N68-14241 Engineering and metallurgical evaluation of Yankee core spent fuel [WCAP-6084] 05 p0695 N68-14594 Development state of neutribeam tubes in nuclear reactors [AERE-TRANS-1074] tron guides suitable for 05 p0640 N68-14761 Development of transdu-sure reactor characteristics cers and detectors to mea-05 p0664 N68-14895 Critical experiments analysis of tion reactors containing large-dian [NASA-TN-D-4270] 0 alysis of uranyl fluoride solu-rge-diameter voided tubes 06 p0872 N68-15197 Protective coatings, and materials for radiation shielding of nuclear technology structures - spoxy surface layers, concrete construction materials, and polymer films.

[FTD-HT-66-691] 06 p0873 N68-15409 Reactor development program highlights [ANL-7342] 06 p0875 N68-15765 Critical experiments on single fuel element to determine nuclear parameters of reactor lattices [MIT-2344-10] 07 p1024 N68-16195 tor lattices 07 p1024 N68-16195 clear reactor construction, including heavy water-gas reactors [WAPD-TRANS-76] 07 p1002 N68-16363 Chemical technology research - fuel recovery processes, waste calcination, and reactor technology (IN-1087) 07 p1028 N68-16465 Post irradiation data for experimental fuel assemblies n Halden boiling water reactor [AE-306] 07 p1031 N68-16875 [AE-306] Space and energy distribution of thermal neutrons in cylindrical heterogeneous reactor cell [UJV-1836] 07 p1032 N68-16883 Compilation of abstracts from conference proceedings on fast and thermal reactors [CONF-670431] 08 p1203 N68-17320 Soviet research on BR-5 reactor operation, inter-mediate neutron beam converter, isotope formation by neutron irradiation, and asymptotic approximation of neutron transport [JPRS-44390] 08 p1204 N68-17535 Design, evaluation, improvements, and analytical techniques for reactor shielding standard [NASA-CR-93368] 08 p1207 N68-18184 [NASA-CR-9.308] us p1.20 received Plutonium utilization in experimental holling water reactor. liquid metal fast breeder reactors, reactor technology, advanced systems, and nuclear safety [ANL-782] 09 p1376 N68-18893 Fuel element optimization for core of fast thermal [KFK-668] 09 p1377 N68-19013 Nuclear reactor and fuel processing technology, values of basic flusion parameters, and waste disposal demonstration runs 09 p1379 N68-19323

Reactor theory and technology of German fast

Reactor research and development [ANL-7391] 10 p1554 N68-19552

09 p1379 N68-19431

ctor elementary cells 10 p1557 N68-20435

Prototype, portable pump and cleanup system for motor driven, rotating shield plugs [ANL-7379] 11 p1741 N68-21166 ANU-73791
Design and technological development of zero power eactors and Experimental Breeder Reactor 2, reactor hystics experiments, and nuclear safety data
ANL-73991
11 p1 742 N68-21234 Metallurgical aspects of stress relief annealing of uclear reactor pressure vessels nuclear reactor pre (EURAEC-1762) 11 p1743 N68-21631 Arrangement and operation of optical equipment for remote macroscopic observation of radioactive samples in reactor chamber [IBI-470/XIV/P3] 12 p1903 N68-21999 12 p1903 N68-21999 Technical research and development in reactor fuel 12 p1905 N68-22527 Development technology for reactor fuels and 12 p1906 N68-22537 [BNWL-473] Computer programs, fuel elements, and theoretical studies for reactor technology [BNWL-534] 12 p1906 N68-22538 Development of fast breeder reactors, biological pest control, and progress in cybernetics technology in U.S.S.R. 12 p1985 N68-22572 Design, fabrication, and evaluation of molybdenum clad, high temperature fuel pinn used to provide ir-radiation data for full length reactor fuel pin design [NASA-CR-72387] 2 p1907 N68-22587 Nuclear fuel requirements and costs of reactors in ermany/supplement/ Germany /supp [KFK-466] 12 p1907 N68-22608 Nuclear data file for nuclear reactor core neutronics and shielding calculations [LA-3801] 12 p1909 N68-22728 Reactor physics and technology /survey/ [KR-116] 12 p1911 N68-22839 Specifications for fabrication of plutonium bearing zero power reactor fuel elements [ANL-7313] 12 p1911 N68-22855 Cermet faels for reduced fuel element swelling and secific mass increase of reflector controlled reactor [UCID-15268] 12 p1911 N68-22909 Economics and potentials of CANDU reactors [AECL-2795] 12 p1913 N68-23007 Developments in Canadian organic cooled heavy ater moderated pressure tube reactor technology AECL-2943] 12 p1913 N68-23008 [AECL-2943] Relative displacement damage rates in differing reactor types 13 p2104 N68-23062 Repetitively pulsed, small plutonium booster reactor design [IN-1149] 13 p2105 N68-23211 Technological improvements for closed loop system of fast flux test reactor [BNWL-666] 13 p2106 N68-23364 [BNWL-666] 13 p2100 Proc-23304 Effects of heat flow through reactor channels on operating conditions that cause critical heat flux [BAW-3238-13] 13 p2169 N68-23665 Multigroup diffusion theory for solution of transport theory problem [TRG-1568/R/] 13 p2170 N68-23739 Point kernel shielding code for parametric surveys on space power reactor shielding designs [UCID-15284] 14 p2290 N68-24590 clear data on experimental and calculated m (BNWL-SA-1485) P 14 p2290 N68-24599 Soviet nuclear research reactor technology, and JPRS-45331 14 p2290 N68-24602 Stability tests on boiling water reactors [EURAEC-1964] 14 p2294 N68-25173 Calibration techniques and data handling equipment for instrumented fuel assemblies in boiling water reactors [HPR-79] 14 p2257 N68-25175 Nuclear reactor design, operation, and technology using MIT test reactor and related bibliography [MITNE-91] 15 p2504 N68-26693 Liquid metal cooled reactor development studies [ANL-7419] 16 p2703 N68-27881 Sodium cooled reactors fast ceramic reactor [GEAP-5541] 16 p2704 N68-28011 of plutonium and neptu-reactor technology 16 p2707 N68-28120

Reactor research and development programs [ANL-7427] 16 p2711 N68-28321 Crystal structure studies pos ble in high flux reactor 17 p2916 N68-28981 TBP solvent, solvent extraction, leaching of ceramics and filtering in development of French breeder reac-17 p2916 N68-29114 Crystal structure, Gibbs free energy, and vapor com-position and pressure in vaporization of binary uranium compounds for reactor technology [ANL-TRANS-584] 17 p2842 N68-29117 Developments in the areas of reactor technology, coding development, thermal and fast nuclear reactors [BNWL-634] 17 p2941 N68-29370 Specific power distribution of uranium oxide and uranium oxide boron oxide mixture friel rods in RITMO nuclear reactor [CNEN-RT/FI/68/13] 18 p3114 N68-30035 18 p3114 N68-30055 Research projects on power reactor and fast breeder reactor fuel processing, thorium fuel cycle, chemical engineering, mohen salt reactors, and sol-gel process development (ORNI-4204) 18 p3191 N68-30167 18 p3191 N68-30167 Experimental information from dilute plutonium fueled critical assemblies used to improve fast reactor design data and calculation methods [GEAP-5271] 18 p3118 N68-30685 [AN-R] research reactor /description/ [IAN-R-1-2] 19 p3313 N68-32083 Summary information on various nuclear research projects and test reactors, neutron irradiation, effects, and criticality and reactivity studies [BNWL-739] 19 p3314 N68-32101 Oxidation experiments with oxygen-argon gas mixture on organic reactor coolants [AI-AEC-MEMO-12688] 21 p3652 N68-34479 Hydraulic driven control and shut down system for water and steam cooled nuclear reactors [KFK-665] 21 p3726 N68-34562 Techniques for fabrication of nuclear fuel elements for high flux isotope reactor and advanced test reactors [ORNL-TM-2197] 21 p3727 N68-34613 Flywheel-augmented flow coastdown for unclad metal-fueled fast breeder reactor [ORNL-TM-2132] 21 p3727 N68-34617 Design, fabrication, and testing of experimental boiling water, liquid metal fast breeder, zero power, zero power plutonium, and experimental breeder reactors (ANL-7457) 21 a3728 N63-34776 ntal breeder reactors 21 p3728 N68-34709 Functional description of high flux isotope reactor facility [ORNL-3572, REV. 2, V. 1B] 21 p3728 N68-34755 earch and development 21 p3728 N68-34767 Summary report on nuclear engineering and evalua-tion studies [BNL-50082] 23 p4103 N68-36895 Chemical engineering, metallurgy, and physics in reactor development program [ANL-7460] 23 p4129 N68-37048 Summarized progress in development of computer equipment and technology for application in nuclear 23 p4039 N68-37396 RISO-M-7291 Supercritical water cooled inpile fuel testing, col-apsed clad fuel elements in reactor environment, fuel feeign, and loop performance operating data analysis (WCAP-3374-8) 24 p4295 No8-37821 READERS Digital techniques for introducing information into 02 p0185 N68-11293 Design criteria for multifont print-readers [F-6161-1] 02 p0171 N68-11541 lation reader with shift register 04 p0482 N68-13218 Automatic correla [FTD-HT-67-157] Control of reading machine for blind persons, digital near time-variant filtering, and Gaussian random field construction from contour sampling npling 04 p0484 N68-13473 Reader design and operation problems, and mea-surement errors in lithium fluoride thermoluminescent dosimetry 04 p0511 N68-13703 Combined read/write and read only memory hard-ware for position classification computers [C7-1940/501] 05 p0618 N68-14047 Print reader based on optical correlation principle [FTD-MT-66-117] 06 p0812 N68-15782

breeder reactors [KFK-634]

Neutron thermalizat {REPT.-821/9A/PR}

8321

ctor 1981

114

nom-

117

ogy,

370

055

167

ctor

685

083

arch

101

nix.

for

562

613

had

617

oil-

755

167

un-

195

148 ter

96

93

41

18

73

100

03

rd-

47

82

Reading machine system developed for character secognition, pattern perception, and auditory displays [NASA-CR-77888] 09 p1290 N68-19235 Automatic input of graphic information into computers and automatic read (FTD-HT-23-782-67) 11 p1671 N68-21612 Threshold logic multifont character recognition 12 p1846 N68-22215 Semi-automated thermoreader, and principal feature loading and heating with hot (UCRL-70860) noluminescent dosimeters of readout after manu ogen gas 12 pl880 N68-23014 ruction, and circuits of converters of its into electrical signals 1] 16 p2629 N68-27347 Theory, constructions and [FTD-MT-65-391] Technique for converting key punch into punched card read for use in digital computer systems [AFRRI-TN67-4] 18 p3039 N68-29684 Digital mass spectrographic plate reader to reduce me required for spark source analyses time require (GEPP-32) 19 p3275 N68-31019 Visual perception and image identification by read-(FTD-MT-66-158) 19 p3216 N68-31496 Optical scanner color separation system
[AD-672078] 21 p3665 N68-34421 Learning contro [ECOM-0066-1] ol systems and pattern secognition 22 p3851 N68-35404 Context analysis for de character-classification erro [ECOM-01901-31] on and correction of 22 p3845 N68-35883 Problem of patter [FTD-HT-67-444] 22 p3845 N68-35970 Standards used in readi and pattern recognition [FTD-HT-23-504-67] g machine cross correlation 23 p4026 N68-36482 Device for reading Weedram magnetic tapes into El-liott 503 computer and for controlling digital incre-(RPE-TR-67/15) 23 p4029 N68-37060 Cartographic viewer utilization analysis by simula-(AD-674759) 24 p4251 N68-37940 Statistical analysis of reliability of automatic readers using correlation method of character recognition [FTD-HT-23-963-67] 24 p4234 N68-38425 READING Optimum criteria for rea-tical correlation principles n criteria for reading automata, based on op-09 p1310 N68-18804 Comparing behind lens meter readings and incident light meter readings in producing 35 millimeter color sides for technical training clauses [AMRL-TR-66-112] 11 p1697 N68-21160 Closed circuit televisio electrical indicating mete [REPT.-313] tem for reading precision 14 p2256 N68-24819 IBM 1500 instructional system for computer assisted 21 p3644 N68-34549 Performance comparison of electromechanical and ectroluminescent displays in closed loop manual tracking task and read [NASA-TN-D-4841] 23 p4002 N68-36457 READING MACHINES U READERS READOUT scence readout instrument for mea-

Thermolumines aring small doses 04 p0511 N68-13697 64 inch scattering chamber digital readout and control system for automatic processing of angle and experimental data
[NASA-TN-D-4324]

05 p0657 N68-14018 Analog differential readout methods for improving accuracy of data on voltametric behavior of systems, and applications to stationary electrode polarography 17 p2837 Nob-28445

Real gas effects in time dependent blunt body and cone at angle of attack [TR-664] 02 a0192 NAS-11354 Form of equation of state of real gas [NRC-TT-1282] 07 p0985 N68-16593 Real gas wedge-induced laminar separation on cooled blunt flat plate at hypersonic speed [NASA-TN-D-4320] 08 p1106 N68-17899 ar separation on Design characteristics of electrostatic probe for (NAL-TN-5) 13 p2126 N68-23719

Numerical analysis of real gas effects in depremuriza-tion of air storage cylinder [REPT.-2693] 16 p2641 N68-27097 Theoretical performance of hypervelocity wind tun-Computer program in FORTRAN 4 for calculating hock tube performance for arbitrary equilibrium real NASA-TN-D-4802] REAL NUMBERS NT INTEGERS Theory of subjective inferential probability with real umbers assigned to elements of arbitrary Boolean al-REAL TIME OPERATION Real time sampling of zir mospheric diffusion studies [BNWL-SA-1407] Prelaunch real time impact prediction system for erobee 350 rocket Algorithm for digital spectral analysis in real time [NASA-CR-91530] 04 p0489 N68-13804 System for switching circuits between on line and off ne switching computers at NASA communications etwork /NASCOM/ primary and remote switching (NASA-TM-X-63059) Ground control and m Two all-past filters with linear group delay for real Real time technique for me perature gases and spectrosco perature measurement of hot o [NASA-CR-86055] Computer design for real time control of tracking Time sharing real time input output executive pro-gram for PDP-1 computer graphic data display system -[AFCRL-68-01311 Real time meteorological balloon tracking data evaluation for wind measurements in upper at-(ECOM-5184)

15 p2497 N68-26580 Real time environmental testing of Applications Technology Satellite, and characteristics of acoustic and vacuum systems 16 p2788 N68-28000 Input output control system for real-time computer application to SDS 930 [CEA-R-3471] 18 p3039 N68-30007 Real time computer complex for Gemini project, and Mission Operational Program /MOP/ system used dur-ing Gemini 12 [NASA-CR-92180] 18 p3170 N68-30096 Dynamic characteristics of computer programs re-lated to multiplex program mode of operation [P-3661] 20 p3440 N68-32245

22 p3852 N68-35301

22 p3853 N68-35466

10 p1545 N68-19687

02 p0213 N68-11481

04 p0584 N68-13603

04 p0485 N68-13878

oring support for Gemini

05 p0741 N68-14943

07 p0979 N68-16990 pic techniques for tem-esium seeded hydrogen 14 p2322 N68-24571

15 p2431 N68-25785

15 p2432 N68-26371

se sulfide particulates in at-

ical analysis 20 p3436 N68-32630 stor for automatic calcu-of acoustic signals 20 p3439 N68-33344

Compensation for dynam errors in real time orbit dete [NASA-CR-96578] ic and measurement model rmination systems 21 p3721 N68-33828

Computer program plan servation schedules and co model errors in three-dimer [NASA-CR-96545] n for simulating real time ob-combined effects of dynamic ensional satellite motion 21 p3663 N68-33830 Real time sampling beam position monitor for linear

21 p3693 N68-34371 TI A.DC-94311 General algorithmic opecially organized cell crete Kalman filters (REPT.-603-F1-0468) cation of highly parallel, sachine to embody dis-

22 p3843 N68-35580 Flow charts for recogniz on-line in real time operatio [NASA-CR-86108] hand printed characters 24 p4231 N68-37582

Real time sampler for measurement of instantaneous ammapheric concentrations of zinc millide particulates in diffusion studies 24 p4286 N68-38395

REAL VARIABLES NT ASYMPTOTES

ASYMPTOTIC SERIES
BESSEL FUNCTIONS
BETHE-SALPETER EQUATION
BIHARMONIC EQUATIONS
BINARY INTEGRATION
BILASIUS EQUATION
BURGER EQUATION
CALCULUS OF VARIATIONS
CAUCHY-RIEMANN EQUATIONS
CAUCHY-RIEMANN EQUATIONS
CAUCHY-RIEMANN EQUATIONS
COLLINEARITY
COMPOSITE FUNCTIONS
CONTINUITY [MATHEMATICS]
COPLANABITY
CUBIC EQUATIONS
DIFFERENTIAL EQUATION
BINTERN EQUATIONS
ELIPTIC DIFFERENTIAL EQUATION
EINSTEIN EQUATIONS
ELIPTIC DIFFERENTIAL EQUATION
EXISTENCE THEOREMS
EXTREMUM VALUES
FALKNER-SKAN EQUATION
FOURTER SERIES
FUNCTIONAL INTEGRATION
GAUSS EQUATION
GAUSS EQUATION
HANKEL FUNCTIONS
HELMHOLTZ VORTICTY EQUATION
HANKEL FUNCTIONS
HYPERPLANES
LAMPERICATE THEOREMS
LAMPERICATE THEOREM
LIAPUNOV FUNCTIONS
LAMPERICATE THEOREM
LIAPUNOV FUNCTIONS
LAMPERICATIONS
LAMPERICATIONS
LEBESGET THEOREM
LIAPUNOV FUNCTIONS
LAMPERICATIONS
LIPSCHITZ CONDITION
MINIMA MACLAURIN SERIES
MAXIMA
MERSURE AND INTEGRATION
MINIMA
MODMER AMPERS FOLIATION ASYMPTOTIC SERIES BESSEL FUNCTIONS EASURE AND INTEGRATION MEASURE AND INTEGRATION
MINIMA
MONGE-AMPERE EQUATION
NEUMANN PROBLEM
NONLINEAR EQUATIONS
NUMERICAL INTEGRATION
PADE APPROXIMATION
PARABOLIC DIFFERENTIAL EQUATIONS
PARTIAL DIFFERENTIAL EQUATIONS
PERIODIC FUNCTIONS
POISSON EQUATION
POWER SERIES NININI POISSON EQUATION
FOWER SERIES
PRONY SERIES
QUADRATIC EQUATIONS
RUNGE-KUTTA METHOD
SERIES [MATHEMATICS]
STIELTIES INTEGRAL
STURM-LIOUVILLE THEORY TAYLOR SERIES
TRIGONOMETRIC FUNCTIONS
VECTOR ANALYSIS
VLASOV EQUATIONS Line Miller (MIR)

VORTICITY
VORTICITY EQUATIONS
WEIGHTING FUNCTIONS
WHITTAKER FUNCTIONS One dimensional search routine for function of one ariable and approximation of function with cubic [NASA-CR-65994] 09 p1363 N68-18823 Fractional different unctions 12 p1896 N68-21882

Real variables of forward sca Wick limit for seutron elastic sc [LA-DC-9179] mering amplitude fro attering cross section 14 p2308 N68-2486 d and third boundary value estial operator in domain

Computer program tion of ratio of two bi joint neutron fluxes [TR/FI/68/10] ating fractional varia-tionals of real and ad-17 p2860 N68-29480 stion of Hermite interpola-

Generalization and applica-tion to nonconsecutive derive [TM-3734] 24 p4276 N68-37693 EATTACHED FLOW

veory as substitude to sable to fluidics 20 p3466 N68-33284 supersonic bear flow theo-Wall resttachment theory drodynamic theory applicable RR-9271 Survey and eval NASA-CR-97129] (23 p4042 N66-36011

755 EU 1912

Si

Par C

Transient behavior of switching jet in model wall attachment type of bistable fluid element 23 p4043 N68-36051

REATTACHMENT U ATTACHMENT

RECEIVERS
NT LINEAR RECEIVERS
NT LOGARITHMIC RECEIVERS
NT RADIOTELEPHONES
NT SUPERHETERODYNE RECEIVERS
NT TELEVISION RECEIVERS

Receiver techniques and detectors for use at millimeter and submillimeter wavelengths, and excitation cross sections for argon II, krypton II, and neon II gas lasers [NASA-CR-90040] 01 p0072 No8-10399
Portable multichannel frequency modulation data requisition expenses.

acquisition system (SCL-TN-67-33)

03 p0323 N68-12366 Automated multifunctional receiver for space tracking and data acquisition network, manned space flight network, and deep space network [NASA-TM-X-63057] O4 p0480 N68-13560

Diversity receiver carrier frequency reproduction-method for providing Doppler extractor with frequency and phase information similar to received signal [NASA-TM-X-63069] 04 90480 N68-13879

Ceramic piezoelectric sound receiver research [FTD-MT-65-455] 06 p0881 N68-15830

Performance of receiver structures in synchronous binary multiplex communication system 07 p0966 N68-16982

Receiver noise figure in presence of hot plasma sheath of reentering space vehicle [SC-RR-67-2964] 11 p1660 N68-21033

Mathematical analysis of phase detection error in sultiple sensor correlation receivers with high signal to

[REPT.-6400-153-T] 15 p2427 N68-26316 Reception of automatic transmitted pictures from eather satellites using cathode ray tube
17 p2854 N68-29420

Structure of combination modulation tracking loop receiver 21 p3657 N68-34007

Ultrasonic delay lines used in phase alternation on line color television receivers for Europe 23 p4023 N68-37295

Development and fabrication of monolithic integrated microwave receiver [NASA-CR-86109] 24 p4235 N68-37902

RECEIVING SYSTEMS RECEIVERS

RECEPTACLES [CONTAINERS]
U CONTAINERS

NT PROPRIOCEPTORS

Electrophysiological activity of locust sensory mechanisms associated with maintenance of flight [NMS-TRANS-2036] 01 p0013 N68-10818 Spectral sensitivities of receptor systems in human color vision

15 p2401 N68-26321 Mechanisms of labyrinth and receptors in control of postural muscles

17 p2822 N68-29138 Efferent innervation of vestibular receptors based on study of cochlear receptors

17 p2823 N68-29142

Supersonic flow past bodies of revolution with annular recesses for determination of length/depth ratio of recesses at various Mach and Reynolds numbers [TG-230-T334] 06 p0826 N68-15489

U PISTON ENGINES

RECIPROCATION

Disruption of reciprocity principle during daytime ropagation of superiong radio waves around earth NASA-CR-94794) 14 p2253 N68-25644 propagation of super [NASA-CR-94794]

U CIRCULATION

RECIRCULATIVE FLUID FLOW

Convective heat transfer in cylindrical chambers with gas recirculation

02 p0290 N68-11745

RECLAMATION U MATERIALS RECOVERY U WATER RECLAMATION

RECOGNITION
NT CHARACTER RECOGNITION
NT GRAPHOLOGY
NT PATTERN RECOGNITION

NT SPEECH RECOGNITION NT TARGET RECOGNITION

Human response, detection, and recognition of auditory stimuli

12 p1827 N68-21876 RECOIL ATOMS

Nuclear recoil ranges and excitation functions for pha particle reactions alpha particle [UR-3591-5]

03 p0394 N68-12618 Recoil technique for reactions of hot tritium atoms with methane and hydrogen

18 p3128 N68-29779 Chemical effects of isomeric radioactive decay, recoil reactions and hot atoms, for radiochemical analysis of nuclear transformation [BNL-12361] 18 p3030 N68-30711

Reaction kinetics and influention of recoil C atoms with alkan nce of oxygen on reac-19 p3220 N68-30882

RECOIL PROTONS

Neutron-proton relativistic elastic scattering formu-a adapted for recoil proton spectrometers (ASL-186) 07 p1045 N68-16578 HASL-186]

Spectrum analysis for determining neutron flux in fast nuclear reactors and proton-recoil spectrometer ment of neutron energy spectrum 08 p1203 N68-17324 (IN-11431

Angular distributions, recoil proton polarizations, and total cross sections for pi-nucleon elastic scattering

ICEA-R-34011 14 p2313 N60-25132

lon loss by electron scattering in compressed elec-tron rings of linear accelerators [SLAC-PUB-386] 15 p2522 N68-26557

FORTRAN computer code and associated subrou-tines for analyzing experimental recoil proton spectrum obtained from spherical gas filled proportional counter [AWRE-0.968] 17 p.2914 N68-28469 Proton recoil spectrometer to measure water cooled

20 p3530 N68-32684 Design of fast neutron counters using proton recoil diators [BARC-330] 21 p3689 N68-34057

RECOILINGS

Predicted fractions of recoil fission products released om solid surfaces for different diffusion coefficients DRO-3508-2] 05 p0691 N68-14013 ORO-3508-21

Nuclear chemistry research projects on recoils from nuclear reactions [NYO-2771-25] 13 p2118 N68-23671

Recoilless fraction measurements and Monaconfects of iron 57 in iron at high pressures fects of iron 57 in iron at high pressures 13 p2136 N68-23745

Absorption spectra, recoiling nuclei, and use of ossbaser effect after nuclear interactions in iron to udy polarization/spin alignment/ 17 p2953 N68-28437

Recoil reactions of atomic carbon, and carbon 11 coil product yield dependence on radiation dose and 17 p2845 N68-29354

Space dependent fast fission ratios, and measure-ents of fission fragment recoil ranges in aluminum 24 p4292 N68-37437

RECOMBINATION COEFFICIENT

Rate coefficient derived for derived for dielectronic combination using quantum theory of resonance col-[NASA-CR-93359] 08 p1221 N68-18125

Electron transfer and ion recombination from

le vapor 15 p2412 N68-26161 lon recombination rates in weakly ionized lead iodide and bromide and thallium iodide systems lodide systems 15 p2413 N68-26190

Two methods for evaluating ionization rate and combination coefficients of E region 19 p3268 N68-31046

Surface recombination coefficients of hydrogen atoms in zinc sulfide and metal oxides [M-7206] 20 p3417 N68-32446

RECOMBINATION REACTIONS
INT ATOMIC RECOMBINATION
INT ELECTRON FECOMBINATION
INT ELECTRON RECOMBINATION
INT HYDROGEN RECOMBINATIONS

NT ION RECOMBINATION NT OXYGEN RECOMBINATION NT RADIATIVE RECOMBINATION

Three body ionic recombination rate calculated for 03 p0391 N68-12487 lie radiolysis and flash photolysis, precursor of cular hydrogen in radiolysis of water, germinate mbination in photochemistry, and radiation and istry of crystals 05 p0619 N68-14144

ent installation and experimental work in to determine radiation induced defects in al-Equipment installation and experimental work in program to determine radiation induced defects in al-kali halides, and their role in recombination processes [NYO-3842-1] 07 p1065 N68-16404

Calculation of recombination rate constants of atomic molecules according to Mach number of flow supersonic nozzle exit

07 p0987 N68-16858 Height distribution analysis for kinetic molecular nization-recombination processes in F 2 region dur-g solar activities

[NASA-CR-93284] 08 p1234 N68-18175 Recombination spectrum of stars and planetary 09 p1418 N68-18648

Shock tube experiments on expansion and recombination of high temperature gases
[AASU-272] 09 p1451 N68-19201

Nonradiative recombination processes in semicon-[AD-667743] 13 p2138 N68-24021

Calculating radiative energy transfer in continuous apectrum taking account of frequency absorption coefficient in presence of reabsorption

14 p.2373 N68-25144 14 p2373 N68-25144

Reaction rates and energy distributions during mization and recombination processes in optically

thin plasmas [PUBL.-68-1] 16 p2733 N68-27060 Kinetic theory, reco m reactions, and relaxa-

tion time for weakly ionized heliu [AFCRL-68-0237] 18 p3146 N68-30768 Reduction reactions, chemical recombination, and radiation effects in hydrated and anhydrous crystals ammonium, potassium, and sodium hexachlorides of ammonium, potassis containing iridium [LFEN-78/GAMMA/] 19 p3234 N68-32097

Theoretical kinetics of thermal reactions in gas phase unimolecular reactions, diatomic molecule dissocia-tions, and three body recombinations /approximation methods/ 22 p3822 N68-35168

Recombination rate constants of diatomic gases cal-culated from Mach number of gas discharging from su-FTD-HT-23-692-67]

23 p4050 N68-36897 Microwave cavity method to study recombination in mized media following pulse radiolysis 24 p4322 N68-37446 [BNL-12552]

Hydrogen persulfide milli sectrum measurements meter wave rotational

24 p4305 N68-37466

lonospheric propagation, structure, and variations and influences of solar radiation, Chapman layer, and 24 p4250 N68-37827

RECOMMENDATIONS

Recommendations for increasing efficiency and spabilities of federal laboratories 23 p4192 N68-37379

RECOMPRESSION U COMPRESSING

RECONNAISSANCE

NT AERIAL RECONNAISSANCE

NT PHOTORECONNAISSANCE

Infrared technology in space - o systems, detection, reconnaissance, anti-

and quantum generator development [FTD-MT-65-46] 03 p0384 N68-12419

RECONNAISSANCE AIRCRAFT U MIRAGE 3 AIRCRAFT U P-1127 AIRCRAFT U TSR-2 AIRCRAFT U U-2 AIRCRAFT

WEATHER RECONNAISSANCE AIRCRAFT RECONSTRUCTION
NT WAVE FRONT RECONSTRUCTION

Diversity receiver carrier frequency reproduction-method for providing Doppler extractor with frequency and phase information similar to received signal [NASA-TM-X-63069] 04 p0480 N68-13879

Reconstructing polyhedrons from perspective pro-15 p2491 N68-25943 [NASA-CR-94932]

Redesign and construction of laser Raman spec-[TR-4/29/] 18 p3085 N68-30548

RECORDING NT DATA RECORDING

X

44

of

58

lar

75

ITY

48

nı

21

ng lly

50

58

nd als es

17

18 d-

17

in

16

al

6

7

d

0

rials test data for plane

10 p1459 N68-20317

10 p1459 N68-20319

es during recrystal

ium during heat

24 p4271 N68-37513

is for recta

NT DATA SMOOTHING NT MAGNETIC RECORDING NT PHOTOGRAPHIC RECORDING Methods of recording optical spectra using image in (AERE-R-5112) 06 p0843 N68-15154 Fourier series digital computer simulation of tape recording process - signal detection in prescence of white Gaussian noise [NASA-CR-92376] 06 p0807 N68-15347 RECORDING HEADS OSO recording head and tape studies [NASA-CR-96890] 22 p3875 N68-35144 [NASA-CR-96890] 22 p3875

BECORDING INSTRUMENTS
NT BATHYTHERMOGRAPHS
NT FLIGHT LOAD RECORDERS
NT FLIGHT RECORDERS
NT OSCILLOGRAPHS
NT PLOTTERS
NT PRESSURE RECORDERS
NT RADIOMETEOROGRAPHS
NT SEISMOGRAPHS
NT WEATHER DATA RECORDERS
NT WEATHER DATA RECORDERS
NT WISTLER RECORDERS
NT WISTLER RECORDERS
NT Y VISITLER RECORDE tallation and operation of recording Fabry- Perot [BARC-290] 03 p0343 N68-12290 Light actuated trigger generator for synchronizing recorder with mechanical device [SCL-TN-67-42] 03 p0329 N68-12425 Photographic compass inclinometer design for recording orientation of deep sea sampling devices [MPL-TM-149] 04 p0509 N68-13423 Device for recording pres with simultaneous sampling decomposition for mass spects [NASA-TT-F-11460] ressures of gases liberated ag of gaseous products of ctrometric analysis 05 p0622 N68-14267 cording time dependent spec-conversion 05 p0662 N68-14699 Digital technique for re-tra by time to pulse-height [AFOSR-67-2784] nt of small deviations from second derivative of passive tage characteristics 06 p0880 N68-15634 Device for measure amic law by recordinately binole current [AFOSR-67-2785] Pneumocardioph and respiration rate [FTD-HT-67-484] vice for continuous pulse 07 p0950 N68-16676 Automatic con frequency depende of Bode diagram arrangement for recording 09 p1366 N68-19447 Aircraft portable temperature recorder to take horizontal and vertical profiles of air temperature [IERTM-ATDL-6] 09 pl346 N68-19464 Solar magnetograph observation of photospheric brightness, velocity, and magnetic fields [NASA-CR-94225] 12 p1964 N68-21896 Quantitative method of ninescence glow curve recording thermoluminescence glow cu [BNWL-SA-1575] 12 pl917 N68-22600 Data comparison for thunderstorm discharge recorders with small range of coverage
[T-R-571] 13 p2103 N68-24318 pressor instrument for luxgate magnetometer 14 p2254 N68-24471 Automatic stepwise zero supprepen and ink recorder used with flux Electronic devices for recording instantan human respiration frequencies [CNAEM-50] 14 p2200 N68-25 14 p2200 N68-25119 Design, operation and construct for monitoring heat ablation data [NASA-TM-X-60497] ruction of event recorder 14 p2258 N68-25288 Magnetic tapes for recording and reproduction with NRZ method RAE-LIB-TRANS-1293] 15 p2471 N68-26943 for recording Faraday Polarization follower system tation of satellite beacon sign 17 p2879 N68-29095 nt for study of eye 17 m2825 N68-29156 ic data recording during military aircraft in Great 17 m2885 N68-29182 History, characteristics, and development of flight data, cockpit voice, and maintenance recorders in U.S.A. civil aircraft

Finnish sunshine recorder compared with interna-

19 p3278 N68-31497

[LA-3919] 17 p2887 N68-29195

Calibration curves from magnetograph measure-ments that account for true spectral line absorption, line scattering, and thin layer line formation [RTS-4238] 20 p3583 N68-32270 NASA-CR-46534 uctural design and component test data for disk and planetury entry parachuse Calibrating recordings of solar magnetograph by comparison with observations of Zeeman splitting [RTS-4236] 20 p3583 N68-32271 NASA-CR-665891 Material strength, shock by planetary entry parachi NASA-CR-66590 loading, and stress analyses ste design 10 p1459 N68-20320 Magnetic field and gas velocity in sumpots at dif-rent levels - Evershed effect in a complex sumspot OVERY TEMPERATURE SKIN TEMPERATURE (NON-BIOLOGICAL) RTS-4243] 20 p3587 N68-32928 erivation of formulas for evaluating error aignals ng recording of longitudinal and transverse field poments by circular and linear polarization modu-RECOVERY ZONES Technique for determining climatelegy of high al-titude balloon trajectories, and bivariane analysis method for solving recovery zone problems (ESD-TM-4) 23 p4097 N68-37376 [RTS-4352] 20 p3472 N68-33048 n recording device for use RECRYSTALLIZATION 21 p3695 N68-34756 Effect of lanti m and yttrium on recryst Artificial sat (FTD-HT-67-291 oemic ray intens is magnetic field 01 p0077 N68-10719 23 p4060 N68-36143 Photoelastic trans nd recording usin nducer optical signal monitoring ng photocells and photographic properties in h BNWL-546) [AD-673848] 23 p4061 N68-36434 Advanced transient w em recording instruments [AERE-TRANS-1072] 05 p0673 N68-14102 24 p4259 N68-38467 RECOVERABILITY loys 06 p0854 N68-15362 Phenomenological study of radiation damage and recoverability of metal oxide field effect transistors [NASA-TM-X-57521] 16 p2632 N68-27307 Heat treatment methods for reducing cost alloy steel RAE-LIB-TRANS-1256] Guided recovery of s [BMWF-FB-W-68-26] rocket by paragliders 21 p3778 N68-34171 07 p1010 N68-17146 rradiation effects and noble metals 22 p3950 N68-35188 Structural changes in t films under electron irradii [NASA-TT-F-10466] Low temperature electron in electrical resistivity recovery of m on p1223 N68-17613 RECOVERABLE LAUNCH VEHICLES solutions of iron [KFKI-9/1967] Manufacturing feasibility of multicell fuel tanks for recoverable lifting body booster [NASA-CR-91077] 03 p0416 N68-11934 10 p1480 N68-19584 Recrystallization and oxidation or tinum oxide alloy by hot stage trans ticroscopy Aerodynamics of wing planforms and vertical takeoff aircraft - jet lift system effects, lift augmentation for rectangular wing, and design of recoverable rockets Effects of deformation ation on metal pressure : (DLR-MITT,-67-18) not 13 p2075 N68-23839 05 p0602 N68-13982 Effect of form of ferrite on recrystallization of fractured steel (UCRL-TRANS-10227) 05 p0602 N68-13983 14 p2272 N68-25140 Modification kit studied for converting Saturn S-4B stage to test bed for booster recovery [DOUGLAS PAPER-3808] Precipitation effect on str carbon steel with aluminum lents 14 p2274 N68-25388 14 p2352 N68-25459 Kinetic equations for recrystallization recovery of cold worked Zircaley plate and tubing [WAPD-TM-590] 15 p2486 N68-26797 esis of recoverable launch vehicle structures [NASA-CR-1116] 17 p2978 N68-28335 ngineering of winged use over cities 22 p3966 N68-35707 standation of recovery and recrystallization of mium by finely dispersed particles of tantalum cor-Systems and reliability engoverable sounding rocket for a BAWF-FB-W-68-44) 16 p2684 N68-28121 Static and dynamic characteristics of wind tunnel odel of parallel staged reusable launch vehicle during Recrystall stage separation [NASA-TN-D-4765] 23 p4175 N68-36106 (KAPL-3353) 21 p3705 N68-34611 Engineering feasibili launch vehicle systems [NASA-TM-X-53739] economics of reusable 23 p4176 N68-36622 RECOVERABLE SPACECRAFT
NT APOLLO SPACECRAFT
NT GEMINI SPACECRAFT
NT MARS [MANNE] 24 p4269 N68-38091 SPACECRAFT
MANNED
SPACECRAFT
MERCURY SPACECRAFT
REUSABLE SPACECRAFT
VORKINGD REUSABLE nt analysis of rectangular place frames 11 p1795 N68-21163 Finite elen [RR-56-7] ion for nonstationary e on rectangle 16 p2794 N68-27604 VOSKHOD MANNED SPACECRAFT VOSTOK 3 SPACECRAFT Convective heat transfer of linders of various aspect ra Transducer system design for recoverable sounding chet with paraglider MWF-FB-W-68-42] 22 p3878 N68-35650 is air 18 p3187 N68-30177 [12-3] RECTANGULAR BEAMS RECOVERY PARACHUTES Experiments and theory of supported beams to point as [NASA-TM-X-39967] rain response of simply countic loading 16 p2779 N68-27613 Aerodynamic, structural, and thermal analyses for aspersonic planetary entry parachute design [NASA-CR-66585] 10 p1458 N68-20314 Effects of symmetrical n for bors under axial leading [PB-178127] rs on strenged rees Material strengths, shock leading, and material stress analyses for planetary entry ringual perachute design [NASA-CR-66588] 10 p1459 N68-20315 19 p3380 1468-31742 RECTANGULAR GUIDES Structural design and performance tests on disk gap-bend parachute for supersonic planetary entry [NASA-CR-66587] 10 pl 459 N68-20316 New class of low loss reacti

20 p3451 N68-32630

SU

p

by

S (U

dep IN/

RECTANGULAR PANELS

Responses of rectangular panels to random acoustic excitations by mechanical impedance measurement

[NASA-CR-91812] 05 p0750 N68-14648 Flutter analysis on buckled supported rectangular nanels under supersonic surface flow [NASA-TN-D-4357] 08 p1251 N68-17651

Matrix algebra digital computer programs, and ex-erimental tests for structural analysis on rectangular

10 p1602 N68-19618

Buckling and free vibration analyses for rectangular sandwich plates with large cutouts [FTD-HT-67-343] 22 p3975 N68-35926 Structural analysis of nonlinear flutter of plate fixed

along its perimeter [FTD-HT-67-217] 23 p4179 N68-36292

RECTANGULAR PLANFORMS NT INFINITE SPAN WINGS

Interference effects on lift, pitching moments, wave resitance, and aerodynamic center shift in rectangular, sweptback, and delta wing body combinations at transonic speeds (DLR-FB-67-93) 11 p1619 N68-21300

Transient response to sonic boom and sound pressure of rectangular structure is analyzed
18 p3179 N68-30286

Computer program for pressure distribution of landing wave incident on two dimensional rectangular 22 p3799 N68-34916

RECTANGULAR PLATES

Flexure problems for thin rectilin [AE-1125]. 01 ilinear plates 01 p0145 N68-10782

Numerical integration technique for determining dynamic response of rectangular plates and cylindrical shells subjected to stationary and constant velocity

[NASA-CR-92881] 07 p1090 N68-16669 Finite element method applied to vibration analysis of rectangular flat plates

08 p1249 N68-17518 Finite element method applied to rectangular flat

08 p1249 N68-17519

Plane stress analysis using Fourier series of edge stif-ened isotropic or orthotropic elastic rectangular plate objected to prescribed temperature distribution and oundary loads. boundary loads [NASA-CR-978]

09 p1445 N68-19311 Numerical analysis of continuous rectangular plate systems using slope deflection equations and finite dif-ference method

10 p1602 N68-19643

Static instability of rectangular orthotropic panels bjected to uniform in-plane loads and deflection de-endent lateral loads ARC-29281] 13 p2163 N68-24134

Application of extended Kantorovich method to stress analysis of clamped rectangular plate subjected in uniform lateral load [NYU-AA-67-107] 13 p2164 N68-24296

Boundaries of regions of parametric instability of simply supported stiffened rectangular plate [NASA-CR-94675] 14 p2354 N68-24439

Plate theory comp d to elasticity theory for static and dynamic response of rectangular plate [AFOSR-68-0577] 15 p2572 N68-26744

Plate theory and tables for resonant vibrational frequencies of uniform, thin, elastic, isotropic, flat AE-1908) 17 p2979 N68-28410

Reissner theory of elasticity applied to analysis of rectangular isotropic and orthotropic laminated plates 18 p3173 N68-29627

Fundamental equations of flexible plates for Cos-serat medium

18 p3174 N68-29662 Stability of hinge supported rectangular plates from analysis of buckling under local loads [FTD-HT-67-126] 18 p3181 N68-30556

Iterative methods for solving difference equations orresponding to problem of rectangular cantilever

19 p3376 N68-31289 FTD-HT-67-3801 Summary representation method of determining rectangular sandwich plate stability under complex boundary conditions using finite difference theory

19 p3378 N68-31714 Resonant frequencies and modes of clamped skew AE-21981 21 p3788 N68-34035 Deformation and stress calculation programs for three dimensional elastic plastic solids with sirts [NASA-TM-X-52440] 21 p3788 N68-34049

Analytic solution for acoustic field in closed space chind rectangular, simply supported plate excited by bundary layer turbulence 24 p4348 N68-37677

RECTANGULAR WINGS NT INFINITE SPAN WINGS

Downwash angles of flow behind rectangular wings of low aspect ratio at subsonic velocities calculated according to nonlinear equati [RAE-LIB-TRANS-1247]

03 p0299 N68-12792 Lift augmentation by projumdary layer of rectangular eller slipstream jet on 03 p0602 N68-13984

Theory of finite span wing in supersonic flow [NASA-TT-F-11461] 09 p1267 N68-19024 Wind tunnel meas ectangular wing with ments of maximum lift for abined blowing at wing nose and trailing-edge flap [RAE-LIB-TRANS-1270]

15 p2379 N68-25741 Comparative theoretical calculations of forces on scillating wings through transconic speed range NPL-AERO-1246] 21 p3618 N68-34258 oscillating wings through transcr [NPL-AERO-1246]

Sonic boom efficiency factor analyses for rectangular configuration, high aspect ratio arrow wing, and delta wing models 22 p3803 N68-34912

Nonstationary three dimensional airfoils in incom-pressible flow, using rectangular and sweptback half-wing models 23 p3986 N68-37151

RECTIFIERS

NT AVALANCHE DIODES

NT CRYSTAL RECTIFIERS

NT GERMANIUM DIODES

NT HYRATRONS

NT THYRATRONS

NT THYRISTORS

Construction and testing of gun-collector tester for synchronous wave RF to dc conversion [UTEC-MD-67-042] 01 p0039 N68-10866 Magnesium copper sulfide junctions used as

05 p0635 N68-14279 [NASA-TT-F-11450] Basic requirements for rectifiers and systems of sta-bilization for ion currents [FTD-MT-24-90-67] 11 p1765 N68-21642

Performance and operating characteristics of trans-

(USAETL-TR-40) 21 p3694 N68-34618

U REGENERATORS

RECURSION FORMULAS
U RECURSIVE FUNCTIONS

RECURSIVE FUNCTIONS Likelihood ratio analysis for detecting signals in additive non-white noise 07 p0966 N68-16985

machines, formal systems, and recursive function [RADC-TR-67-52], V. 1]

09 p1317 N68-18540 Computer generated patterns exhibited by figures growing according to recursive rules [LA-3762] 09 p1363 N68-18876

Recursive functions of regular expressions in lan-

guage analysis (CS-TR-58) 10 p1502 N68-19526 Recursive procedure for generating Hamilton circuit in tree graph 11 p1722 N68-20628

lication of recursive function theory to Hilberts (RM-5494-PR) 11 p1724 N68-20718

s for derivatives of free boundary Recursion rela in Stefan problem for heat equa [MRC-TSR-806]

11 p1726 N68-20806 Hyperarithmetical and analytic predicates and func-tions of ordinal numbers 11 p1729 N68-21060

Recursion relation for 3-j symbols as scalar product for states with three different bosons [JINR-E2-3625] 12 p1938 N68-22800

Orbit determination treated as boundary value problem and solved by power series expansion and recursive functions
[BMWF-PB-W-68-08] 13 p2153 N68-24119

Recursive formulation to calculate satellite motion about axially-symmetric pl [ESRO-SN-74/ESDAC/] 13 p2153 N68-24133 Recursive functions in topological systems of dif-rential equations 14 p2280 N68-24978

Recursive techniques for digital signal processing, data amouthing and compression, and computer simu-lation of low error rate communication [NASA-CR-95681] 17 p2855 N68-29517

17 p2855 N68-29517 Recursive algorit misclassified sample [NASA-CR-96120] as for pattern classification of

19 p3256 N68-31500 Recursive functions for calculus on variable precision computations and intermediate results
[CS-105] 32 p4089 N68-36713

RECYCLING U CIRCULATION

U ERYTHROCYTES

RED SHIFT

Gravitation and light-gravitational deflection, effect of photon spin, gravitational red shift, Maxwell and Einstein theories, and quantization of coupled Maxwell Einstein field

05 p0700 N68-14308 ifts in absorpti Source of red shifts [NASA-CR-91731] tion spectra of quasars 05 p0737 N68-14553

NASA-C-PARTIES AND ASSESSED OF THE SPECIAL PROPERTY OF PARTIES AND ASSESSED OF PARTIES O

AD-hozees;
Theoretical magnitude red shift relations are contructed for cosmological models, using computed past sistories of giant elliptical systems 09 p1422 N68-18887

Cosmological red shift and gravity waves in study of general relativity 16 p2755 N68-27162

REDUCED GRAVITY

Simulated low gravity slouhing in cylindrical tanks in-cluding effects of damping and small liquid depth [NASA-CR-61469] 06 p0826 N68-15452

Off-on dielectrophoretic propellant orientation in w gravity environment low gravity environm [NASA-CR-93334] 08 p1220 N68-17955

Evaluation of Saturn 2B vehicle AS-203 low gravity liquid hydrogen orbital experiment [NASA-CR-94045] 11 p1789 N68-21542 Low gravity fluid mech nics and heat transfer of

inquid propellants - annotated [NASA-CR-92081] 12 p1862 N68-22346

plicable in prediction of low n rocket propellant tanks 12 p1959 N68-22463 Engineers handbook applicable is gravity behavior of liquids in rocket [NASA-CR-92083] 12 REDUCTION

Reaction kinetics for magnetite reduction to iron

with hydrogen [BM-RI-7080] 06 p0791 N68-15704

REDUCTION [CHEMISTRY]
NT DEOXIDIZING
NT HYDROGENATION

Chemical kinetics of uranium, neptunium and americium oxidation-reduction reactions in perchlorate [ORNL-TR-1644] 01 p0022 N68-10554

Production of lead telluride with semiconductor purity by chemical deposition from relatively contaminated materials

01 p0024 N68-10769 Isotopically pure plutonium 241 metal preparation from plutonium oxide, and recovery of plutonium from reduction residues [RFP-1007] 03 p0312 N68-12255

val from gas mixtures 03 p0316 N68-12630 s for tritium remo Techniques [MLM-1389]

Reaction kinetics in oxidation and reduction of al-kaline silver electrode [NASA-CR-91448] 04 p0446 N68-12910

Time, temperature, metallization, and other arametric effects on reduction hardening of unfired magnetite pelle [BM-RI-7069] 05 p0618 N68-14111

Mechanisms of oxidation-reduction reactions in solution treated in terms of electron transfer processes [BNL-50070/T-469/] 07 p0953 N68-16143

Reduction of iron content in molten lithium fluoride/thorium fluoride [ORNL-TM-2036] 07 p0955 N68-16358 07 p0955 N68-16358

Oxidation reduction reactions of ammine complexes of ruthenium 09 p1295 N68-18891

Rapid spectrometric determination of plutonium in itric acid solutions by reduction of plutonium ions and neasurement of resultant color at 567 nm (9 p1296 N68-18950

972

517

af

500

eci-

713

800

53

llar

97

187 of

62

52

im

35

ity

42

of

46

63

04

er-

54

u-n-

69

on

55

10

11

13

18

88

11

(JPRS-459121

Single unit process for rapid pr metal by reduction of its oxides [UCRL-50403]

Reduction reactions, radiation effects in hyd

Chemical production of salt electrolysis

Hydrogen reduction of ic deposition of chromium on th [NASA-CR-72404]

rare earth metals by fused

20 p3427 N68-32895

dide chromium in vapor orium oxide 21 p3650 N68-34022

luction mechanism with

22 p3822 N68-35092

of ammonium, potassi containing iridium [LFEN-78/GAMMA/]

ence of hot plasma

udies of graphite

Hects 08 p1190 N68-17424

Experimental study of photochemical and redox rocesses on cadmium sulfide electrodes
09 p1300 N68-19393 Organic additives and concentration effects on radia on induced reduction of copper salts in aqueous solu tion (NASA-TN-D-4451) 09 p1300 N68-19434 Nitroxide-type stable biradicals prepared from pyr-lidinic amines using oxidation with hydrogen perox-12 p1837 N68-22613 ICEA-R-31761 Preparation of europi s, electrodeposition, pium oxide by reduction, pyroly-n, and reaction with lithium hydride [AERE-R-5670] 13 p2016 N68-23736 Reduction properties of ion each tion to various oxidizers ge resins in rela-13 p2021 N68-24076 d reduction method for n uranium 235 fission 13 p2122 N68-24219 Rapid chemical sepa studying silver 118 pro [USNRDL-TR-68-21] reduction process for produc-ed cobalt base alloys Flash drying selective It have alloys 14 p2263 N68-24613 [NASA-CR-54516] Kinetics of reduction of cuprous oxide to copper in drogen and hydrogen water vapor mixtures and ef-cts of nickel impurities on this process 14 p2218 N68-25300 Kinetic study of reduction of niobium pentachloride by niobium metal using gas chromatograph [S-1780] Amperometric titration for uranium determination using ferrous sulfate as reductant [PG-827/W/] High purity vanadium by metallothermic reduction of vanadium trichloride [BM-RI-7145] 15 p2405 N68-25854 15 p2405 N68-25854 Oxidation and reduction of tantalum metal and tan-talum pentoxide and determination of electrical re-sistivity and Hall effect 15 p2415 N68-26395 Reaction kinetics of electrochemical oxidation and (FTD-HT-67-153) 15 n2418 N68-26581 Voltammetric studies of reduction of organic com-pounds in organic solvents for use in high energy densi-ty organic electrolyte batteries [ECOM-02464-F] 16 p2608 N68-27313 16 p2608 N68-27313 Reaction of sintered silver electrode to oxidation and [NASA-CR-95267] 16 p2612 N68-27973 Ficks equation, diffusion theory, and excessions in description of electrolysis process 17 p2840 N68-28909 Recovery of excess hydrogen used in reduction of INP-173541 17 p2842 N68-29043 Cracking of ammonia and its use in reduction of [NP-17350] 17 p2842 N68-29044 Chromium and nickel powders from reduction of fromium and nickel oxides with magnesium, lithium, or aodium vapors [NASA-TN-D-4714]

18 p3089 N68-30066 Reduction of tantalum pentachloride by hydrogen, electrolytic refining of zirconium, and rolling metals in 18 p3091 N68-30307 Tantalum yield from reduction of tantalum pen-tachloride by hydrogen on heated surface 18 p3091 N68-30308 Kinetics of hydrogen reduction of manganese diox-19 p3218 N68-30877 Vacancies and impurities effects on relaxation of dielectric properties of reduced rutile 19 p3351 N68-31144 reduction of plutonium 19 p3233 N68-31935

mical recombination, and id and anhydrous crystals and sodium hexachlorides NT HYPERBOLIC REENTRY 19 p3234 N68-32097

Reentry control requ approach, and landing [NASA-TM-X-59119] Electric field effects for redistribution of cerium iron ts during terminal glide, (BM-RI-7186) 22 0 N68-35093 16 p2757 N68-27404 ntrol applied to reentry REDUNDANCY Optimum feedback Majority charge te 23 p4035 N68-36212 (ESD-TR-67-483) 02 p0192 N68-11273 REENTRY ANGLE
U ANGLES [GEOMETRY] Automatic command onic transport - interfedundancy, and safety of of Concorde super-h other systems, use of REENTRY COMMUNICATION Receiver noise figure in pres sheath of reentering space vehicle [SC-RR-67-2964] 08 p1110 N68-17452 11 p1660 N68-21033 ancy in complex system echniques, and system an Bibliography on redunda critical analysis of design to Plasma sheath effect on reentry communication system with slot antennas [NASA-TM-X-59087] 16 p2623 N68-275 (REPT.-67-C-397) 11 p1706 N69-21225 16 p2623 N68-27547 Synthesis of redun REENTRY EFFECTS old logic networks 14 p2232 N68-24908 Heat transfer dist into earth atmospher [NASA-CR-66471] for blant comes reentry d error detection in linear (CEA-R-3335) 01 p0146 N68-10017 14 p2296 N68-25423 Nity and techniques for r blunt-mond bodies 03 p0333 N68-12077 Hypersonic shock reentry flow field sim [NYU-AA-66-68] Introducing redundancy to increase speed of digital [COO-1018-1152] arithmetic unit of adder 22 p3842 N68-35336 rvestigating hazards as-rticles injected into at-lear powered spacecraft 07 p0993 N68-17063 Computer program Algorithm for using in tidimensional reproducis on redundancy in mul mosphere from ree (SC-CR-67-2645) 23 p4036 N68-36378 m for discrete Markov Theoretical and en 24 p4222 N68-37564 (TID-23786) REDUNDANCY ENCODING Radio propag iry plasmas 10 pi495 N68-19674 Redundancy in binary patterns from sonar signals reated as Markov information source and as finite boundary layers with [USL-854] 03 p0320 N68-12015 13 p2053 N68-23738 omputer systems with iprocessor spaceborne of s 06 p0809 N68-15444 ture and error analysis 13 p2029 N68-23936 for binary word comp [NASA-TN-D-4290] e of SNAP 27 graphi 08 ml 153 N68-18179 ck codes for correcting ve noise, or synchroniza-Binary low redundancy be error patterns caused by add cask during reentry fro (SC-RR-67-2961) 17 p2918 N68-29456 [AFCRL-67-0591] 09 p1302 N68-18387 radar cross section decrease due to reent [NASA-TN-D-4784] Class of binary cyclic error correcting codes and decoding methods for cyclic codes [REPT-67SD254] 11 p1661 N68-21246 22 p3833 N68-35140 11 p1661 N68-21246 REENTRY GLIDERS
U LIFTING REENTRY VEHICLES m oral tran ndom coded data 12 p1827 N68-21877 REENTRY GUIDANCE Handling qualit boundaries for spi [NASA-CR-945] Variable redundancy error d [NASA-CR-78334] lection codes 16 p2623 N68-27618 02 p0274 N68-11133 Computer design, nethods and assessment of strolled reentry 05 µ0741 N68-14953 Gemini reentry guidance bility, test equipment, (FTD-MT-24-134-67) dancy encoding 20 p3446 N68-33484 hods for improving mming information coding metic storage device reliability REENTRY PHYSICS 20 p3446 N68-33488 Coordination of reentry plasms measurements with flight data sacertained by RAM, FIRE, Gemini, and REDUNDANT COMPONENTS naries on spacecraft soelectric generators, y, and data manage-[NASA-TM-X-60771] Voyager project study owered by radioisotope 04 p0576 N68-13351 Reentry by hyperv DLR-MITT-67-11] 04 00491 NAS-13555 01 p0139 N68-10370 methods for reliability uctures 07 p0979 N68-16996 n for calculating mo-density and temperate dels, and approximations on large redundant st dispersion data for Ap [NASA-TN-D-4292] 06 p0913 N68-15793 dancy effects of reserve elements on system Photographic and spectro rtificial meteor launched fr setric observation of iron m Trailbinzer 2, and reen 12 p1852 N68-22143 tering at 11 kilometer (NASA-TN-D-43121 Linear programming an systems composed of comp [NAVSO-P-1278] aximizing reliability of to subject to failure 19 p3257 N68-31997 07 p1081 N68-16750 personic nozzle distomi cts in high enthalpy at all plates, and county Sequential design of red t elastic structures 21 p3783 N68-33787 NASA-CR-741701 09 p1329 N68-19190 Radial logic and is index redundancy schemes for increasing re [RAE-TR-67306] Effects of ope ly of systems 21 p3673 N68-34151 NASA-TM-X-604471 Probability of fail-free redundancy system provided within tolerance limits [FTD-HT-23-998-67] 15 p2450 N68-26937 operation of constant output parameters remain itry physics at ion, upper at sent and tech

24 p4236 N68-38137

08 p1237 N68-17365

15 p2577 N68-26650

on on reentry of ax-

NT HYPERSONIC REENTRY NT SPACECRAFT REENTRY

isymmetric bodies INASA-TN-D-46141

Complex metal oxides, reentry temperature systems, and clustic wave propagation through rocks at elevated

[NASA-TT-F-11886] 20 p3456 N68-33024

et on expe

SUI

sch [Q

the (IS

in p

trai was [N

SIL.

SA SA

R to 4

stru

refle [DE

N

[NA

U

NT APOLLO SPACECRAFT NT BOOSTGLIDE VEHICLES REENTRY SHIELDING Effects of molecular structure on therm properties of phenolic resims and related poly [NASA-TR-R-276] 02 p0280 h related polymers 02 p0280 N68-11038 **GEMINI SPACECRAFT** JEMINI SPACECRAFT
HL-10 REENTRY VEHICLE
LIFTING REENTRY VEHICLE
MARS
MARS
MARNED
SPACECRAFT
MERCURY SPACECRAFT
RECOVERABLE SPACECRAFT
REUSABLE SPACECRAFT Reentry shielding ablatic radioactive isotopes with rad [NASA-TM-X-57291] abiation measured by imbedded with radiation dector 1] 16 p2662 N68-27574 Thermal spacecraft shielding for aerodynamic heat-[TRANS-2602] 18 p3171 N68-30566 [TRANS-2602]
Feasibility of using solid metal shields for protecting cylindrical shells from effects of pulse loading 18 p3182 N68-30653 NT Design, development, and testing tive heat shield for maneuverable re [GDC-ERR-AN-1133] 19 sting lightweight radia-le reentry vehicle 19 p3377 N68-31427 Methods and techniques for monitoring critical heat shield parameters during spacecraft reentry [NASA-TM-X-60472] 23 p4187 N68-36544 [RM-4491-ARPA] REENTRY TRAJECTORIES Quasilinearization method applied to optimal control problem computations - reentry trajectories [NASA-CR-90749] 02 p0193 N68-11870 [NASA-TN-D-4260] resonance on reentry vehicles (SC-RR-67-287) 04 p0571 N68-12811 FORTRAN 4 program for generating, analyzing, and estimating reentry trajectories [TN-1967-48] 07 p1083 N68-17188 Temperature response analy blades of rotor vehicle during at [NASA-CR-91511] Estimating accuracy of spacecraft reentry trajecto-08 p1238 N68-17543 nal deorbit for specific reentry angle from circular orbits [TR-0158/3520-60/-1] 08 p1238 N68-17672 Thrust and lift interaction effects on equilibrium reentry trajectories of winged spacecraft during turns [RM-3499-PR] 10 p1591 N68-20002 plasma engines DLR-MITT.-67-17] na for Explorer 28 satellite 4] 11 p1789 N68-21630 Reentry predictions f [NASA-TM-X-63164] Reentry trajectories at various bank angles and lift to ag ratios for aerospace transport accord stage IMWF-FB-W-67-28] 11 p1785 N68-21700 drag ratios for aerospaci [BMWF-FB-W-67-28] ablative materials ([SC-DC-67-1948] Closed form approximation for computerized calculation of initial reentry angles and velocity of objects decaying from circular orbits about oblate, rotating Modified control a procedure to determine troller of reentry vehicle [NASA-TN-D-4317] (SC-RR-67-123) 12 p1968 N68-22844 Closed form approximation for computerized calcu-lating of initial reentry angles and velocity of objects decaying from circular orbits about rotating, oblate for free moincule: [SC-RR-67-232] ISC-RR-67-8581 12 p1968 N68-22851 Performance analysis on Apollo reentry acquisi and tracking radar [NASA-TM-X-63180] 13 p2028 N68-23733 Deorbiting of satellites along specified ballistic [DOC.-678D252] 13 p2154 N68-24331 Motion theory for mobile in central gravitational field with tangential thrust applied to ballistic at-Equilibrium electron density dicted flow field around reentry [NASA-CR-66573] mospheric entry [DLR-FB-68-12] 14 p2347 N68-25155 Aerodynamic and performat powered rotor reentry vehicle [NASA-TN-D-4537] Gradient techniques for optimizing control system applied to satellite reentry problem.

[RAE-TR-67263] 18 p3168 N68-29598 Mission and subsystem parametric analyses to evalu-ste direct and orbital entry modes for soft landing capters for reentry vehic [RM-5089-ARPA] miles on Mars [NASA-CR-66639] 19 p3366 N68-31831 Anticipated proble ultrahigh frequencies [DOC.-67SD263] Parametric data, systems analyses, and space capsule lesign concepts - direct versus orbital entry for Mars Evaluating microwave window naterials in simulated reentry en 19 p3366 N68-31832 [NASA-CR-66660] Titan 3 launch vehicle performance and flight techanics analyses - direct versus orbital entry for [SC-DR-67-793] Mars mimions [NASA-CR-66661] 19 p3367 N68-31833 Entry and terminal phase performance analyses of configurations for direct versus orbital entry for Mars [DOC.-67SD344] [NASA-CR-66662] 19 p3367 N68-31834 decelerating flight [RAE-LIB-TRANS-1282] Aeroheating and aeroshell and ablative heat shield desig orbital entry for Mara missions [NASA-CR-66663] ill configuration analyses, ign criteria - direct versus more flucta 19 p3367 N68-31835

metric data on configuntry for Mars missions 19 p3367 N68-31836

22 p3960 N68-35492

Interplanetary and space navigation communications with emphasis on spacecraft atmospheric reentry

n isotope reentry vehicle experimental design study [NASA-CR-72366] 14 p2295 N68-25283 Fluid flow analysis on vis with nonequilibrium chemics viscous merged shock layer sical reactions in stagnation region of reentry vehicle [TR-0158/3240-10/-8] REUSABLE 15 p2454 N68-26412 Systems design and development of acoustic flow transition detector for measuring turbulent flow over vehicle surface during hypersonic reentry [NASA-CR-66622] 16 p2639 N68-27064 TRAILBLAZER 2 REENTRY VEHICLE VOSKHOD MANNED SPACECRAFT VOSTOK 3 SPACECRAFT Plasma sheath effect on reentry communication system with slot antennas [NASA-TM-X-59087] 16 p2623 N68-27547 Analysis of hypersonic viscous interaction on very lender bodies of revolution with thick boundary layers and mass transfer as applied to reentry vehicles RM-4491-ARPA] 01 p0001 N68-10203 cs of two blunt half cone upersonic speeds 18 p2996 N68-30030 wedge entry configura [NASA-TM-X-1621] Ballistic camera data reduction methods for deter-ining reentry body position, velocity, and decelera-Optimization of atmospheric blunt cone and blunt plane vehicle ric reentry corridor for 18 p3165 N68-30227 02 p0264 N68-11145 Chemical reaction of graphite and oxygen in laminar integrated heat shield analysis for high performance reentry vehicles [R67SD65] 02 p0281 N68-11370 boundary layer on reentry (PB-176453T) 19 p3386 N68-31674 Aerodynamic app disturbance flow of [AFFDL-TR-68-4] analysis for hypersonic Boundary conditions determined for persistent roll resonance on reentry vehicles [SC-RR-67-287] 04 p0571 N68-12811 reentry vehicle 20 p3392 N68-32938 Transpiration cooling system for reentry vehicles [NASA-CR-73246] 20 p3611 N68-33016 alysis for refractory coated mospheric entry 04 p0597 N68-13796 Heat and mass transfer of laminar boundary layer for slation surface at stagnstion point of reentry vehicles 21 p3794 N68-34030 Thermodynamic calculations for hot equilibrium wake behind hypersonic reentry vehicle 05 p0752 N68-13912 Spatial distribution of radiant heat in reentry vehicle hypersonic shock layers at angle of attack [NASA-TM-X-61224] 22 p3976 N68-3-873 Magnetohydrodynamic energy converters, and elec-ic plasma acceleration - are currents, electrodeless sama generators, supersonic jet flow dynamics, and Iterative solution of Bhatnagar Gross Krook model for blunt body drag in hypersonic flow [P-3908] 22 p3864 N68-35917 05 p0721 N68-13924 Nonsteady stagnation point flow around reentry body Shear strength of sintered slender camphor and aphthalene models in supersonic wind tunnel ablation 05 p0722 N68-13925 23 p4186 N68-36394 [RM-5506-ARPA] Mobile laser system for detecting artificial clouds of lative materials from reentry vehicles C-DC-67-1948] 05 p0671 N68-14404 Design evaluation of heat source array for isotope [NASA-CR-72463] gic with random-number error effects on range con 24 p4345 N68-38170 Heat dissipation of reentry vehicles by radiation and absorption techniques [FTD-HT-23-590-67] 24 p4356 N68-38225 05 p0687 N68-14732 Approximation method for gliding descent dynamics of reentry vehicles REFERENCE ATMOSPHERES Computation and tabulation of geometric and ropotential altitudes for 1966 standard atmospheric 05 p0741 N68-15000 Reentry temperatures of low heat capacity structures if free molecule and continuum flow [GCA-TR-67-8-A] 01 p0059 N68-10714 08 p1254 N68-17254 Feasibility of detection mosphere from orbital alt [NASA-CR-92064] fur dioxide in earth at-Spacecraft recovery by low cost, lightweight gyrogliding reentry vehicle called space rotor 06 p1244 N68-17652 12 p1865 N68-21948 REFERENCE SYSTEMS sectrometric techniques for estimating flow field emperatures of reentry vehicles 08 p1242 N68-18105 Computer programming for determining model net-ork coordinates by angle measurement 16 p2628 N68-27121 ity distribution, and pre-ry vehicle 09 p1327 N68-18774 Feasibility of NASA literature application to highway safety and to INASA-CR-95223] d transportation engineering 13] 16 p2799 N68-27724 ce characteristics of un-Terminal forecast reference file [AD-672815] 22 p3907 N68-35579 11 p1790 N68-21758 REFERENCES [STANDARDS]
U STANDARDS Tables of values to determine skin friction, heat ansfer, and laminar boundary layer thickness parame-rs for mentry vehicles REFINEMENTS U REVISIONS 12 p1858 N68-21996 ns of reentry vehicle telemetry at REFINING ECTROREFINING NT ELECTROREFINING
NT ELECTROSLAG REFINING 12 p1844 N68-22431 w material and ablative Zone melting and electrotransfer processes in refinvironments 12 p1896 N68-22892 (IS-T-53) 01 p0070 N68-10906 Measurement of boron fibrous reinforced composite aterial behavior relative to mechanical design of Refined aluminum, and zirconium alloy by nuclear reactor fuel product recovery and storage [IN-1114] 05 p0621 N68-14253 13 p2164 N68-24332 Distortion of crystalline structure and density of inlocations in molybdenum in various stages of refine-Longitudinal and lateral stability of spacecraft in ment after filing [FTD-HT-66-638] 05 p0679 N68-14981 14 p2349 N68-24378 Feasibility of smelting copper concentrates containing chalcocite and native copper using nonpyritic sulfur searing materials to aid matte formation. ts on afterbodies of blunt atmospheric entry veh [NASA-TN-D-4591] 14 p2355 N68-24508 bearing material (BM-RI-7119) mation 10 p1490 N68-20220 Electromagnetic accelera high velocity shock waves ar [IMWF-FII-W-68-12] device for simulating Effect of remelting and argon purging on properties reentry body 14 p2323 N68-24800 of EP 65 stainless steel [FTD-HT-67-201] 23 p4076 N68-36647 es for nylon phenolic bolic reentry vehicles 14 p2372 N68-24989 Calculated ablative heat shielding material (NASA-CR-73225) REFLECTANCE NT SPECTRAL REFLECTANCE

FTD-HT-67-287]

283

yer tion

412

064

tion

547

one

030 for

227

574

738

116

71

del

17

ad on

94

70

25

14

48

21

24

3

reflecting sheet (NASA-CR-1174)

fUCRL-503071

Ultrahigh vacus reflectance, transs [DESY-68/26]

Q switched ruby laser rel single and polycrystalline sen [SAMSO-TR-68-283]

Reflectance and photoe to determine optical prop

Microwave transmission, absorption, and reflection officients for thin metal films

24 p4266 N68-37480

SUBJECT INDEX Zero energy reflection coefficients of electrons at polycrystalline silver surface determined by patches of different work functions (AFCRL-67-0378) 01 p0127 N68-10962 4 low resolution radiometric data and surface measurements for calculating reflectance and on of sunlight over United States - Spring, 1962 Tiros 4 low resolution radi 04 p0497 N68-12819 Transfer efficiencies of several diffusely reflecting laser pumping cavities.
[REPT.-292] 05 p0671 N68-14122 Point source of light scatteri ering in semi-infinite media 06 p0882 N68-16039 Transmittance and reflectance of thin films of heelite and wulfenite for infrared filters ed filters 10 p1579 N68-20132 (OR-6) Optical properties of gallium arsenide and gallium 11 p1770 N68-20785 Photometric analysis of scattering particles of reflec-12 p1967 N68-22355 Polarization dependent transmittance, reflectance, and photoeffect of Al films using synchrotron radiation in utraviolet region in utraviolet reg [DESY-67/33] 12 p1889 N68-22636 Radar Doppler scat er for reflectivity studies [NASA-CR-62072] 13 p2028 N68-23721 Critical points of band structure of graphite by using permomodulated reflectance (ISS-67/38) 13 p2136 N68-23779 Coefficients of reflection and transmission of waves narallel layers computed by matrix and invariant imin parallel layers comp bedding methods [TR-12] 13 p2029 N68-23954 Pulse-type radar instrument for measuring reflection coefficients of planetary surfaces from unmanned spacecraft [NASA-CR-87661] 15 p2465 N68-25677 Reflection coefficient of ground-plane mounted transverse electromagnetic mode parallel-plate waveguide illuminating conducting sheet [NASA-CR-66635] 16 p2625 N68-27899 Transient radiation effects on transmission loss and reflectance in optical glasses and quartz [LA-DC-8636] 17 p2952 N68-28358 Conduction bands, valence, and magnetoreflectance data used to study band structure of As and Bi [TR-7] 18 p3147 N68-29568 Reflectance technique using carbon arc image fur-nace to find spectral emittance of rare earth sesquiox-ides 18 p3017 N68-29614 Fabrication of thin films with high reflection coeffi-ent in far ultraviolet 19 p3284 N68-31529 Absorption coefficients and surface reflection of two ngle crystal semiconducting plates single crystal (RTS-4511) 20 p3564 N68-32626 Reflectance and scattering of solar radiation by earth 21 p3761 N68-33889 Reflection coefficient and admittance of circular aperture in ground plane covered by dielectric or plasma slab [NASA-CR-1177] 22 p3941 N68-35171

Incidence angle and layer thickness effects on water and carbon dioxide cryodeposit reflection from space simulator walls [AEDC-TR-68-144] REFLECTED WAVES Integral equations for reflection of plane elastic aves from an arbitrary inhomogeneous layer in nor-al incidence Zenith and azimuthal and dence on reflection prope determined from synchrono [NASA-TM-X-63045] 22 p3941 N68-35171 Reflectance of wedge angle parallel plate waveguides transverse electromagnetic mode illuminating effecting sheet

nation of electron con-quencies of electron co-various gases behind ref Experimental determi-tions and effective freq with neutral particles in 07 p1051 N68-16853 tion processes in argon behind reflected shock 07 p1062 N68-16854 Peculiarities of Mach reflection of shock t aves moving in carbon dioxide and nitrogen at supersonic speed 07 p0987 N68-16862 ing nonstationary heat exchange in reflection of shock wave from solid wall 07 p1098 N68-16863 Heat losses associated with reflection of shock wave from end of tube 07 p1098 N68-16864 Albedo approximation model coefficients of fallout shelter geo [AD-663570] el for radiation reflection metries 08 p1216 N68-18201 Model for cosmic ray propagation with particle mir-[NASA-CR-94593] 13 p2146 N68-23752 Regional distribution of stural surfaces based on any sents of intensity diation reflected from [T-R-566] 13 p2061 N68-23760 Radiative heat transfer and self absorption effect on flow field and heat transfer behind reflected shock 14 p2369 N68-24545 Angular distribution measur from carbon dioxide cryodep and black substrates [AEDC-TR-68-46] ments on light reflected onits formed on copper 15 p2509 N68-26404 d by reflection of superhigh frequency waves [MATT-TRANS-59] 22 p3946 N68-35893 Reflection of strong shocks in xenon from end wall of tock tubes 23 p4139 N68-36252 Optical radar system desig predicting reflected radiation [SC-DR-67-115] and range formulas for rom serosol clouds 23 p4073 N68-36762 REPLECTING TELESCOPES Scatter plate interferometry pidal and ellipsoidal mirrors for hotographic telescope flown itudes - Stratoscope 2 for testing of parabo-or large high resolution by halloon at high al-07 p1001 N68-17203 Photoheliograph study for Ap [NASA-CR-94389] 12 p1879 N68-22923 Optical devices for ci-flecting telescopes for sp 22 p3833 N68-35172 ctance enhancement of 20 p3590 N68-33178 nductors 22 p3952 N68-35955 Pulkovo astrometric conference proceedings cover-ag astronomical telescopes, photography, equipment, nission measurements used erties and electronic band 23 p4167 N68-36492 23 p4154 N68-36852 Mirror and optics data for reflecting astronomical flectometer for use in studying ce, and photoemission 23 p4065 N68-37173 23 p4168 N68-36497 REFLECTION
NT INFRARED REFLECTION
NT RETROREFLECTION
NT SIGNAL REFLECTION
NT SPECULAR REFLECTION
NT ULTRAVIOLET REFLECTION Near infrared reflectivity of ice clouds computed and compared to observations of Venus [NASA-TM-X-61295] 23 p4172 N68-37202 Venus 23 p4172 N68-37202 Radar reflectivity from solar corona and effect of uctuations in returned signal due to time varying effectivity of corona and Faraday fading 24 p4538 N68-37460

REFLEXES Internal reflection spectroscopy of powdered quartz INASA-CR-92572) 06 p0796 N64-16097 Reflecti s for solutions of elliptic and of second order in independent 13 n2094 N68-23569 Lunar surface reflection and spacecraft photographi [NASA-CR-94918] of light rays from ground 15 p2556 N68-25742 octance in light reflection at optic 17 p2921 N68-29206 ons for certain gas 22 p3801 N68-35871 U REFLECTION COEFFICIENT REFLECTIVITY U REFLECTANCE REFLECTOMETERS In situ reflectometer mal control coatings proton, and ultraviolet [NASA-CR-73160] 07 p1099 N68-16904 10 p1558 N68-19848 of optical constants of 12 p1888 N68-22357 al antenna studios for reflectometer design [NASA-CR-66620] 13 p2027 N68-23479 Spectral reflectance a flium neon baser so here, lead sulfide d penerator for sp NBS-TN-439 16 p2673 N68-27413 tometer to measure re (NASA-CR-732341 f opaque materials 18 p.3073 N68-29961 Ratio reflectometer tructures of solids, at [HP-20] 20 n3478 N68-32758 rement data and 20 p3481 N68-33397 Ultrahigh vacuum reflectomet reflectance, transmittance, and p [DESY-68/26] ter for use in studying shotoemission 23 p4065 N68-37173 REFLECTOR SATELLITES
U PASSIVE SATELLITES REFLECTORS

NT PARABOLIC REFLECTORS

NT PARABOLID MIRRORS

NT RADAR CORNER REFLECTORS

NT RADAR REFLECTORS

NT SOLAR REFLECTORS on behavior of pebble reflector and pebble flow reactor design data for reactor de [AAEC/TM-339] 03 p0369 N68-11999 Computer programm of Van Atta reflectors of [S-127-R-59] of dipoles 03 p0322 N68-12281 Energy storage and ope graphite reflectors [CONF-670640-1] 06 p0877 N68-16096 on reactivity in 16 p2703 N68-27218 Tunnel and avalanche of ctive reflector optimizati amplifiers considered in udy to increase scatter. ing cross section of a [RADC-TR-68-11] 20 p3437 N68-32633 Geometric optics and focal region fields of apherical reflector 21 p3730 N68-33884 Large area modular X my foc [NASA-CR-83288] 21 p3730 N68-33905 Visual discriminary reflectors in f [TRANS-518] 21 p3732 N68-34427 21 p3726 N68-34470 reflector and

Normal reflections of shock waves from solid walls in shock tubes determined with Mach-Zender inter-ferometer

REFLEXES
NT RESPIRATORY REFLEXES 02 p0201 N68-11692

NASA-CR-11741

24 p4242 N68-38174

02 p0277 N68-11671

ntellite data 02 p0268 N68-11802

al angles of measurement deper properties of earth atmospher

us and lunar magnetic rveyor 7 data 24 p4343 N68-38252

liei plate wavegui

22 p3833 N66-35172

(TR-0158/3240-30/-6) 16 p2711 N68-27030

U REFRACTIVITY REFRACTIVITY

Clear air turbulence and refractivity variations, and radar detection systems - bibliography with abstracts [NASA-CR-91137] 03 p0339 N68-12251

Line-integrated refractivity measurements for evaluating atmosphere-induced radar ranging data er-04 p0478 N68-13271 [D1-82-0639] :-Radio refractive index of atmosphere at 14,250 feet

using difference functional (NASA-CR-91348) 04 p0478 N68-13278

Nonlinear multi-parameter function for describing refraction index profiles in blast bubbles [BRL-MR-1869] 05 p0647 N68-14354 Experimental verification of variations in refractive dex during laser operation

07 p1005 N68-16908 [TR-5]

Simultaneous determination of refractive index and thickness of very thin films by ellipsometry [NASA-CR-93[74] 08 p1208 N68-17268

Temperature and radiation effects on index of refraction and extinction coefficients of Apollo window 10 p1600 N68-20467 [NASA-CR-1019]

Densities, turbidities, and refractive index incre-sents of icosahedral carborane and its carbon-sub-ituted derivatives 10 p1494 N68-20522

Optical properties of gallium arsenide and gallium hosphide 11 p1770 N68-20785

meter for field use in Light weight optical refract correcting theodolite eightings [WRE-TN-ISD-89] 12 p1878 N68-22852 Refractive index in argon pluma produced by dc

electric arc [ARL-67-0218] 13 p2124 N68-23236 Electrochemistry of glass refractory interfaces over wide temperature range and theory of refractory corro-

14 p2210 N68-24543 Active infrared and passive microwave instruments for measuring integrated refractivity in evaluating atmosphere-induced radar range errors [D1-82-0639] 16 p2619 N68-27130

nc, immersion, and ng refractive indexes of ractometric, gould mov methods of mea itic ruby and corundu 16 p2660 N68-27367

Refractivity variations measured by use of radar antennas at both ends of wave propagation path [NASA-CR-95479] 17 p2849 N68-28656

illumination and reflectance in light reflec-Diffuse ill 17 p2921 N68-29206

Light scattering by electron moving in refractive medium (JINR-E4-3760) 18 p3140 N68-30842 Interferomatic method for determining refractive dex of mica

[RTS-4197] 20 p3537 N68-32667

Coherence properties of electromagnetic radiation mitted from or propagated through random medium 20 p3437 N68-32804

Electromagnetic field and intensity of refractive index fluctuations using Greens function [RM-5697-PR] 22 p3886 N68-35428

Radio wave propagation in Venus atmosphere based on approximating inhomogeneity of refractivity [NASA-CR-970[5] 22 p3961 N68-35599 Electromagnetic scattering by anisotropic media 23 p4110 N68-37269

Refractive index structure and troposphers: propagation of VHF-UHF waves 24 p4225 N68-37830

REFRACTOMETERS

Refractive index measurement of aqueous extracts for determining water soluble additives in liquid hydrocarbon fuels [DSL-TN-103] 08 p1140 N68-17410 08 p1140 N68-17410 Light weight optical refract correcting theodolite sightings [WRE-TN-ISD-89] meter for field use in

12 p1878 N68-22852 Refractometric, gonion Obreimov methods of mean synthetic ruby and corundur

16 p2660 N68-27367 Monochromator and Michelson interferometer nited to form refractometer to find infrared refractive

[AFCRL-68-0207] 17 p2921 N68-29021

REPRACTORY MATERIALS
NT CHROMIUM
NT IRIDIUM
NT MOLYBDENUM
NT MOLYBDENUM ALLOYS

NIOBIUM ALLOYS NIOBIUM ISOTOPES

OSMIUM

OSMIUM
RHENIUM
RHENIUM ALLOYS
TANTALUM
TANTALUM ALLOYS

NT TUNGSTEN ALLOYS

Electronic properties of refractory mon stringic lattice vacancy variations [CU-3553-6] 03 p0405 N68-12164

Anomalous superconducting properties of refractory carbides and nitrides of Groups 4A and 5A elements [LA-DC-8022] 03 p0408 N68-12413 High temperature thermal conductivity of beryllium

03 p0357 N68-12548 [AAEC/E-157]

Principles of brittle material design, design stresses, ad failure probability of brittle components - hand-03 p0424 N68-12797 [AD-661162]

Recrystallization-free hot work-hardening method of hieving high temperature, high strength alloys and 05 p0673 N68-14102 [AERE-TRANS-1072]

High temperature physical and mechanical proper-ties of refractory materials for fueled and nonfueled reactor materials 06 p0873 N68-15352

High temperature thermocouple, electrical, and ectronic materials for reactor components and reac-06 p0873 N68-15354

ography of devices, properties, phase equilibria, actions of high temperature chemistry and of materials in condensed state 07 p1034 N68-16233

obium carbi ium carbides, and flexurul strength, m up to 2550 deg C termination of high tempera exural creep, and thermal expa-07 p1007 N68-16267

liography on high temperature chemics of materials in condensed state
07 p1035 N68-16462 NP-17141)

NP-17181;
Property data of magnetic materian vo-merature liquid alkali-metal space power systems 08 pl 185 N68-17624 (NASA-SP-3043)

Support evaluation confer-refractory materials research on conference on high temp 08 p1188 N68-18207

Operational characteristics of ing potassium system of niobi cycle test loop [NASA-CR-93910] tics of two loop lithium boil-nichium zirconium Rankine 11 p1679 N68-20943

diffusion bonded, pressure welded, and re separable connector designs and en-Omega seal, diffusion bon igh temperature separable ironmental tests [NASA-CR-93912] 11 p1703 N68-20971

High pressure hot pressing of refractory materials [AD-663315] 11 p1707 N68-21328 Grain boundary diffusion in ceramics, effects of ress on diffusion rates of single crystal oxides, and im-

purity cation diffusion in mag [AVSSD-0029-68-RR] ium oxide 11 p1720 N68-21589 terials in fireball of Crystal growth of refractory ma-lasma heated Verneuil type furnac

13 p2131 N68-23091 ntatives and properties of carboran

TR-40] 13 p2090 N68-24054 rs for insulation of lead telluride m radioisotope thermoelectric Three refractory fibers for i and silicon germanium rad ALO-3633-7, V. 1] 16 p2687 N68-27316

Coupled pulsed laser-mass spectrometer used to apprize refractory materials, and recording mass spectra data (USNRDL-TR-68-36) 18 p3084 N68-30322

Hot pressing of refractory materials to form crucibles for holding molten nickel and beryllium at high temperatures and vacuum [RFP-862] 18 p3094 N68-30579 Hot extrusion of refractory oxides to improve

(NASA-CR-95971) 19 p3285 N68-31681 Infrared spectra analyses on high temperature molecules of refractory materials [AFOSR-68-1211] 19 p3230 N68-31868

RE

Abrasive wear tests on metallic and nonmetallic refractory materials 20 p3486 N68-32551

Testing of yttria in molten barium and lithium for asible use as high heat resistant material for ther-(LA-3822-MS) 20 p3512 N68-33237

Static oxidation and compatibility of boron nitride and boron nitride comp [NASA-TM-X-61233] 21 p3708 N68-34284

Electromechanical polishing of refractory carbides ontaining graphite Containing graph [LA-DC-9602] 21 p3698 N68-34370

Microhardness of metalloid and nonmetallic refrac-tory materials and dependence on electron density and crystal structure [FTD-HT-67-269] 21 p3709 N68-34464

Summary data on research studies of high temperature materials (NBS-TN-447) 21 p3709 N68-34664

Optimal properties of single crystal and sintered ceramic cutting tools for mirror polishing of various material surfaces

23 p4069 N68-36980 Temperature effects on electrical conductivity of refractory metal on (FTD-MT-66-126) 23 p4155 N68-37085

Bibliography on measurement techniques and ther-physical property data of high temperature materi-

[AGARD-AR-12] 24 p4354 N68-37761

REPRACTORY METAL ALLOYS
NT MOLYBDENUM ALLOYS
NT NIOBIUM ALLOYS
NT RHENIUM ALLOYS
NT TANTALUM ALLOYS
NT TUNGSTEN ALLOYS

Electronic work functions of tungsten, tantalum, niobium, and rhenium refractory metals containing disselved amounts of hafinium and zirconium [FTD-HT-66-766] 02 p0259 N68-11467 02 p0259 N68-11467 Fabrication and eval on of Rankine system refrac-

tory alloy corrosion test loop (NASA-CR-72335) 04 p0522 N68-13658 tion of Rankine system refrac-Fabrication and eva

tory alloy corrosion test loop [NASA-CR-72336] 04 p0516 N68-13659

X

62

igh

24

ire

67

nil-

43

71

28

91

54

de

16 to c-

22

81

re

68

51

37

de

14

es

c-

3.

18

7

High temperature reactor and thermocomple material research, fast reactor cladding and structural materials, carbides for fuels and structures, and refractory metal alloys:

[GEMP-69] 06 p0872 N68-15351 06 p0872 N68-15351

Changes in structure and mechanical properties of refractory metal alloys induced by titanium interstitial [NASA-CR-92674] 07 p1010 N68-17089

Phase equilibria in ternary system vanadium niobiu carbon through melting ranges of cubic monocarbide [AFML-TR-65-2, PT. 2, V. 17]

09 p1351 N68-18394

n process for refractory niobium-aluminum oxide-ionic applications 09 p1296 N68-18962 Chemical vapor deposition metal plating in fabricating ni niobium sandwiches for thermi [EUR-3743.E]

Summary data on reactor materials development, refractory metal alloys, advanced pressure vessels, and high temperature thermocouple and electric materials [CEMP-1002] 12 p1911 N68-22836

Titanium base interstitial sink effects on creep behavior, structure, and interstitial concentration of niobium base refractory alloy [NASA-CR-95189] 16 p2679 N68-27437

Creep test data on refractory metal alloys for use in spacecraft power supply systems [NASA-CR-1115] 18 p3088 N68-29992

Rupture strength and chemical composition of Fe, Ni, Co, and refractory metal alloys [DMIC-MEMO-236] 18 p3096 N68-30800

Carbide phase and alloying element effects on hydrogen corrosion resistance of steels [FTD-MT-66-143] 19 p3291 N68-31304

Design, fabrication and testing of Cb-1Zr thermal convection loop for evaluation of refractory metals in boiling and coedensing potassium environments (NASA-CR-1097] 22 p3910 No8-35153

Activation energy and creep analysis measurements of high alumina refractory alloys

23 p4080 N68-36060 Adhesion interaction in vacuum of refractory metals, carbides, and refractory metal alloys [FTD-MT-24-347-67] 24 p4268 N68-38049

REFRACTORY METALS
NT CHROMIUM
NT IRIDIUM
NT MOLYBDENUM

NIOBIUM NIOBIUM ISOTOPES OSMIUM

NT RHENIUM NT TANTALUM NT TUNGSTEN

Analytical and experimental investigations of defor-ation properties of reactive and high temperature tetals and alloys

01 p0078 N68-10890

Thermodynamic properties of interstitial elements in refractory metals [NASA-CR-91521] 04 p0468 N68-13478

Temperature responsible of rotor vehicle [NASA-CR-91511] sis for refractory coated mospheric entry 04 p0597 N68-13796 ctive coatings for refractory High temperature pr

[NASA-CR-91537] 04 m0523 N68-13805

Preparation and characterization of high quality sin-ie crystal growth of refractory metal carbides gie crystal growth of refracto [AFML-TIC-67-137, PT. 1]

06 ±0855 N68-15575

Microminiaturization us machining techniques for processing equipments [AD-663293] electron activated application to data 07 p0974 N68-16621

Physical properties of high temperature single crystals of refractory metals [AFCRL-67-0645] 08 p1224 N68-17676 08 p1224 N68-17676

Chemical reaction behavior of refractory metals and loys with environment, and oxidation resistant and ofective coating systems 08 pl188 N68-18209

lid state reactions effect on mechanical properties nicrostructure of refractory metals 08 p1188 N68-18210

mical properties effect on deformation, frac-processing of refractory metals and alloys 08 p1188 N68-18211

Atomic structures of refractory metals, and tempera-ture effects on dislocations 08 pl189 N68-18212

Solid solution and phase transformation alloying nechanisms, and reinforcing fibers for strengthening effactory metals 08 p1189 N66-18213 08 pl 189 N68-18214

Proposed high temperature research program on refractory metals between laboratories and universities in NATO countries 08 p1189 N68-18215

Computer programs for predicting temperature and composition stability of refractory metal phases [AFML-TR-67-397] 09 p1351 N68-18419

Hot press fabrication effects on phase equilibrium de physical properties of refractory metal carbide-gra NASA-CR-75184]

09 p1353 N68-19220 Refractory and ablative materials for use in space propulsion systems [NASA-TM-X-52392] 10 p1585 N68-19833

Measurements on thermal conductivity and electrical resistivity of refractory metals at high temperatures [AFML-TR-67-241] 11 p1768 N68-20746 eters, and phase studies

Melting points, lattice parameter of refractory metal carbide systems [IS-T-219] 12 12 p1892 N68-22947

High temperature liquid metal technology INC-500691 13 p217 N68-23873 Coated tantahum alloys and refractory metal coatings for leading edge regions of hypersonic cruise vehicles [NASA-TM-X-60249] 14 p2273 N68-25345

Vapor pressure data to 1000 atmospheres for refractory elements with low thermal absorption [NASA-TM-X-52329]

Alloying and strengthening mechanisms for heat re-

Alloying and strength sistant refractory metals [NASA-TM-X-60337] 15 p2486 N68-26846 Cermet growth in refractory metal matrices during

17 p2913 N68-28366

Bonding, phase relationships, and electronic struc-ture of uranium nitride refractory metal [PEL-165] 18 p3027 N68-30412 Neutronic calculations of fuel and poison drum con-trol of refractory metal, fast spectrum space power

[NASA-TN-D-4709] 18 p3120 N68-30750 Current induced erosion of refractory metal electrodes in vacuum environment [FTD-HT-67-374] 19 p3353 N68-31311

High temperature research on creep rupture strength of refractory metal fiber and nickel alloy composites [NASA-TN-D-4787] 21 p3702 N68-33684

Recipe and methods of producing high temperature efractory thermostable materials by addition of zir-[FTD-HT-67-300] 22 p3894 N68-35280

Thermal stability of airconium unide [FTD-HT-67-301] 22 p3895 N68-35348 Preparation and properties of ultrafine carbides, nitrides, and metals [SC-T-68-1535] 23 p4006 N68-36204

Thermodynamics of a tory metals, and vacuuranium monocarbides [CEA-R-3390] es of pilot scale purification of refrac-vacuum melting of vanadium and

23 p4078 N68-36938 Adhesion interaction in vacuum of refractory metals, carbides, and refractory metal alloys
[FTD-MT-24-347-67] 24 p4268 N68-38049

REFRASIL [TRADEMARK] U FIBERS
U SILICON DIOXIDE

REFRIGERANTS

New absorbent-refrigerant combinations for air con-itioning absorption refrigeration

11 p1647 N68-20854 Selection criteria for refrigerants for aircraft vapor rycle cooling systems [RAE-TR-67147] 11 p1804 N68-21357

Method for determining refrigerant loss in cryostats and cryopumps 20 p3539 N68-33605

Microwave analysis and measurements in study of reducing antenna noise by refrigerating waveguides and waveguides components [NASA-CR-90543] 02 p0189 N68-11992 Analytical model using finite difference technique for describing heat pumping mechanisms of pulse tube refrigeration

10 p1611 N68-19628

REPRIGERATING MACHINERY NT REPRIGERATORS
Design and construction of prototype spacecraft cryogenic refrigerator for infrared distractor cooling (NASA-CR-98) 0 40543 N68-13115

REFRIGERATORS

Claude cycle refrigerator performance and com-ponent efficiencies presented in graphical form [NBS-TN-354] 62 p0291 N66-11767 re control circuit for space

12 p1877 N68-22755 [FTD-HT-67-227] ne refrigerator 18 p3006 N68-30521

Thermodynamic property data for helium 3 - belium solutions at cryogenic temperatures and applications a analying performance of dilution refrigeratures. NBS-TN-362] 22 p3980 N64-35807

REFUELING NT AIR TO AIR REFUELING

Fuel handling evaluation for fast that reactor refueling system [BNWL-683] 16 p2707 N64-28126

Development and performance of automatic shifter refueling system of UH-1 helicopter [USAAVLABS-TR-68-37]

21 p3621 N68-33663 REGENERATION [ENGINEERING]

Experimental regenerative uranium 234 and 235 neutron flux detectors 05 p0692 N68-14181

Reduction of carbon dioxide in nuclear submarine mospheres by increasing effectiveness of onoethanolamine stripping operation in removal

06 p0788 N68-15498 Heat regeneration and high gas temperature effects on helicopter gas surbine engine performance OS p1230 N68-17402

Higher plants for food, water, and air regeneration is closed ecological systems.
[JPRS-45277] 12 p1829 N68-22373

Subsystem, system, and total spacecraft integration studies for regenerative life support systems and en-vironmental control [NASA-TM-X-60421] 14 p2207 N68-25521

14 p2207 N68-25521 ron flux monitors usi anium jotopes

Regenerative in-core sixture of fertile and finish INWL-SA-1621, REV.) 21 p3724 N68-34304

REGENERATION (PHYSIOLOGY)

09 p1281 N68-18909

Bioregenerative life support systems for long dura-tion space flights - Hydrogenomonas biosynthesis and algae photosynthe [NASA-SP-165] 15 p2392 N68-26207

Physiology and biochemistry of algae, and culture owth technique for Chiorella

15 p2394 N68-26219 Properties of multiple species bioregenerative stems for manned space flight

15 n2394 N68-26222 Biological and physical chemical aspects of closed ecological systems for air and water regeneration and utilization of exceets

[JPRS-45237] 18 m3014 M65 Date | D

Biological and physicochemic regenerative food supply of space [NASA-TM-X-61201] cal reaction systems for ce flight crew 21 p3636 N68-34494 REGENERATIVE COOLING

Predicting heat transfer 13 p2171 N69-23862 penerative pubble hed NASA-TM-X-524371

ARL/ME-2881 16 p2640 N68-28225

Regenerative cooling caps bon facts when used with fluor [NASA-CR-72341] Computer program for computation of heat transfer and pressure reduction in regenerative pebble bed hea

(ARL/ME-290) 18 p3188 N Thermal insulation development to reduce her ansfer to coolant of FLOX/propune regenerative en

NASA-CR-72413] 19 p3360 N68-31939

EGENERATIVE CYCLES
U REGENERATION [ENGINEERING]

U POSITIVE FEEDBACK REGENERATIVE PUEL CELLS

Parametric mass assigns and comparison of two sectant cooling and storage units for based based vydrogen oxypen regenerative fuel cell system NASA-TR-D-4386) 07 p0939 368-16631

To price the grant will

SU

B

ľ

1/

17

170

1)

PEN

[A

U

REG

REC

NAME OF PERSONS

REG

ermal and thermal modes of regeneration Electrothermar and in fuel cells for space power applications 08 p1124 N68-17825 Regenerative bimetallic galvanic cells with volatile 16 p2595 N68-28151 Energy conversion efficiency of thermal and electric regenerative fuel cells 17 p2813 N68-28735 REGENERATORS Zirconia refractories for use in construction of hypersonic wind turnel storage heaters and insulation 13 p2089 N68-23945 Computerized simulation of heat transfer in regenerative type heat exchangers [FTD-MT-24-119-67] 15 p2577 N68-26535 Feasibility of heat pipe gas turbine regenerators for aircraft power plants
[USAAVLABS-TR-68-10] 19 p3359 N68-31316 Corrosion resistant materials for gas turbine engine [GAR/LA-HT-67-2512/4/] 20 p3577 N68-32440 Recuperator for closed Brayton cycle solar energy space power system [NASA-CR-1150] 20 p3403 N68-33062 REGGE POLES Hadron interactions and decays - S-matrix theory, Regge pole and current algebra [UCR-34P107-49] 01 p0100 N68-10012 Zero/four/ symmetry and Regge pole theory for reac-tions in which initial and final states in T channel contain equal mass particles [UCRL-17738] 02 p0243 N68-11303 Regge pole domination of strong interactions, and S matrix approach to bootstrap of rising trajectories [TH/222] 02 p0246 N68-11514 Cromover effect due to sign change in Omega Regge 02 p0246 N68-11515 High energy nucleon-nucleon-nucleon-nucleon transfer and ch gy nucleon-nucleon scattering with large ramsfer and chiral SU/2/ x SU/2/ symmetry (TUEP-67-251 04 p0551 N68-13894 Dispersion sum rules in theory of strong interactions [JINR-E2-3511] 05 p0714 N68-14495 Sum rule constraints on baryon Regge trajectories in channel of baryon-pseudoscalar scattering process 07 p1042 N68-16416 [AD-663165] onal Euclidean group, partial wave scut-Two dimensional Euclidering, and Regge behaviors 07 p1043 N68-16481 Crossing relations for particle spin amplitudes, and implications for multi-Regge pole model [TH/235] 08 p1213 N68-17573 Regge pole model singularities when physical parti-e mass tends to zero 09 p1392 N68-18972 [TH/228] Daughter Regge trajectory in Bethe-Salpeter equa-n of field theoretical model Da 10 p1562 N68-19569 Regge pole model and applications to particle classification and high energy reactions [CERN-67-24, V.2] 10 p1562 N68-19594 Regge pole prediction on momentum transfer depen-dence of two body inelastic processes in kaon neutron 10 p1567 N68-19766 (REPT.-68/4) Regge poles and high energy meson-nucleon scatter-12 p1929 N68-22552 [CALT-68-145] Regge pole model with absorptive corrections for eson-nucleon reactions DESY-68/11 13 p2115 N68-23425 SU/3/ crossing relation for meson-baryon scattering and Regge pole theory [TUEF-68-6] 15 p2513 N68-25896 Kinematical constraints and factorization require-tents for Regge pole residue functions LNF-68/5] 15 p2518 N68-26237 [LNF-68/5] Estimating shadow elastic scattering in multi-Regge (INR-880/VI/PH) 15 p2521 N68-26519 Multi-Regge model effected by crossing relations for helicity amplitudes of processes with a final state parti-15 p2523 N68-26568 [LPTHE-TH-235] Asymptotic behavior of S-channel helicity am-NTH-68/11 15 p2512 N68-26929

Kinematic equations and quantum mechanics of Regge trajectories for equal and unequal mass scatter-[AD-668537] 16 p2717 N68-26968 roximation of amplitudes associated with age of single Regge pole and elementary spinless 16 p2719 N68-27144 Kinematic singularities in helicity amplitudes and Regge poles in elementary particle interactions 16 p2720 N68-27236 S matrix, Regge poles, sum rufes, current algebra and eak interactions in elementary particle theory AFOSR-68-0910] 16 p2721 N68-27341 weak interactions in [AFOSR-68-0910] Differential cross sections for elastic scattering of pions by protons, and application of Regge pole theory to differential cross sections 16 p2724 N68-27839 Regge trajectory phenomena of spinless particles in Bethe-Salpeter equation [KFKI-3/1968] 16 p2727 N68-28014 S matrix theory for particle classification from Regge theory for quarks [IC-68-14] 17 p2928 N68-28648 Partial waves at infinity in Regge theory and S matrix proof of generalized Levinson relation for real part of those shift 17 p2929 N68-28768 Wave functions of Regge poles represented as 17 p2930 N68-28803 Regge residua, form factors, and composite particles numerical analysis of Van Hove formula for proton-proton scattering using mathematical model 17 p2942 N68-29482 Comparison of Regge pole theory to experiment for the meson nucleon production in pion nucleon scatter-17 p2942 N68-29483 Analytical approach to conspiracy problem for ar-17 p2942 N68-29484 Parametric approach to study of total cross sections in multi-Regge model 17 p2943 N68-29489

on and constraints in Regge pole theory 4] 18 p3129 N68-29843 [REPT.-68/14] Reage behavior, kinematic singularities, and fixed obes to satisfy Mandelstam representation TH/68/15] 18 p3136 N68-30584 poles to satis Mass formula in broken SC/2,C/ and application to

and delta Regge trajecto [KFKI-5/1968] 19 p3328 N68-31210 Classification of Regge trajectories by group theoretical arguments or kinematic constraints [REPT.-68/21] 19 p3335 N68-31885 tic constraints 19 p3335 N68-31885 Finite energy sum rule derived from unitarity, nalyticity, Regge asymptotic behavior, and resonance

(UCRL-18232) 20 p3549 N68-33251 Finite energy sum rules for pion photoproduction and omega-Regge pole residue functions [NP-17489] 20 p3551 N68-33491 20 p3551 N68-33491

Zero energy behavior of Regge poles and residues studied in Born approximation (IC-68-31) 21 p3738 N68-34138

Pionic radioactive decay of deuterons investigated within framework of Regge pole theory [UCRL-18252] 21 p3744 N68-34585

Dynamical exchange models of scattering processes, and SU/3/ symmetry for Regge residues 22 p3920 N68-34831 Total cross sections and elastic scattering near for-ward direction based on symmetry, Regge pole models, and Coulomb interference models 22 p3921 N68-34976

Regge pole and quark models for describing high sergy inelastic collisions and two body collisions 22 p3922 NoS-34980

Bremsstrahlung, thermodynamic, multi-Regge, and quark models of high energy production processes 22 p3923 N68-34985

Pion resonances and backscattering using Regge

22 p3923 N68-34988 Regge pole model problems connected with high energy nucleon-nucleon scattering near forward firection

22 p3923 N68-34990 Algebraic methods in Regge theory for classifying Regge poles according to trajectory 22 p3924 N68-34991 Regge pole model for high energy two body reac-tions, and multi-Regge pole model for many body 22 p3925 N68-34999

ematical analysis of rising Regge trajectories stering cross section symmetry metry 22 p3927 N68-35189 10 plus 10 and 27 meson prediction by forward scatter of pseudoscalar mesons off octet baryons calcu-lated through group theory and Regge poles [TUEP-68-14] 22 p3930 N68-35547

Regge poles and occurrence of resonances in pi N and KN collisions [UCRL-TRANS-1364] 22 p3931 N68-35575

Meson-baryon and baryon-baryon scattering in reggeized \$U/6/ theory [IC-68-43] 22 p3933 N68-35702 22 p3933 N68-35702

Superconductivity in quark model and Regge trajec-[JINR-P2-3802] 22 p3934 N68-35799 Argand analysis of Regge amplitudes gives rise to [IC-68-51] 22 p3935 N68-35821

Laplace transformations and Regge high energy chavior for determining continuous parameter sum rules [IC-68-48] 22 p3935 N68-35835

Reggeized Tadpole model used to investigate p-n ass difference found to disagree with previous calcu-22 p3936 N68-35849

Two dimensional expansions of relativistic amplitudes, Regge trajectories, and daughter poles
[JINR-E2-3841] 22 p3937 N68-35918

Evaluation of Regge pole model for pion nucleon scattering at small momentum transfers and high ener-[UCRL-17873] 23 p4121 N68-36804 Classification of Regge trajectories according to broken SL/2,C/algebra [KFKI-1/1968] 23 p4122 N68-36846

Regge trajectories and residues in quark model [IC-68-36] 23 p4128 N68-37027

Theory of Regge pole model for relating particle collisions to exchange processes [CERN-68-31] 24 p4314 N68-37781

Appearance of Regge poles while scattering in cou-mb field [JINR-P2-3866] 24 p4318 N68-38058

REGIONS

ANTARCTIC REGIONS ARCTIC REGIONS AURORAL ZONES BRILLOUIN ZONES

NULL ZONES POLAR REGIONS SUBARCTIC REGIONS

TEMPERATE REGIONS TROPICAL REGIONS

REGISTERS (COMPUTERS)

NT ACCUMULATORS (COMPUTERS)

NT SHIFT REGISTERS

Binary flip-flops and registers based on self excited oscillators 06 p0805 N68-15254

Algorithm for reducing m by introducing new registers computer time and equipmen [FTD-HT-23-600-67] number of microcommands ers or signals that save both 07 p0971 N68-16801

Data link register arrangements for error and correction, and logic design of system
13 p2032 N68-23208 and correction, a [UCRL-17934]

REGRESSION ANALYSIS

Invariant estimation of stochastic system parameters AROD-5211-4] 01 p0041 N68-10247 [AROD-5211-4] Computer programmed reg machine tool vibration effects on [AD-659547] regression analysis for s on machining machining 01 p0070 N68-10623

ization by transcoherence 01 p0032 N68-10846

Regression parameters for adjochemical data from fraction ith variables of equal pacertainty for correlation of tionated nuclear debris with variables of equal [USNRDL-TR-67-99] 02 p0176 N68-11347

ures of global relative curva 03 p0359 N68-12235

Computer program usin techniques and differential m using nonlinear regression ferential equations to calculate ess steel by lead-bismuth eutectic 07 p1009 N68-16715

Computerized item selection and regression analysis SRM-68-111 08 p1136 N68-17788 Robust regression by m
[TR-3] ed least squares method 09 p1317 N68-18353 for linear prediction under Lipschitz cor [IMM-363] 10 p1547 N68-20211 Regression analysis of proper in amplifier nozzles ristics in fluid amplifiers eakness parameters for fluid to optimize static charac-11 p1682 N68-20730 Optimization theory for main of satellite and space na variate regression anal-tion systems 12 p1902 N68-22175 Sequential procedures for discriminating between ted sample size design and linear versus quadratic [AROD-5506-8-M] 13 p2092 N68-23352 m for nonl regression and equat [NASA-CR-61780] 13 s2097 N68-24322 ns, Buyes theorem 15 p2494 N68-26687 [TR-135] Computer pregression and [DP-1128] res method linear 16 p2629 N68-27970 Regression analysis to serodynamic load spectra at tions for low wing agricultura (ARL/F-41) 16 p2591 N68-28270 Practical technique for ng general regression surfaces (LMSC-6-79-68-6) 17 p2906 N68-29513 Computer regression analysmoment dependence on r-cen afterglow decay data (AASU-280) is of electron transiti stroid, based on plan 18 p3132 N68-30217 Computer program for variance and covariance regression, and analysis of variance and co (NWL-TR-21081 18 p3105 N68-30413 regressive time series Autocorrelation anal 18 p3107 N68-30613 [TR-154] Launch vehicle vibration levels predicted by mathe-atical models derived through regression analysis of MAC-709-101 22 p3965 N68-35514 Research and dev costs impact on labor productivity NASA-CR-968891 22 p3982 N68-36005 rater pressure and criti-ilicate liquid equilibri-23 p4052 N68-36107 [NASA-CR-97153] Postflight tracking valuation using regr measurement error alysis for Apollo Saturn evaluation using regres (B flight tests [NASA-TM-X-53756] 23 p4024 N68-37384 Stochastic approxi ods for regression ion problems 24 p4223 N68-37651 rmly distributed Linear ranking m residuals for regressio [AROD-4721-14-M] 24 p4278 N68-38336 Decision theory appr [AD-674524] roltivariate analysis 24 p4278 N68-38441

REGRESSION COEFFICIENTS

Regret function derived for va Pontryagin and Bellman, and representation of known optimal c [NASA-CR-93737] variational methods of d its application in control policies 10 p1511 N68-20291

REGULATION U CONTROL REGULATIONS

Technology as ience and engifor integra

REGULATORS

NT AUTOMATIC FREQUENCY CONTROL

NT CURRENT REGULATORS

NT FLOW REGULATORS

NT FREQUENCY CONTROL

NT FUEL FLOW REGULATORS

NT FRESSURE REGULATORS

NT RELIEF VALVES

NT THERMOSTATS

NT VOLTAGE REGULATORS

OLTAGE REGULATORS

Explicit form expressions obtaine artrol law for linear system - for

problem of synthesis of optimal control sonlinear systems - gyroframe regulator 01 p0043 N68-10317

d for correction systems 01 p0043 N68-10320

de cell tests, aponent stress tests of um charge regulator 01 p0005 N68-10612 INASA-CR-899901

Optimal control syste for nuclear power instal [ANL-TRANS-470] 03 p0378 N68-12660

lution for class of rrative dynamic programal regulator problem 22 p3851 N68-34973

REHEATING U HEATING REIGNITION U IGNITION

REINFORCED MATERIALS
U COMPOSITE MATERIALS

REINFORCED PLASTICS

tic and tensile pro perties of fiber rainf AFML-TR-67-148] 01 p0081 N68-10541 Creep analysis for glass p

02 p0277 N68-11574 ed inside vehicles dur-olutile, materials from ing environmental to heated reinforced pla [ERDE-9/R/67] 04 p0460 N68-13091

Adhesion stres laminates under v [DLR-FB-67-65] 04 p0526 N68-13453 am fiber reinforced

ological account or JPRS-43923] 05 p0679 N68-13961 in composite used in

Gines fabric reinforchelicopter airframe to pr [D-MAT-148] 05 p0682 N68-14991 s fiber reinforced plantics constant load 05 p0682 N68-14999

fect of filler content on and glamy modulus of

polyurethane rubber [WRE-TN-CPD-113] 08 p1189 N68-17312 ment ring segments of ser compressive loads 11 p1717 N68-20807

Structural analysis of same ith glass fiber reinforce h shells of revolution plastic facings and [USAAVLABS-TR-67-65]

11 p1799 N68-21663 plastic composites [USAAVLABS-TR-67-66]

15 p2489 N68-26373 inearity of viscoelastic aforced plastic 18 p3097 N68-29701 Theory and loading ter merties of EDF slass fi

Fabrication and eva secret epoxy resin m remance materials of graphite fiber rein-composites as high per-[AFML-TR-67-367] 19 p3299 N68-32085

ry properties of giass fiber Creep and elastic recinforced plantic 20 p3512 N68-33123

or elastic deforma Generalized Maxwell equation tion data analysis of glass fiber p 20 p3512 N68-33124

Electrical and lu ffects of fract reinforced plastics [AFML-TR-68-113] 22 p3894 N68-35270 o-fiber plastic is r use on poly/furfury-

23 p4082 N68-36371 roperty measurements

Infrared method for the nn reinforced plantics [NAL-TR-150] 23 p4083 N68-36636 t of chemical penetra-

23 p4084 N68-37022 ce effects on fatigue at wound glass rein-Loading rate and wi and rupture of pressu forced plastic cylinder [PA-TR-3693] 24 p4349 N68-37937

24 p4198 N68-38279

REINPORCED PLATES

Stress concentration whells, and effects on a [NASA-TT-F-427] 01 p0142 N68-10407 Shock load e cocrete plates (ISL-7/42/66) ity steel reini 06 p0918 N68-13221 iffened skewed plate

11 p1791 N68-20635

of circular hole in 18 p3177 No8-30097

01 p0142 N68-10407 storage at cryogenic [NASA-CR-72224] 03 p0419 N68-12088 al shells with multiple Buckling of circular of orthotropic layers and ec [TR-0158/53820-10/-1]

03 p0420 N68-12095 tells of revolution subt of stiffe FID-HT-67-27]

03 p0421 N68-12233 eformation th lysis on ecces lution of plantic buckling lened circular cylindrical TR-0158/53816-72/-11

09 p1439 N68-18398 Analytical method for determining deflections and resess of short sundwich shell with closed ands under

R-67-2838) 10 p1603 N68-19700

ining buckling load of h finite transverse shear lasic formulas for d ndrical sandwich she WF-FB-W-67-251 11 p1799 N68-21713

of stiffened cylin Initial poetbuckling shells under axial com (LMSC-4-77-67-52) 15 p2567 N68-25992

tructural design and weight analysis for skin at and stage plug nozzle of NEPTUN reusable carrier concept [TUB-IR-3/1968]

15 p2568 N68-26071 Finite deflection theory 16 p2778 N68-27589

in thin walled axis

17 p2979 N68-28345 crum equations in displacements and bounda-tions for ribbed cylindrical shalls under ther

18 p3174 N68-29673

18 p3179 N68-30245

18 p3180 N68-30323 [TR-9]

iscular cylindi 19 p3375 NGB-31013

n hydrostatic pressure findrical shell 19 p3375 N66-31145 pations for grid rein-Stremes and deflection loading of reinforced circums (PIBAL-68-10)

19 p3376 N68-31269 Cthin cylindrical shells

Vibration tests and ass with and without longitud [NASA-TN-D-4705] 21 p3782 N68-33738

Large plastic del of this spherical shell cled to internal pressur DOMIT-1-38] 21 p3790 N68-34547

Mary for Mary

WASA-CR-060041

AIR-E1-5/68-TRI 18 µ3013 N68-29

21 p3645 N6E-34679

REINFORCEMENT ISTRUCTURES

Stability and resistance data for wire embedments in silver filled apoxy adhesives [SC-DR-67-425] 01 p0081 N68-10456

Rapid tensile tests conducted with intermediategrade steel reinforcing bars [AD-659263] 01 p0145 N68-10867

Digital computer program for determining critical ombinations of axial load and radial pressure in stif-ened circular cylinders fened circular cylind [NASA-CR-91224] 93 p0422 N68-12372

Digital computers for prediction of instability in ec-centrically stiffened cylinders under axial compression [NASA-CR-91223] 03 p0423 N68-12456

Practical design curves for axial compression, and ure bending factors of eccentrically stiffened circular dinders [NASA-CR-91268] 04 p0585 N68-12872

Free vibration of stiffened cylindrical sh 05 p0751 N68-14684 [NASA-CR-91777]

Stress concentration around nonsymmetrically reinforced hole in plate 08 p1245 N68-17374

Flexible reinforced composite window material for expandable structures application 16 p2784 N68-27921

Stresses and loads on radial nozzles in spherical and cylindrical shells to study reinforcement of openings in

Pressure venels [NASA-CR-95896] 18 p3181 N68-30578 Parametric resonance and structural stability model

of uniformly reinforced flat plates [NASA-CR-97191] 23 p4181 N68-36592 Elastoplastic deformation of cylindrical shells with openings and photoelastic reinfo [FTD-HT-67-421] rcement coverings 24 p4351 N68-38310

REINFORCEMENT RINGS

Fourier series used to compute response in cylindri-cally orthotropic thick rings subjected to stress loads [TR-40] 03 p0419 N68-12067

Buckling of cylindrical shells, with reinforcement rings subjected to hydrostatic pressure loading [TAE-67]

Plane symmetric loading of ring stiffened cylindrical shell response to vibration

14 p2356 N68-24850

Transient dynamic response of periodically ring rein-forced circular cylindrical shell to uniform pressure ap-plied through surrounding acoustic medium 19 p3374 N68-30938

Resonant frequencies and strain concentration in ring reinforced cylindrical shell [TM-405.3361-31] 19 p3378 N68-31562

Nonlinearities in axisymmetric stress-strain state or spherical shell weakened by reinforcement ring 19 p3378 N68-31712

REINFORCING FIRERS

Air Force basic research on high performance, fila-ment-reinforced composites and single crystal whisker [OAR-67-0010] 01 p0069 N68-10511

Evaluation of fiber-reinforced composites strength [NASA-CR-90509] 02 p0225 N68-11698

Reinforcing aluminum, aluminum alloys, and ductile apoxies with short, brittle fibers and high modulus filaments, and borom carbide whisker growth [NASA-CR-90526] 02 p0223 N68-11872

Chemically bonded zirconium oxides strengthened with silicon carbide whiskers [NASA-CR-91470] 04 p0515 N68-13299

Analysis of cylindrically laminated system under ten-sile load, applied to fiber-minforced composite materi-[RM-389] 04 p0592 N68-13892

Upper and lower bounds of effective elastic proper-ties of biaxially fiber reinforced materials [F-B2455] 06 n0857 N68-14130

Stress analysis and fracture mechanisms of advanced fiber reinforced composites [NASA-CR-92721]

07 p1011 N68-16111 Solid solution and phase transformation alloying sechanisms, and reinforcing fibers for strengthening refractory metals

08 pl 189 N68-18213 Oxide deformation and fiber reinforcement in tung-ten-urania and tungsten-zirconia elongated into fibers by hot extrusion [NASA-TN-D-4475]

09 p1352 N68-18610 Filamentary composite materials in design of aircraft IAGARD-AR-10) 09 p1445 N68-19228 Composite structural materials reinforced with whiskers and liquid metals developed for high tempera-(AD-665810) 11 p1793 N68-20794

Interfiber distance and temperature effects on critical aspect ratio in composites [NASA-TN-D-4548] 12 p1888 N68-22338

Stress concentration near breaks in long elastic fibers in elastic matrices of fiber reinforced composites [AFML-TR-65-220, PT. 3]

12 p1895 N68-22823

state-of-the-art review 13 p2083 N68-23681 [AFML-TR-67-359]

Powder metallurgical techniques for preparing cor-onites of carbon fibers in metals to increase wear r [RAE-TR-67265] 13 p2077 N68-23983

Ceramic whiskers, polycrystalline ceramic fibers, and fiber reinforced metal composites NASA-TM-X-52444] 13 p2085 N68-24124 and fiber reinforced meta [NASA-TM-X-52444]

Reinforcing tungsten filaments applied to metals and loys to attain elevated temperature strength and cor-

13 p2086 N68-24250 Measurement of boron fibrous reinforced composite material behavior relative to mechanical design of

reentry vehicle stru [DOC.-67SD344] cle structures 13 p2164 N68-24332 Structural design analysis for columns, plates, and viindrical shells of fibrous composite materials NASA-CR-94658] 14 p2353 N68-24412

cylindrical shells of I [NASA-CR-94658] ng and ablating materials 14 p2276 N68-24581 [AERE-TRANS-1079] Boron carbide whinkers for reinforcing brittle fibers of aluminum, aluminum alloys, or ductile epoxies [NASA-CR-94733] 14 p2275 N68-25651

Boron filaments for use as reinforcing phase in composite materials for aerospace structures [NASA-TM-X-59224] 16 p2689 N68-27427

Filamentary composite materials reviewed for potential applications in spacecraft structures [NASA-TM-X-60069] 16 p2772 N68-27470

Environmental testing of whisker like flexible reinforced composite fiber for spacecraft window [NASA-TM-X-60137] 16 p2690 N68-27526

Fracture strength and crack propagation in fiber 16 p2691 N68-27629

Non-woven reinforced Mylar-Dacron balloon construction material, and flying thread loom techniques 16 p2682 N68-27939

Automatic curing of reinforced plastics in space 16 p2683 N68-27951

timum reinforcing fiber arrangement and quantity rets for specified tensile strength and modulus of 18 p3176 N68-29895 [ARC-CP-975]

Anisotropic photoelastic analysis of fiber reinforced [Y-[609] 18 p3099 N68-30345

Tensile properties of tantalum and tungsten 10-fiber [NASA-TN-D-4725] 18 p3093 N68-30504

Comparative study of experimental and statistical techniques for determining bundle strength of com-AFML-TR-67-351) 19 p3298 N68-31374

Quantitative analysis of weight savings from using fibrous composite materials for large launch vehicles [NASA-CR-73235] 19 p3382 N68-32071

Fabrication and evaluation of graphite fiber rein-orced epoxy resin matrix composites as high per-19 p3299 N68-32085

Prestressing applied to glass fiber reinforced resin laminates to improve tensile strength [RAE-LIB-TRANS-1292]

20 p3508 N68-32272

Errors involved in measuring modulus or case an fiber reinforced plastic plates 21 p3706 N68-33610 Manufacture, testing, and calculation of composite constructions of glass fiber reinforced plastics and ther-

21 p3707 N68-33615 High temperature research on creep rupture strength of refractory metal fiber and nickel alloy composites [NASA-TN-D-4787] 21 p3702 N68-33684

Electrical and luminescent effects of fracture in fiber reinforced plastics (AFML-TR-68-113) 22 p3894 N68-35270 Factors affecting tensile strength of ductile metals reinforced with short, brittle fibers [NASA-CR-96350] 22 p3893 N68-36004

Thermoelastic properties of fiber reinforced com-posite materials [FTD-HT-67-422] 24 p4273 N68-38305

REISSNER THEORY

Singularities in Reissner theory of plute bending and method of integral transforms to solve boundary value problems during bending 12 p1975 N68-22085

Reissner theory of elasticity applied to analysis of ctangular inotropic and orthotropic laminated plates 18 p3173 N68-29627

Existence theorem proven for solving nonlinear Reissner equations for non-shallow symmetrically loaded shells of revolution 18 p3175 N68-29727

Asymptotic method of investigating flexibility of non-shallow spherical dome, and nonlinear Reissner differential equations for determining symmetric defor-mation. 19 p3378 N68-31711

RELATIONSHIPS

Relations between game theory and eigensystems of square, real, or complex matrices [AD-673663] 24 p4276 N68-37949

RELATIVE BIOLOGICAL EFFECTIVENESS [RBE]

Hit theory and microdosimetry applied to relative biological effectiveness problem [BNWL-SA-1753] 19 p3210 N68-31666

RELATIVISTIC EFFECTS

Four computer programs for calculating general elativistic curvature tensors and equations of motion AD-660044] 02 p0241 N68-11695 relativistic cur [AD-660044] Relativistic stochastic processes

[TH/227] 07 p1049 N68-16710 FORTRAN program for relativistic calculations on

kinematic parameters of neutron producing reactions (EUR-3668.E) 08 p1215 N68-17894

Special theory of relativity and event description and classification emphasizing distance measurements [JINR-P2-3482] 09 p1383 N68-19017 Coordinate definitions for space-time physics [CTS-PHIL-S-67-1] 10 p1557 N68-19503

Unitary relativistic model of quantum field theory without ultraviolet divergences
[JINR-E2-3266] 10 n1561 N68 1050

Alfven waves i (D1-82-0709) en waves in relativistic pla 10 p1572 N68-19673

Pi

bi

00 00

REL

IC

Relativistic energy bands and Fermi surfaces for eavy elements

10 p1578 N68-20031 Dynamic and optical properties of cylindrical capaci-tor as analyzer for charged particles - extension to relativistic region [1A.131]

[IA-11311 11 p1699 N68-21445 Relativistic corrections calculated for one way Dop-pler system used in calculating orbital velocity [NASA-CR-96745] 21 p3657 N68-33997

Representations of inhomogeneous groups, matrix ements for current between single-particle states and orentz transformations, and relativistic states with

Lorentz tra [JINR-P2-3902] 23 p4134 N68-37215 RELATIVISTIC PARTICLES

Spiraling filamentary and relativistic solid electron beams in electromagnetic fields [NASA-CR-91281] 04 p0547 N68-12960 Numerical analysis of electron bunching in accelera-

tors with standing waves [FTD-MT-66-159] 04 p0547 N68-13040

Polarization of coherent bremsstrahlung by extreme-relativistically polarized electrons ly relativistic (NP-17173) 07 p1052 N68-16997

Theory of injecting relativistic ele [UCRL-50288] electrons into astron 10 p1563 N68-19672

Computer program for constructing and plotting eight-dimensional phase-space orbits for relativistic charged particle in electromagnetic plane wave [BNWL-452] 10 p1568 N68-19899 Relativistic invariant models of baryons regarded as

(ITF-67-47) 14 p2304 N68-24647

Time histories and energy spectra of interplanetary relativistic electrons from solar flares [NASA-TM-X-63210] 14 p2339 N68-24727 ares 14 p2339 N68-24727

[NASA-TM-X-63210] 14 p2339 N68-24727 Uniqueness of equations for partial amplitudes in relativistic three-particle problem [JINR-P2-3694] 14 p2318 N68-25406

SUBJECT INDEX Inelastic and large angle scattering effect on calcula-on of relativistic electron transport through matter 15 p2552 N68-26140 Invariance amplitudes for interactions of particles with arbitrary spin considered in relativistic particle wave functions 15 p2521 N68-26506 ITTEF-5381 Vector potential of E layer and external magnetic field for plasma confinement within toroidal configuration of relativistic proton colls [UCID-1582] 15 p2533 N6E-26820 Effect of bulk motion on synchrotron radiation rate for ensemble of relativistic particles [NASA-CR-96471] 20 p3551 N68-33525 icles 20 p3551 N68-33525 Monitors of secon ary electron emission in which primary particles are ext [SLAC-TRANS-85] relativistic 21 p3739 N68-34303 ativistic particles 22 p3930 N68-35504 Ionization energy los [SLAC-TRANS-82] Spin-related polarization effect in Compton scatter-ig of relativistic electrons ing of relativistic el-[FTD-HT-67-394] 23 p4115 N68-36337 Quantum field theory quasi-potential method for deriving relativistically covariant wave equations for n particles [JINR-P2-3900] 23 p4135 N68-37274 Solid state detector for detection of secondary elec-(SLAC-TRANS-84) 24 p4293 N68-37509 Relativistic systems and wave equations, scattering and decay processes, and quantized fields and local inendovatic covariant quantum mechanical descrip-tion of composite particle local currents [JINR-P2-3847] 24 p4307 N68-37535 Relativistic model of meson resonances with linear 24 p4317 N68-38003 RELATIVISTIC PLASMAS Possible types of locally Maxwellian distributions in relativistic gases [AD-662906] 06 p0824 N68-15086 Electrical of [AD-662904] uctivity of rela 06 p0891 N68-16011 Alfven waves in relativistic pla [D1-82-0709] 10 p1572 N68-19673 Motions of relativistic gravitational gas plasmas studied with linearized Einstein equations coupled to one-particle Liouville equation [LPTHE-TH-237] 14 p2307 N68-24827 Spectrum analysis of laser beam scattering by relativistic electrons 16 p2673 N68-27158 Self focusing in high current, relativistic, electron beams extracted from electrode space of pulsed X ray machine 19 p3339 N68-31274 Solution for nonlinear interaction of steady state cir-cularly polarized electromagnetic wave with cold plasma in constant longitudinal magnetic field [IPP-6/62] 20 p3554 N68-32381 IPP-6/62] RELATIVISTIC TREORY

NT MANDELSTAM REPRESENTATION Existence of scattering matrix in Wightman approach to axiomatic theory of nonrenormalized in [JENR-P2-3086] 03 p0389 N68-12348 Relativistic equations for gravitational fields of rotat-ing bodies, and for gravitation effects on star galaxy

04 p0543 N68-12930 [AROD-3743-4-P]

First and second laws of thermodynamics used to uggest relativistic generalizations of gas dynamics TR-5] 04 p0494 N68-13254 (TR-5)

Derivation from covariant form of Boltzmann equa-tion resulting in relativistically satisfactory diffusion [AD-662908] 06 p0881 N68-15881

al theory of Brownian motion, derivation of Maxwell equation, cs of polarized systems Statistical-mechanical theo statistical-mechanical derivati and relativistic dynamics of po [AFOSR-67-2779] rized systems 08 p1208 N68-17298 [NEIC-RR-28] of neutron stars 09 p1419 N68-18816

Coordinate definitions [CTS-PHIL-S-67-1] apace-time physics 10 p1557 N68-19503 Relativistic formulation of relativistic theory of unified a m of rigid sphere as example of fied model of elementary parti-

10 p1562 N68-19625 [NUP-A-68-1]

Relativistic descriptions of material sources for gravitational fields including elastic materials as sources of asymmetric static fields. 10 p1559 N68-20032

Zero density and app lativistic models of [NASA-TR-R-282] 10 p1593 N68-20192

Non-quantum mech al derivation of reacroscopic tensor from system of harped particles 11 p1752 N68-20938

s isotropic cosmological models (TH/68/7) 11 p1763 N68-21257

anics and theory of relativity for tional and inertial effects 11 p1692 N68-21512 Cla separating gravitatio [AFCRL-67-0626] Construction of relativistic quantum theory model 12 p1914 N68-22023

Relativistic quantum field the m field theory with local interactions in indefinite (SU-1206-131) 12 p1916 N68-22392

Relativistic optimal socket trajectories for interstel-15 p2559 N68-25938

Elastic scattering of protons at high energy and mo-mentum transfer using Serber model and Bakamjian-Thomas theory

15 p2517 N68-26124 Integral representations of vacuum expectations in Euclidean quantum field theory and consequences in relativistic case [TTF-67-50] 15 p2524 N68-26720

Chapman-Enskog theory for approximate solution of lativistic Boltzmann equation on viscous fluid motion

16 p2648 N68-27765 Relativatic quark field theory, and general formulas for reducing S matrix elements to expectation values of time or ordered products of quark field [DESY-68/11] 18 p3139 N68-30803

Covariant statistical mechanics, and relativistic ansformation properties of thermodynamic quantities

[LNF-68/31] 19 p3387 N68-32165 Relativistic and one photon corrections to interac-oms between two atomic systems TR-N69-1] 20 p3549 N68-33366

Periodic solution of central differential equation in relativity theory of gravit [NASA-TM-X-61138] 20 p3592 N68-33375

Modal electromagnetic wave propagation in conducting tubular waveguides filled with dispersive media in relative motion 21 p3729 N68-33780

of relativity and its applica-ntary particles 21 p3739 N68-34212 Multitemporal theory of relations to quasars and elementary

Structure and stability of rotation general relativity ng massive stars in 21 p3768 N68-34213

Invariant formulation of theory of gravitati 21 p3732 N68-34603 [FTD-HT-67-285] Relativistically interstreaming bounded plasma in-

[AFOSR-68-1083] 22 p3940 N68-35076 Relativistic three body theo body resonances by decay prod [TH/68/22] eory used to study three cts resonating in pairs 22 p3928 N68-35320

Foundations of electrodyn tromagnetism and relativistic in [REPT.-2] mics including elecvariance 22 p3917 N68-35367 Relativistic physics in one space and one time dimen-

[MATSCIENCE-59] 22 p3919 N68-35894 nication times Cosmology with invariant (DOUGLAS PAPER-5140)

24 p4342 N68-37921

RELATIVISTIC VELOCITY

Quasipotential equation for two body relativistic scattering amplitude [FFF-67-7] 05 p0709 N68-14255 lical motion of relativistic

07 p1060 N68-16700 INASA-TT-F-5211

Logical contradiction of e cles that travel faster than sp [NASA-CR-94241] stence of tachyons, parti-d of light 12 p1914 N68-21900 Isotropic radiation field inducing changes in particle locity and motion 16 p2712 N68-27038 Relativistic hydrodynamics in gravitational fields 16 p2647 N68-27675

theory for analyzing structure of electron fluid-dynamical waves moving into neutral, and louized 19 p3340 N64-31332

Relativistic ring cyclotron w [JINR-P9-3787] th strong focusing 19 p3259 N68-31902 RELATIVITY

Machian effects of axisyme bodies in general relativity [NASA-TM-X-60605] netric stationary rota 01 p0100 N68-10738 Set of observers associated w [TR-2] th relativity principle 04 p0543 N68-13163 Experimental studies on re judgments [TM-3520/001/00, V. 1] evance used in human

04 p0464 N68-13727

Experimental studies on relevance used in human judgments - individual study descriptions [TM-3520/002/00, V. 2]

04 p0464 N68-13728 Compilation of lectures on gravitation and general [NASA-TM-X-60784] 05 p0699 N68-14304 Invariance properties and sciated with general relativity conservation laws as-05 p0700 N68-14306

Relativistic catastrophe for de density at zero temperature generate stars of high 05 p0737 N68-14307

Hamiltonian formulation of g 05 p0700 N68-14311 ion for Einstein

fach principle as boundary cond dequations 05 p0700 N68-14312

Poincare and Lorentz invariant expansions of (JINR-E2-3553) 09 p1382 N68-18600 Relativity and gravitation experiments designed for

10 p1525 N68-20382

Quantization in Clifford space-time and problems in group theory related to determining root vectors and fundamental weights 12 p1898 N68-22179

Cosmological red shift and gravity waves in study of general relativity 16 p2755 N68-27162

Exact solutions of Einstein field equations of general relativity for empty spaces 19 p3315 N68-31139

of parameterized dynamic 21 p3733 N68-34726

Mathematical expressions frament of relativistic systems of po (LA-3839) for Monte Carlo treat-point particles 23 p4124 N68-36927

Elementary law of electrodynamics derived from first Coulomb law by using relativity theory 23 p4109 N66-36967

ELAXATION [MECHANICS]
NT SPIN-LATTICE RELAXATION
NT STRESS RELAXATION

Relaxation phenomenon in supersonic gas flows [REPT.-67-2] 02 p0201 N68-11647 Theory of heredity applied to creep and stress relaxa-on under conditions of sudden specimen loading

02 p0278 N68-11677

Viscoplastic properties of metals, viscoplasticity model, and equations for compression and relaxation verses 03 p0351 N68-12352

Laminar boundary layer of gas on flat plate in escence of vibrational and chemical relaxation 06 p0828 N68-15614

effects of elect. [AD-663463] ctions 08 p1223 N68-17657

e clastic plates with relaxed [TR-16] 10 p1607 N68-20181

Relaxation phenomena e surfaces in high voltage pui [TR-10] on n-type indium antimonide pulsed electric fields 11 p1769 N68-20772

ock heated nameq 12 p1946 N68-22104 in and surface energy in nickel

16 p2743 N68-27324

Relaxation of moving boundary layer and pressure gradient flows, and flow birefringence 16 p2650 N68-28315

stant stretch rate lo simplified equati [AA&ES-67-2] 18 p3178 N68-30103

Relaxation spectra calculations for viscoelastic materials and Proney or Dirichlet series coefficients [NASA-CR-88252] 21 p3708 N68-34247 Light scattering and ultrasonic absorption tests for alcohol structural relaxation determinations.

23 p4012 N68-36903

RELAXATION [PHYSIOLOGY]

Annotated bibliography on studies pertaiduty time during long duration manned space [NASA-CR-96737] 21 p3645 ? nanned space flights 21 p3645 N68-34751 RELAXATION METHOD [MATHEMATICS]

Extensions and simplifications for convergeoofs of relaxation methods for nonlinear systems nonlinear systems 11 p1728 N68-20933 CS-88]

Relaxation of lower order moments of jet molecular elocity distribution for free expansion of monatomic gas into vacuum 16 n2647 N68-27662

Successive over-relaxation method of solving linear systems by extrapolated Gauss-Seidel iteration [REPT-244] 19 p3247 N68-31356

Relaxation method for studying fast chemical reac-ons of disturbed chemical equilibrium [NRC-TT-1324] 19 p3230 N68-31803

Asymptotic calculation of relaxation oscillations in phase trajectories of systems near breakdown point 20 p3516 N68-33126 Relaxation method for computing stresses in thin

wall structure 21 p3785 N68-33800 Dynamic relaxation method for solving finite dif-ference equations of stress analysis problems 21 p3785 N68-33802

RELAXATION OSCILLATORS

Quasar model based on relaxation oscillations in su-NASA-CR-91336] 04 p0576 N68-13362 Asymptotic theory of relaxation oscillations in systems with one degree of freedom - calculation of imit cycle period

06 p0879 N68-15283 Fluid relaxation oscillators insensitive to pressure and temperature changes for timer application [HDL-TR-1381] 16 p2661 N68-27395

Relaxati elaxation oscillations in magnetization vector in Yt-m-Iron Garnet /YIG/ at high microwave power 17 p2956 N68-28590

RELAXATION TIME

Vibrational relaxation times for nitrogen in hyper-sonic shock tube experiments 01 p0053 N68-10979

Thixotropy of viscoelastic media with continuous istribution of relaxation time 02 p0278 N68-11673

Relationship between relaxation times and normal sode frequencies in uniformly damped solids DNR-TR-RLT-100} 06 p0894 N68-15629 [ONR-TR-RLT-100] ptimum relaxation time proven for Maxwell solid during forced vibration of bonded rocket as-

[NASA-CR-92986] 07 p1091 N68-16746 Dissociation relaxation times of carbon divaide 07 p0987 N68-16861

Shock tube experiments on expansion and recombination of high temperature gases.

[AASU-272] 09 p1451 N68-19201

Temperature dependence of cyclotron resonance relaxation time in copper

11 p1766 N68-20638 Nuclear spin-lattice relixation time measurements in alkali halide resinances at low temperatures 13 p2014 N68-23605

Nuclear magnetic relaxation in solid helium 3 14 p2334 N68-25299

Pressure dependence of nuclear spin-lattice and apin-spin relaxation times in aluminum powder
15 p2535 N68-25950

Lattice thermal conductivity of magnesium stannide by relaxation time measurement

15 p2538 N68-26322 Chlorine and deuteron relaxation time measure-nents in liquid deuterium chloride and hydrochloric 17 p2839 N68-28591 Nuclear spin-lattice res ce relaxation in superco 18 p3148 N68-29587

Kinetic theory, recomb m reactions, and relaxation time for weakly ionized heli [AFCRL-68-0237] 18 p3146 N68-30768

Measurements of proton spin-lattice relaxation time liquid silane and partially deuterated liquid silane NP-583/PL] 18 p3138 N68-30775 in figuid stane [INP-583/PL] Vacancies and impurities effects dielectric properties of reduced rutile rities effects on relaxation of

19 p3351 N68-31144 Dielectric relaxation time constants and high speed, long wavelength coherent radiation detectors [TI-08-68-38] 20 p3477 N68-32527

Comparison between distribution functions of ielectric relaxation times and corresponding critical 21 p3731 N68-34020

Relaxation zone behind strong shock wave front in INASA-CR-970111 22 p3863 N68-35698

Spin-upin and spin-lattice relaxation times of fluorine 19 in powdered lanthanum trifluoride samples contain-ing praseodymium and neodymium ions am ions 23 p4146 N68-36059

Study of rotational relaxation in low density hypersonic free jet using impact pressure measurements 23 p4046 N68-36328

Molecular weight distribution, shear rate dependent scouty, and melt stress relaxation behavior of 23 p4082 N68-36536 Electron spin-spin relaxation time determinations for vanadyl acetylacetonate solutions under high pressure based on electron spin resonance linewidth measure-

24 p4212 N68-37627

Preliminary systems design of lunar module relay using synchronous satellites as communication and tracking relays for manued spacecraft [NASA-CR-65784] 01 p0029 N68-10406 Satellite spacing and frequency sharing in microwave

INASA-CR-973101 24 p4225 N68-37837

RELEASING

Maximum credible boron release from core surfaces of pressurized water reactor with chemical shim [EUR-3609.E] 01 p0095 N68-10862

RELIABILITY

AIRCRAFT RELIABILITY CIRCUIT RELIABILITY

NT COMPONENT RELIABILITY
NT SPACECRAFT RELIABILITY
NT STRUCTURAL RELIABILITY

Global point-to-point come work ground station reliability [NASA-TM-X-60567] analyses 01 p0030 N68-10675

Reliability assessment for fuel cell stack performance under high stress conditions [NASA-CR-90524] 02 p0163 N68-11827 el for system re

Mathematical model [FTD-HT-23-501-67] m reliability 07 p1015 N68-16756 Operational reliability and failure probability of digital computers

09 p1310 N68-18802 Analysis of failure data for electr (RISO-165) 13 ctronic equipment 13 p2041 N68-24017

Parametric reliability growth models using maximum likelihood procedures to obtain estimates of weapon system reliability 13 p2077 N68-24206 Reliability of high resolution grating spectrometer in

14 p2257 N68-25157 Reliability optimization of auto

[NASA-TM-X-61123] 15 p2471 N68-25716 Reliability prediction for fast flux test facility reactor safety system (BNWL-661)

15 p2504 N68-26717 Construction and long-integration time reliability of [TR-0158/3230-46/-13]

15 p2471 N68-26938 Performance prediction bility analyses of textile cle [TR-68-23-CM] n data for application to reliang and equipment 16 p2686 N68-27045

Data collecting procedures ler reliability and failure meci res for assessing fluid ampli-16 p2591 N68-27065

Reliability and confidence limits for random sample INMC-MP-68-21 16 p2667 N68-27330

Service life of aged and ur [TR-68-45-CM] ed nylon parachutes 16 p2689 N68-27394 Circuitry and reliability of transformerless low r for television

frequency amplifier for [FTD-HT-23-945-67] 18 p3044 N68-29730 Reliability schemes in digital systems with asymmetrical failure modes [NASA-CR-95886] 18 p3041 N68-30368

Stopping rules which assure lower confidence unnu-strate lot reliability under rectifying type inspection 18 p3105 N68-30406 on finite k

System reliability approxim ations using modular (ORC-67-42) 18 p3106 N68-30517 Monotone failure rates statistically tested for trends [D1-82-0716] 19 p3300 N68-31075 Test equipment for quality control of diffraction

19 p3316 N68-31534 Boundary values for first excursion probability as re-lated to reliability and safe performance of mechanical and structural systems [NASA-CR-95961] 19 p3378 N68-31629

Increasing reliability of magnetic memories by using core pairs [FTD-MT-24-327-67] 20 p3441 N68-32376 Reliability of information systems with dispersed units [FTD-MT-24-389-67] on from networks of remote

20 p3435 N68-32378 Models, analysis, an liability and availability [PIBMRI-1365-67] ximations for system re-20 p3485 N68-32524

Reliability analysis for recoverable sounding rocket with flexible wings [BMWF-FB-W-68-32] 21 p3778 N68-34206

Evaluations of system reliability with incomplete information concerning reliability [FTD-HT-67-463] 23 p4068 N68-36666

Reliability analyses and failure probabilities of S-4B age automatic pilots and hydraulic thrust vector con-ol system configurations, and compatibility with actrol system conf

[NASA-CR-98032] 23 p3995 N68-37242 Stability theory applied to static and dynamic stabili-ty problems of electric power systems 24 p4300 N68-37795

RELIABILITY CONTROL U OUALITY CONTROL

RELIABILITY ENGINEERING

Statistical evaluation of reliability function of elec-tronic equipment or communications system tions system 01 p0042 N68-10307

Quantitative influence of various factors on failure intensity of elements of automatic systems - reliability 01 p0042 N68-10308

Statistical simulation procedure for obtaining relia-bility characteristics of complex logical control systems

01 p0042 N68-10309

1

ric

(C

Qu.

Rapid determination of component reliability in-dices, based on theory of statistical distribution and hyperbolic law of service life [FTD-87-67-30] 01 p0070 N68-10603

(AD-659195) de of military and conand maintainability 01 p0070 N68-10849

Systems safety checklists for use in preparation and review of launch, operating, test, checkout, main-tenance, handling, calibration, and orderanto-

01 p0047 N68-10975 Ground tracking relia 9/9A, 10, 11, and 12 [NASA-TM-X-63030] shility data for Gemini flights 02 p0180 N68-11206

Program control methods for reliability of Apollo spacecraft systems [NASA-TM-X-60662] 02 p0217 N68-11527

Subsystem conceptual design for manned optical technology extension system - Apollo spacecraft [NASA-CR-90529] 02 p0241 N68-11863

Operational reliability of hierarchical branched con-trol system with ranked output elements 06 p0864 N68-15587

Reliability engineering in manufacturing electronic [FTD-MT-65-514] 06 p0811 N6E-15650

Bayesian reliability growth ma (TR/RP-80) athematical model 07 p1014 N68-16603

Method for predicting ultimate cycle lives of accordit batteries from test data (NASA-CR-92883) 07 p0939 N68-16705 Effects of hardware reliability and failure rates, skills, environmental factors, mission duration, and resupply potential on maintainability of manned spacecraft on long duration flights [NASA-CR.73151] 07 p1086 N68-16905 Design and performance testing of large scale mixed impression axisymmetric inlet at transonic and supersonic speeds [NASA-TM-X-1507] 07 p1074 N68-17028 Reliability engineering for transducers and com-onents for airborne data acquinition systems [R-266] 08 p1178 N68-17548 Dynamic checks, performance tests, and statistical comparisons of ground based simulators with flying characteristics of simulated aircrafts [USAAVLABS-TR-67-56] 08 pl157 N68-17775 Factor analysis, and reliability of jet bomber maintenance-malfunction code clusters [AMRL-TR-67-196] 09 p1269 N68-18388 Reliability predictions and effects on future aircraft maintainability and performance [AD-664372] 09 p1274 N68-18691 Reliability programs for aerospace systems and ap-licability of Bayes theorem in assuring component re-(SEF-TN-67-5) 09 p1347 N68-18692 Aircraft maintainability and reliability [AD-664380] 09 p1270 N68-18701 Computer techniques for reliability engineering in nuclear plants [AHSB/S/-R-138] 09 p1309 N68-18779 Airline reliability engineering analysis and planning AD-664377] 09 p1271 N68-18814 Standard trajectories and parameters for design of Voyager spacecraft, and performance prediction, inter-faces, and reliability of spacecraft subsystems [NASA-CR-93559] 09 p1433 N68-19097 Trajectory analysis, reliability of spacecraft equi-ment, performance prediction, and functional requir-ments of Voyager Mars spacecraft [NASA-CR-93554] 09 p1435 N68-191: 09 p1435 N68-19153 Design, construction, and performance evaluation of different triodes for 300 milliwatt X band triode oscilla-[OR-7] 10 p1506 N68-19960 Systems and reliability e neering for automatic pressure transducer calibrati NASA-TM-X-536781 10 p1530 N68-20044 Theoretical approach to a uncher system reliability ment of space vehicle launcher system re [ELDO-TM-107] 10 p1535 N68-20414 ector testing, design evaluation of ors, and assessment of design rules Principles of connector tes ommercial connectors, and [NASA-CR-93924] 11 p1704 N68-20976 Statistical analysis for operational reliability of radio (FTD-HT-67-68) 11 pl661 N68-21427 Redundancy effects and self adaptive control for increased reliability of telemetry systems
[FTD-MT-24-149-67] 12 p1852 N68-22142 Theory, mathematical models, and testing for relia-[NASA-TT-F-11545] 12 p1985 N68-22348 Reliability opti with limited resources for series parallel sy [ORC-67-40] 13 p2091 N68-23190 Trade studies, engineering analyses, and support data for mission 1A of Apollo applications program -NASA-CR-61791] 14 p2343 N68-24578 Trade studies, engineering data for mission 1A of Apollo analyses, and support applications program -NASA-CR-61788] 14 p2343 N68-24579 Trade studies, engineering analyses, and support data for mission 1A of Apollo applications program -NASA-CR-61790] 14 e2343 N68-24580 Reliability of electronic equ ment used for nuclear reactor control (CEA-R-3292) 14 p2293 N68-25131

Principles and concepts of performance prediction, uality control, and reliability engineering ZV-9-O) 14 p2265 N68-25334

Reliability of automatic control systems for suclear

[CEA-R-3380] 14 p2296 N68-25389

recoverable sounding rocket for [BMWF-FB-W-68-44]

Economical approach to achieving electronic or

ty, and logistics support 23 p4097 N68-36018

Shock protection design concepts for multistory cylindrical structures, housing equipment, and person-nel subjected to nuclear blast Development of failure sensing switching circuitry or electrical power system reliability during extended INASA-CR-97128] 14 p2367 N68-25548 25 p3993 N68-36279 Economical enhancer lity using error-correct trion, compact, and cor mos tests of radar perof digital-network relia-odes - evaluation of repli-15 p2425 N68-26173 m codes 23 p4035 N68-36310 Radio frequency output ceramic window and cathode structure modifications for improved klystron tube life and reliability REPT.-346-1F] 15 p2436 N68-26473 f NASA microelectronic re-[NASA-CR-97217] 23 p4031 N68-36668 15 p2436 N68-26473 nlysis in use of pilots to es of Saturn 5 class 16 p2604 N68-27434 sibility and reliab formation relia or in automatic con (NASA-TM-X-59113) FTD-HT-23-734-67) 23 p4038 N68-36904 Mathematical model for propagation reliability of icrowave signals as function of path length, fade mar-Quality control method or process manufacture of se of technological operation onductors 23 p4159 N68-37320 16 p2624 N68-27734 gn and tests of hardware apply systems 23 p3996 Nas-37258 Analytical work during design plied to reliability of power at Design, fabrication, and reliability prediction of Pageos satellite applied to relia 16 p2773 N68-27927 Probability of fail-free redundancy system provided within tolerance limits [FTD-HT-23-998-67] operation of constar Reliability engineering and small sample tests for [NASA-CR-95397] 17 p2890 N68-28775 24 p4236 N68-38137 Problems of classifying fair machine components [NASA-TM-X-60998] Mission task performer determining military has winged helicopters [SER-50489] ures of machines and ice oriented approach to ng qualities requirements of 17 p2894 N68-28912 24 p4198 N68-38280 andbook /text/ 17 p2863 N68-29525 [NASA-CR-1110] pment of electric cable Microelectronic device turer and specific device inf [NASA-CR-1111] data handbook /manufac-(ECOM-0390-3) 24 p4236 N68-38287 17 p2863 N68-29526 RELIEF MAPS Guidelines for selecting viewing points for three-dimensional maps [TR-3] 02 p0206 N68-11427 Engineering evaluation of standard hardware 18 p3044 N68-29823 [NAFI-TR-1094] Design and evaluation of filter/separator for fuel system u [USAMERDC-1927] on of optimum, lightweight pilation maps of fissure [ACIC-TC-1292] 18 p3081 N68-30017 06 p0841 N68-15845 Coupling cyclic code and probability functions as highly reliable error correcting device for digital data d retiof map reading under light in cockpit simulation 17 p2832 N68-29242 transmission [MTP-75] 18 p3035 N68-30119 e model making to im-ulief portrayal on USAF Component reliability data applied to estimation of idealized system reliability [ORNL-TM-2200] 18 p3081 N68-30161 (ACIC-TR-104, REV.) 18 p3070 N68-30684 Qualitative prediction methods for reliability, wear, and service life of machine tools with fatigue as life imiting factor RELIEF VALVES Shock and restart control systems with bypass drors and pressure transducers for mixed compression infets [NASA-TM-X-52439] 21 p3759 N68-34355 FTD-HT-67-221 18 p3081 N68-30446 ition of notion of component im-RELIEVING U STRESS RELIEVING ce in multicomp erent structures 19 p3283 N68-31265 TR-541 RELUCTANCE Reliability prediction tech ques for single item and Reluctance of toroidal coil with rectangular cross sectional area (SCL-TN-67-31) 03 p0385 N68-12570 multiitem problem (NASA-CR-1129) 19 p3286 N68-31979 Component reliability including selection, specifica-tion, verification, review process, parts data sources [NASA-CR-1130] 19 p3286 N68-31980 03 p0385 N68-12570 Spin wave theory for thermodynamic properties of agnetic insulators G-81031 15 p2539 N68-26349 aturized electronic Reliability assurance of micromir RELUCTIVITY U RELUCTANCE [NASA-CR-96229] 20 p3447 N68-32326 REMAGNETIZATION U MAGNETIZATION Cumulative degradation rule and accelerated life tests examined in reliability study of electronic com-REMANENCE 20 p3449 N68-32423 Remanent magnetic properties of rock formations of outliwestern Wyoming and northeastern Utah 09 p1336 N68-19279 and concepts for com-Survey of basic form lectronic equipment 20 p3450 N68-32613 Remanent magnetizati Washington e of lake Yakima basalt in (NASA-CR-1127) cations to practical reliability 20 p3488 N68-32760 13 p2057 N68-23217 Application of testing to [NASA-CR-1128] vare programs 20 p3488 N68-32779 Anhysteresis and remanent m nation curves of (RAE-LIB-TRANS-1289) Fault data for reliabili electromechanical equip (RISO-M-709) ity prediction of electronic and 14 p2297 1468-24552 20 p3489 N68-33099 ick, and remanent and Reliability control problems of high temperature 16 n2652 N68-27239 20 p3452 N68-33185 Paleomagnetism of Marys Peak all, Oregon, relates its cooling history to its remanent magnetization in geomagnetic investigation mental concepts for reliable and safe nuclear reactor instrume [RISO-M-722] 21 p3723 N68-33897 18 p3065 N68-29622 Radial logic and in achemes for increasing [RAE-TR-67306] index redundancy REMELTING U MELTING of systems 21 p3673 N68-34151 Tie Vasto S/A 21 p3677 N68-34745 (UCRL-18228) Remote and rapid soil is tions using high speed ngineering of winged use over cities 22 p3966 N68-35707 Systems and reliab

(SC-DC-67-1922)

01 p0057 N68-10379

omatic control system trol systems, compute

03 p0331 N68-12090

SI

Ri

P

0

160

IN

25555555

C

[NA

flow cont [NT

INA

Experimental devices for remote controlled physical easurements on irrudiated platonium fuels Report on development of cloud chamber and research with elementary particles [AD-668706] 16 p2752 N68-27178 RENDEZVOUS U ORBITAL RENDEZVOUS
U SPACE RENDEZVOUS onium fuels 03 p0334 N68-12768 (EUR-3619.F) Training programs in health physics, nuclear en-gineering and radiation applications, applied to agricul-ure, radiobiology, food processing, medicine and Martian surface characteristics and remote sensing for biological considerations RENDEZVOUS GUIDANCE Advanced antenna techniques for rendezvous and lunar landing radar systems [NASA-CR-764] 16 p2626 N68-28135 04 p0580 N68-13883 Remote control of time shared computers for data [PRNC-102] 16 p2601 N68-28232 Optical rudar and tracker development for pacecraft automatic guidance during rendezvous 19 p3306 N68-31771 and information processing [PB-175666] 06 p0804 N68-15195 Report of Joint Satellite Studies Group, Oslo [JSSG-3] 20 p3585 N68-32450 Inhibitory control concept for eliminating human operator decision load during manipulator control 06 p0783 N68-15925 Spacecraft radar present and future applications in indexvous and soft landing Literature survey of air regeneration in scaled enrendezvous and soft lan [NASA-TM-X-60473] Design concepts for supervisor-controlled remote unipulation system 23 p4020 N68-36488 20 p3410 N68-32451 Low temperature research reports on tin - effects of impurities, superconductivity, thermal effects, and transport and electrical properties [AD-672357] 21 p3756 N68-34569 RENDEZVOUS SPACECRAFT 06 p0784 N68-15926 Integrated random vibration-electrical test method for demonstrating performance of rendezvous radar Telemetry signals for automatic control of irrigation Weapons Research Establishment Annual Report 1966-67 (FTD-MT-65-82) 08 pl148 N68-17890 14 p2364 N68-25509 Design and application potentials of general purpose, dexterous, cybernetic machines for human augmenta-RENDEZVOUS TRAJECTORIES 23 p4192 N68-37058 Method for obtaining optimal multiple impulse or-bital rendezvous and applications to specific case of coplanar, circle-to-circle rendezvous [NASA-CR-90336] 02 p0269 N68-11840 Experimental stress analysis activities in European [NASA-SP-5047] 09 p1289 N68-18870 (REPT.-15) oreason constraints and trajectory interfaces for launch, rendezvous, spatial, deorbit, and entry phases of earth orbital mission [NASA-CR-1015] 24 p4351 N68-38263 Remote control of computers - computer printouts REPRESENTATIONS of survey data [TR-67-679-1] 10 p1504 N68-20245 Signal representation and analysis - statistical estima-tion of intrinsic dimensionality and parameter identifi-Arrangement and operation of optical equipment for remote macroecopic observation of radioactive samples in reactor char IBJ-870/XIV/PS) [AD-661210] 03 p0320 N68-12029 Time optimal rendezvous trajectories for variable 12 p1903 N68-21999 Signal representation and analysis - properties of on-Gaussian continuous parameter random processes sed in detection theory thrust intercepting and orbiting space vehicles [NASA-CR-1036] 12 p1965 N68-22202 Electrical and electronic aspects of automation and mote control on ships - annotated bibliography Differential equations for simulating satellite motion in rendezvous orbits ted bibliography 13 p2046 N68-23930 remote control o [TDCK-49991] 03 p0320 N68-12055 Reliability of information from networks of remote systems with dispersed units [FTD-MT-24-389-67] 20 p3435 N68-32378 12 p1966 N68-22260 Representation theorems for Banach algebra and lo-Quasi-optimal control technique for space vehicle at-titude, bounded acceleration rendezvous in free space, and aircraft landing problem [NASA-CR-1099] 16 p2636 N68-28307 cally compact groups [MATSCIENCE-54] 08 p1193 N68-17571 Microelectronic data and remote control system for Third degree functional polynomial representation of constitutive equation of nonlinear viscoelastic polyethylene [NASA-TM-X-61231] esting 21 p3692 N68-34325 Thrust vector optimization for of maneuvering spacecraft with or ization for coplanar rendezvous raft with orbiting satellite 18 p3161 N68-29674 ter control of mass spectrometers 21] 21 p3694 N68-34672 11 p1791 N68-20626 Digital computer ([NASA-CR-96821] Representations of algebra of bounded operators in Hilbert space Minimum fuel guidance for time-open rendezvous, orbit transfer, and orbit transfer with tangential Digital computer techniquanipulator, control algoriti ique for controlling remote rithme, and tasks for human 11 p1722 N68-20642 Representations for solutions of linear functional dif-ferential equations [NASA-CR-93953] 11 p1729 N68-21192 nominal impulses [NASA-CR-86073] 18 p3165 N68-30222 22 p3840 N68-35027 Capacitive discharge welding machine for remote epairing of thermocouples attached to in-pile irradia-Mobile aircraft-type launchers for space rendezvous MDC-TR-67-98) 22 p3959 N68-35351 [MDC-TR-67-98] repairing of thermocouples tion experiments [AI-AEC-MEMO-12710] Representation of accretive bilinear forms in Hilbert space by maximal accretive operators Literature survey of astrodynamics problems on in-rocept, transfer, and rendezvous trajectories NASA-CR-61999] 22 p3963 N68-35902 ators 12 p1898 N68-22206 23 p4070 N68-37164 tercept, transfer, and [NASA-CR-61999] REMOTE HANDLING SU/2/ group 13 p2122 N68-24239 Nonlinear represe [JINR-P2-3648] REPAIRING U MAINTENANCE Machine oriented language using simplified English for information retrieval through remote typewriter Representation of simple numbers by polynominals of two unknowns REPEATERS 03 p0327 N68-12780 (REPT.-67-22) Antenna design and very high frequency repeater ex-seriment carried on applications technology satellite or voice communications 16 p2698 N68-27772 Computer controlled state space model for remote omic manipulation tasks Group extensions and repres ntations of sets 18 p3104 N68-30091 08 pl137 N68-18080 for voice communici [NASA-CR-90507] 02 p0272 N68-11831 [NASA-CR-93360] Summary representation method of determining rectangular sandwich plate stability under complex boundary conditions using finite difference theory Invariant imbedding and sequential interpolating fil-lers for nonlinear processes [RM-5507-PR] 05 p0640 N68-14905 Bibliography on remote sensing of resources related space flights, and aerospace sciences NASA-CR-93738] 10 p1521 N68-19870 [NASA-CR-93738] difference theory 19 p3378 N68-31714 Novel designs of small, linear, single frequency radio peaters for FM tactical transceivers Telemanipulation for equipment maintenance in radioactive zones of proton synchrotron [BNL-TR-180] 12 p1856 N68-22735 Integers of irreducible complex representations of group of triangular matrices on simple finite field [RTS-4268] 20 p3517 N68-33608 [AIL-2282-1] 13 p2026 N68-23350 Lead shielded cells for spectrographic analysis of h (3-200) Irreducible complex representations of group of tringular matrices over prime finite field RTS-4266) 20 p3518 N68-33609 Coding transformation and remembering in human verbal performance [AFOSR-68-0528] 14 p2208 N68-25604 IJEN-188-DQ/I-641 19 p3221 N68-30954 angular matri (RTS-4266) Aerial instrumentation and remote sensing REPRODUCTION (COPYING) techniques for survey on natural resources [NASA-TT-F-11887] 21 p3692 N68-34353 REPLACING Electrostatic display devices for reproduction printing, thermoplastic recording, and photoplastic imagine techniques. Assessing F-9J aircraft service life and replacement by A-4 aircraft in advanced jet pilot training program [INS-RC-23] 13 p1993 N68-24022 Mass spectrometric method to find probability of monatomic gas in free molecular flow, surviving sur-face cullision and remirval from gas phase 17 p2923. N68-28401 12 p1849 N68-22312 Lunar maps composed of lunar photographs reproduced with optimum retention of photometric REPLICAS Use of surface replication, extraction replication, and thin film electron microscopy in study of microstructures of dispersion strengthened materials [NASA-TN-D-4461] 69 p1353 N68-18999 Decontamination, impurity removal, ventiliation, delectrostatics for air cleaning processes NYO-841-12] 18 p3116 N68-30343 17 p2969 N68-28880 [AD-666059] REPRODUCTIVE SYSTEMS Thermal-vacuum stressing of replica diffraction Effect of sprayable, strippable protective coating on Nutritional requirements and breeding behavior of pocket mice [NASA-CR-92980] 07 p0948 N68-17148 [NASA-CR-93782] 10 p1559 N68-20053 painted substrates [NADC-MA-6805] 20 p3509 N68-32525 Numerical model of world oceans based on equa-Mutagenic effects of chronic and acute gamma radiation on Duhlbominus female fecundity [AECL-2791] 09 p1280 N68-18895 RENAL FUNCTION tions of state [UCRL-50354, PT. 1] 16 p2651 N68-27087 Monomethylhydrazine effects upon renal function in REPORTS Gamma radiation effects on reproductive system and [SAM-TR-67-61] 01 p0013 N68-10809 Western Research Applications Center operations report with emphasis on marketing [NASA-CR-90039] 01 p0154 N68-10072 embryonic development of frogs [NASA-TT-F-11966] 23 p3997 N68-36318 Transverse acceleration effects on human kidney functions

FAA study of near mid-air collisions - reporting

08 p1118 N68-18242

ical report preparation

13 p2174 N68-23536

procedures and policy [AC-00-23]

[AGARD-SPEC.-I, REV. 1]

SNAKES

REPULSION -

REPUBLIC MILITARY AIRCRAFT
U MILITARY AIRCRAFT

09 p1282 N68-18921

Cycloserine and oxytetracycline distributions in renal lymph, urine, and plasma of mongrel dogs [NASA-CR-89910] 16 p2396 N68-27398

Viscous flow properties in nephron operation theory [NASA-CR-95707] 17 p2827 N68-29475

REQUIREMENTS

mission requirement profile nts from overall system profile 06 p0911 N68-15683 Development of mis subsystem components [NASA-SP-6503]

RESCUE OPERATIONS

Helicopter rescue and evacuation operations [AGARD-CP-24] 09 pl 272 N68-19325 Military and medical aspects of helicopter operations

09 p1272 N68-19326

Rescue and casualty evacu on roles for helicopters 09 p1272 N68-19327

Aircrew problems in aeror 09 p1272 N68-19328

Psychophysiological effects on crews due to lack of visual physical fitness and rescue ope [FTD-MT-24-124-67] ts of long overwater flights il orientation, and need for tions training 18 p3013 N68-29985

tems for orbital safety (TR-0158/3520-82/-11 23 p4175 N68-36526

ARCH
CRITICAL PATH METHOD
DYNAMIC PROGRAMMING
GAME THEORY
HIGH TEMPERATURE RESEARCH
LINEAR PROGRAMMING
MINIMAX TECHNIQUE
NONLINEAR PROGRAMMING
NUCLEAR RESEARCH
OPERATIONS RESEARCH
SADDLE POINTS [GAME THEORY] NI

Air Force basic research on high performance, fila-tent-reinforced composites and single crystal whisker (OAR-67-00101 01 p0069 N68-10511

Overview on status of various electrical engineering related research studies [AD-659540] 01 p0045 N68-10749 01 p0045 N68-10749

stration - su [NASA-CR-93723] 10 p1615 N68-19693

Conference research reco endations on lunar and my, exobiology, NASA atellite developments,

INAS-NRC-1403] 10 p1595 N68-20376 conductor devices

16 p2743 N68-27393 V/STOL sircraft classifica figurations, and flight research [NASA FACTS, V. 2, NO. 3]

17 p2807 N68-28967

Planning for national [ICAS-12] 19 n3272 N68-31700 mplifier optimization 20 p3401 N68-32409 [NASA-CR-96226]

Theoretical research on high energy physics sum ICOO-1428-641 23 p4126 N68-37000

various fields of science Results of Soviet research in Antarctic regions (NIC-TRANS-2559) 24 p4250 N68-37720

RESEARCH AIRCRAFT
NT AVRO 707 AIRCRAFT
NT B- 70 AIRCRAFT
NT FD 2 AIRCRAFT
NT NORD 1500 AIRCRAFT
NT W- 2 AIRCRAFT
NT U- 2 AIRCRAFT

NT X-15 AIRCRAFT NT XH-51 HELICOPTER

Preliminary design concept of jet lift research air craft reaction control system 04 p0564 N68-13099

Conceptual design of No tions research supersonic air [NASA-CR-66416] op V/STOL jet opera-05 p0604 N68-14046

produced by peripheral jet stability, and propulsion and ound effect machine, PV-1 05 p0606 N68-14885 Ground effect domain flow, aerodynamics and control of experimental gr [NT-15-1967]

RESEARCH PACILITIES

Western Research Applicati report with emphasis on market [NASA-CR-90039] ns Center operation Ol p0154 N68-10072

Air Force Office of Scientific Research organization urrent research program, and research accomplish-[AFOSR-67-0300] 01 p0154 N68-10199

Test facilities summary for Fluid Dynamics Institute 01 p0046 N68-10334

UCLA cyclotron labor program, staff, and compu [AD-659389] 01 p0107 N68-10465

ar physics research at Purd [COO-1420-134] 01 p0109 N68-10526

NASA operating p

01 p0155 N68-10775

01 p0121 N68-10957

is summary including lasma physics 02 p0292 N68-11138

studies in surface, app [NASA-CR-90378] i report 1966 i peogress of N arizing scientific an

02 p0194 N68-11260

tal facilities for producing neutron bean temperatures in light water-moderate

pool reactor [AMMRC-TR-67-01] 02 p0237 N68-11479 Research facility and tele-uring wind velocity, wind d n equipment for mea-tion, and atmospheric

[DF-MS-67-68] 02 p0195 N68-11507

Economic and on convential ind (EUR-3616.D) cts of nuclear technology 02 m0293 N68-11798

nce and progress sum-eneral, neutron, and [PR-P-75] 02 p0249 N68-11814

re prospects for U.S. arch programs 02 p0209 N68-11901

03 p0377 N68-12578 [GA-8114]

fications for isothermal arbide 03 p0380 N68-12697 EURAEC-1763

cilities, organization, and ral Observatory at Rome 03 p0416 N68-12769

uclear research projects status reports 03 p0399 N68-12805 Vision research in military and government laborato-

[AD-661870] 04 p0451 N68-12983 History of aeronautical and space research at Langley Research Center-1917-1967 [NASA-EP-45] 04 p0441 N68-13148

of Minois 04 p0556 N68-13234 erdepartmental and arch activities at Univ

Project study for in current proton linear neutron facility, and m [AECL-2750] se neutron generator - high celerator, high flux thermal 05 p0642 N68-14338

g for new and extended computer Systems plan

facilities (DLR-MITT.-67-20) 05 p0634 N68-14762 Brief descriptions of theoretic vestigations in high energy and n [COO-1371-43] al and experimental in-uclear physics 05 p0720 N68-14816

Physics research projectical physics ects in ato mic, nuclear, and

06 p0883 N68-15184 is research pro-AR-8 06 p0893 N68-15229

government research laborators [NASA-CR-91664] tivity and innovation in 06 p0929 N68-15494

1966 06 p0930 N68-15671 activities in solid state orgy, and electronic, man

Summaries of research physics, chemistry, metall netic, and optical propertie [AD-663181] Geographical distribution of the control of the con

and facilities [NASA-CR-91656] 06 p0930 N68-15755

Research center for flighting bodies, and hunar las (NASA FACTS 0-4/8-67) ing supersonic aircraft,

06 p0767 N68-16050

-OAR-607-2, V. 11 07 p1181 N68-16376

in solid state physics, es, fluid physics, solar physics and re NP-171171

07 p1035 N68-16556

07 p0982 N68-16673 [EUR-3568.F1 remarch, and r [AD-6636991

08 p1228 N68-18007 in solid state phys DOR-533] 08 p1150 N68-18078

mechanics, fi mis, rurafied graphy, and ti

NASA-TM-X-53647] OR p1243 NGS-18195 d, orbital an

NASA-CR-934851 p1279 N68-18706

mucleur reacto 09 pl335 N68-19014

sary for New Zes-Innd nuclear [NP-17190] 09 p1394 N68-19064

activities at mucleur 09 p1283 N68-19088

Appropriations for NASA ent, facilities construction research and develop (REPT.-1181) 09 p1453 N68-19442

10 p1560 N68-20242

NASA sustaining to NASA-UNIVERSITY II program grants and 10 p1596 N68-20384

(ORNL-4170) tor materials research 10 p1540 N68-20426

[NASA FACTS 0-5/10-67]

11 p1679 N68-20991 of ARGAS experimental rator at nuclear research facility Judich, Go (JUL-510-TP) 11 p1630 N68-21331

11 p1786 N68-21753 IAFCRL-68-00111

at of DOD rese n per [MAM-68-3] 11 p1806 N68-21761

high field ma 12 p1855 N68-22154

12 p1857 N68-22946

n facility insta tion at linear elect (AERE-R-55911 AD-667606 n optical technology 13 n2109 N68-23765

rch and facilities pro 13 p2062 N68-23793

Research and develop pacecraft Center in Texa NASA FACTS 0-9/10-67 operations at Mann

13 p2049 N68-24163 ent of scien research in Rus [JPRS-45494]

14 p2377 N48-24707 NASA fact s Wallops Station sucket NASA FACTS 0-11/12-67

14 p2235 N60-24723 narch Center

NASA fact sheet on Ame (NASA FACTS 0-2/12-67) 14 p2235 N68-24784

51

IQ

phy

8

Aus Swit [All

Avi

(CA

Pi (SA

RESE

0

nd management of Institute on es in Germany Research projects and m Meteorological Satellites in [BMWF-FB-W-68-13] Survey on fluid [ARL-68-0061] 14 p2235 N68-24806 RESEARCH PROJECTS ques of operation of Flow evaluation and to Research projects on vironments, and molecu [NASA-CR-90535] hypersonic nitrogen ret [NASA-TM-X-59637] 14 p2243 N68-25325 ry in North Sea 15 p2448 N68-25733 Research projects on a techniques and equipment [NASA-TT-F-11785] ng, and fuel element storage uclear plant in Italy 15 p2499 N68-25761 Construction, pilot testis operation at EURATOM m (EUR-3901.I) [ESD-TR-67-467] University of Toron Goddard Space Flight Center and university cooperative research programs [NASA-TM-X-63228] 15 p2421 N68-25779 Neutron activation analyses of standard ref [NBS-TN-428] analysis facility design, and nterials 15 p2499 N68-25871 Lewis Explorer Post program to interest high school udents in aerospace technical and professional fields students in aerospace tech [NASA-TM-X-52387] nd professional fields 15 p2546 N68-25935 Research facility activities on ion exchange, organic nemical purification, crystallization, and zone melting NBS-TN-429] 15 p2412 N68-26115 (SEL-67-089) chemical purific [NBS-TN-429] Report on development of o search with elementary particles of cloud chamber and [AD-668706] 16 p2752 N68-27178 Space-related research activities, facilities, and courses at university in fields of biological sciences, engineering, and physical sciences (NASA-CR-95346) 16 p2770 N68-28092 History of NASA Goddard Space Flight Center through 1963 [NASA-SP-4301] 18 p3056 N68-30317 Metallurgy and metallography, solid state physics, asic chemistry, and research facilities ATR-7] 18 p3191 N68-30727 Congressional proceedings covering testimony on likeation of federal laboratories 20 p3614 N68-32710 Aerodynamics, structural and materials sciences, data handling and computer technology, control and instrumentation, propulsion, and mathematics research at Indian Aeronautical Laboratory 21 p3676 N68-33942 Experiment facilities of aerodynamic division of Na-onal Physical Laboratory at Teddington, Great and engine [NPL-AERO-1256] 21 p3676 N68-34233 Brief description of Marshall Space Flight Center (NASA-TT-F-11480) 21 p3798 N68-34733 Supersonic and hypersonic wind tunnels using flexible plate and axisymmetric nozzles with two closed loop air compressor plants [BRL-TN-1694] 21 p3677 N68-34743 Functional description of high flux isotope reactor [ORNL-3572, REV. 2, V. 1B] 21 n3728 N68-34755 SADKO-2 underwater laboratory for two aquanauts PRS-46427] 22 p3852 N68-34930 Telecommunication on studies of Canadian defense research laboratories summarized for 1967 [DRTE-1195-U] 22 p3964 22 p3964 N68-35021 Research project summaries on cosmic rays, ac-celerator physics, linear accelerators, nuclear spec-troscopy and structure, cyclotrons, radioactivity, and nuclear physics theory [NASA-CR-96099] 23 p4117 N68-36573 Nuclear physics research facility - neutron physics, electromagnetic transitions, charged particle reactions, beta decay, and gamma ray spectroscopy with radioac-[REPT.-1] (RLO-1925-11) 23 p4121 N68-36838 Research activities at German aerospace institute during 1967 23 p4109 N68-36978 Summary data on varius research activities of Hawaii Institute of Geophysics 23 p4057 N68-37120 Closed loop facility designed to study MHD genera-tor using argon-cesium working fluid [NASA-TN-D-4867] 23 p4042 N68-37259 23 p4042 N68-37259 [NP-17252] European Southern Observatory, La Silla, bulletin describing facility development and meteorological ob-

23 p4042 N68-37377

24 p4250 N68-37853

24 p4351 N68-38263

Construction of spectrograph and laboratory facili-ties for aeronomy research [BNWL-795] 24 p4250 N68-37853

Experimental stress analysis activities in European

pace sciences research 03 p0383 N68-12012 ulaion research and adv oced concepts 03 p0411 N68-12317 planning for national Project and manager weather modification pro [NASA-TM-X-60721] 03 p0364 N68-12375 onospheric physics, and radar and radio astronomy earch programs of Arecibo /Puerto Rico/ Iomospher 04 p0499 N68-13097 Operational perfo grams of linear accel [SLAC-PUB-351] and improvement pro-04 p0491 N68-13756 Meteorological physics res Australian economic problem earch and applications to 05 p0685 N68-13950 cecraft Center experience with in contracting 05 p0762 N68-14624 small business firms ([NASA-CR-65916] Materials science research on inorganic nonmetallic aterials, metallic solids, polymers, and solid state NASA-CR-917791 06 p0893 N68-15143 Proceedings of AGARD meeting of September 1967 [AGARD-67/3] 06 p0929 N68-15349 Regional distributions of federal research and velopment funds compared with distributions of runds compared in R and D active (NASA-CR-91657)

Decision 06 p0929 N68-15482 processing systems and ry to optimum antenna research summaries 06 p0800 N68-15647 Decision theoretic antenna papplication of coherence theory system design - compilation of re Research projects on physical sciences, plasma ynamics and physics, and communication sciences 06 p0801 N68-15884 Research projects on nuclear, neutron, solid state, and theoretical physics [AECL-3009] 07 p1047 N68-16624 Research program on m research and development p [NASA-CR-93000] dologies of managing 07 p1102 N68-16889 e research - electromagnetic wa electronic equipment, field theory, lar ha physics, semiconducting film, inform and computer control Microwave research ropagation, electronic e ptics, plasma physics, s on theory, and compute IBMRI-R-452.32-67] 07 p0978 N68-16927 Geodetic study program, and navigation system for [NASA-TT-F-11451] 08 p1199 N68-17612 ear dynamical systems research on systems invariance principles, Liapunov functions, erra and functional integral equations gral equations 09 pl320 N68-18811 [NASA-CR-61632] 10 p1554 N68-19552 Applications of research projects and experimental sults in social sciences 10 p1616 N68-20345 Aerospace chemistry, electrochemistry, glass an oron studies, inorganic chemistry, reactivity an echanisms research, and characterization of liquids chemistry program [AFOSR-67-2237] 10 p1493 N68-20424 [AFCRL-67-0512] il p1628 N68-21051 NASA research on sonic be generation/review/ 11 p1624 N68-21415 onal Center for 12 p1932 N68-22606 Research projects for developing extraterrestrial mineral resources technology [NASA-CR-94590] 13 p2059 N68-23547 Nuclear chemistry research projects on recoils from 13 p2118 N68-23671 INVO-2771-251 Office of Aeros research applications [OAR-68-001, V. 1] earch conference on 13 p2175 N68-23931

iid dyna

mics resu

arch program in Japan 24 p4248 N68-38432

02 p0167 N68-11836

solid state devices, optical st, materials, and physics of

on exobiology, extraterrestrial er cular evolution

Research and dev int operations at Manned Spacecraft Center in Texas [NASA FACTS 0-9/10-67] 13 p2049 N68-24163 for large launch vehicles rch and de at NASA facility in Alabama [NASA FACTS 0-10/12-67 13 p2049 N68-24164 Accepted on electromagnetic aspects of antennas, electromagnetic waves, magnetohydrodynamics, and measurering devices [TB.553] 13 p2031 N68-24306 [TR-553] Research projects and managemeteorological Satellites in Gerr [BMWF-FB-W-68-13] agement of Institute on 14 p2235 N68-24806 Federal supported aca c research for education. economy, and public [NASA-CR-85721] 14 p2377 N68-24924 Space program resear and engineering, teleco earch projects on systems analysis ecommunications, guidance and control, propulsion, and data sys [NASA-CR-94676] 14 p2349 N68-25601 Electrochemical research and development - high ergy and high power density devices for spacecraft Electroch [NASA-TM-X-59782] 14 p2195 N68-25640 istry - radioelements. Research projects in ch analytical apparatus, and inst [MLM-1417] 15 p2404 N68-25706 Research project a s on spacecraft sterilization and planetary qua [NASA-CR-94806] 15 p2396 N68-26293 Summary inform materials research at f North Caroli University of N (AD-6685011 15 p2539 N68-26338 ormation on sonic boom research in boratories, serospace industry, and 15 p2388 N68-26852 Summary of government reservoom generation, propagation ar ent research projects on sonic 15 p2388 N68-26853 Current sonic boom research in aerospace industry United States 15 p2388 N68-26854 Universities research projects on sonic booms and utline of research on generation and propagation of outline of research on gen ionic booms 15 p2388 N68-26855 Solid state physics research on lattice dynamics, ectron paramagnetic resonance, radiation effects, and low temperature properties [ORNL-4250] 16 p2740 N68-27031 Summary information on research projects of instru-properties of ORNL. ORNL-4219] 16 p2662 N68-27536 Biophysics research projects on cellular synthesis, growth, and division [NASA-CR-95360] 16 p2600 N68-28004 Electron microscope research projects and laborato-[COO-1721-2] 16 p2612 N68-28006 fast ceramic reactor (GEAP-5541) 16 p2704 N68-28011 Research projects on defect structure, mechanical behavior, electrical and optical properties, and ther-16 p2746 N68-28194 [NASA-CR-95358] Research [NBL-242] rch and development reports /chemistry/ 42] 16 p2616 N68-28290 development programs Reactor research and [ANL-7427] 16 p2711 N68-28321 Summary information on research projects of plasma physics laboratory of Princeton University [MATT-Q-25] 17 p2946 N68-28334

Soviet research of

Radiochemistry re queous reactors and

and nuclear saf [ORNL-4229] afety

NASA-CR-95761]

[NASA-CR-95582]

medical monitoring, and (ATD-68-33-108-1)

Research and advan nuclear electric prop

Research data on systematrol, apacecraft propulated and liquid procedures

viented biotelemetry,

umentation 17 p2830 N68-29040

molten salt reactors, m, gas cooled reactors,

17 p2844 N68-29309

development data on spacecraft design and cs systems, and chemical

17 p2972 N68-29415

17 p2974 N68-29544

analysis, guidance and , aerodynamic facilities

(REPT-15) To a

X

ed

06

on

06

om,

24

01

gh

40

ne

93

at

38

152

nic

153

try

154

ın

of

133

cs,

131

Fü-

36

104

106

11

cal er-

94

190

121

ma

134

try.

140

115

HEROTORIA

Transfer and utilization of org owledge by managerial person sizutional person of organizational research personnel in complex or-(NASA-CR-89837) 18 p3012 N68-29601 Research projects on space flight trajectory and aerospace systems analyses [NASA-CR-95806] 18 p3163 N68-29949 Electronics research - electromagnetic radiation, crystallography, automatic control, astennas, solid state physics, information theory 18 p3052 N68-30403 (SAPR-75) Application of superconductors in suclear resortions, space research, radio electronics, and computer technology (FTD-MT-67-20) 18 p3156 N68-30836 International legal problems in marine environment [PB-177724] 19 p3389 N68-31738 Air Force research projects (OAR-68-0004) 19 p3389 N68-31865 Deep Space Network - mission support, advanced engineering, development and implementation, and operations and facilities [NASA-CR-96159] 19 p3245 N68-32183 Aerial instrumentatio techniques for survey on a [NASA-TT-F-11887] and remote sensing 21 p3692 N68-34353 te and rocket research ctivities in India 21 p3771 N68-34356 [RPU-S-41] Review of research activities in NASA during first 10 NASA-TM-X-61181) 21 p3773 N68-34675 Reactor research and develops [IDO-17242] 21 p3728 N68-34767 NASA university programs aeronautics and space research research centers [NASA-SP-185] ums in personnel training, sarch, and laboratories and 22 p3981 N68-35564 X ray astronomy, and atomic, state physics research directed to tromagnetic spectrum range [CU-4-68-AMC-00099-PHYS.] c, molecular, and solid toward extending elec-22 p3937 N68-35898 plicability to textile and apparel industries [NASA-CR-97195] Research activities at German aerospace institute during 1967 23 p4109 N68-36978 Weapons Research Establishment Annual Report 23 p4192 N68-37058 Summary data on varius research activities of Hawaii stitute of Geophysics 23 p4057 N68-37120 Progress report on electronic [QPR-89] research 24 p4323 N68-37760 Research project summaries on medical sciences, in-romation and communication theories, nonlinear stems, and electronic devices 24 p4240 N68-38125 Second Bulgarian artificial satellite tracking station /description/, and trends in development of inorganic, organic, and physical chemistry in Poland [JPRS-4661] 24 p4358 N68-38325 Trends in development of inoganic, organic, and physical chemistry in Poland Survey on magnetofluid dynamic research in India, Austria, Germany, Sweden, Great Britian, France, Switzerland, and Netherlands [ARL-68-0062] 24 p4326 Mes. 2024 24 p4220 N68-38327

Systems and scientific research programs of Civil viation Administration

Radar clutter research program for army air defense

Progress report for electronic sciences laboratory [SAPR-7] 24 p4335 N68-38480

Oceanographic reports on sea and wave parameters, nderwater research vehicles, and geostrophic currents and equatorial circulation

Analysis of trend in free world atomic power general on, uranium production, resources, and requirements stil 1985

[AD-674412]

ICAL-UB-2508-E-11

RESEARCH VEHICLES

[ORNL-TR-1825]

RESERVES

24 p4292 N68-38472

24 p4230 N68-38475

24 p4251 N68-38038

-17 p2989 N68-28954

RESERVOERS

Dam, reservoir, levee, and river constriction effects on model river basin and reservoir system - flood con-rol and forecasting [W-51] 03 p0340 N68-12483 Influence of additional evaporation from reservoirs and irrigated tracts on atmospheric precipitation [P-3826] 15 p2460 N68-26273

charge time for unsteady flow of incompressible is fluid from conical reservoir 16 p2646 N68-27620

Measurement of local velocities as functions of posi-tion coordinates for flow of elastic liquids from reser-voir into round pipes 21 p3680 N68-33990

RESIDUAL GAS

Gas composition analysis for stationary coaxial plasma injector [INR-861/XVIII/PP] 09 p1404 N68-19488 Adaption of gas chromatography to identification destination of residual gases in high fired thorium (NLCO-1006) 13 p2011 N68-23309

RESIDUAL STRESS Residual stresses in overstrained thick walled (AMMRC-TR-67-03) 03 p0420 N66-12113

Residual static strength and slow crack growth behavior of duplex annealed Ti-8Ai-1Mo-1V sheet [NASA-TN-D-4358] 08 p1250 N66-17588 Subsurface residual stre-ball bearings during rolling [NASA-TN-D-4456] s on steel inner races from

ict 10 p1534 N68-20199 Residual strength of aluminum alloy sheets containing fatigue cracks
[MP-241] 11 p1713 N68-21040

Elastic radiation from inte of crystal structure in solids al strains or alterations 12 p1953 N68-21964

Critical analysis of calculation methods for residual rength of materials and structures in presence of fatigue cracks [AGARD-ADVISORY-11] 13 p2161 N68-23762

Optical anomalies of corundum and relation to sidual elastic stresses 16 p2688 N68-27374

Structural inhomogeneities in corundum boules due to residual stremes, plastic deformation, and mossic structures 16 n2689 N68-27377

nniques for controlling warpage and residual s in welded aluminum alloy structures for Saturn Tech NASA-CR-612351 18 p3087 N68-29852

Subsurface residual str races of SAE 52100 steel b [NASA-TM-X-52422] 19 p3283 N68-30955 Fatigue strength related to it rotating beam of case harder d to internal stress distribution

d steel 20 p3496 N68-32560 Residual stress effects on fracture strength of AISI 301 stainless steel and Ti-5AI-2.55n titanium cracked thin walled cylinders [NASA-TN-D-4777] 20 p3604 N68-33191

Bending creep tests to motion and local strain measurems under constant loading re continuous deflec-ments on 8-foot box 21 p3784 N68-33795

stresses in winding glass fiber reinforced plastics (FTD-HT-67-268) 22 p3971 N68-35237 RESIDUES

Chemical residues on capsumodel subassemblies after bioas [NASA-CR-94372] de mechanical training 12 p1824 N68-22520 of nonvolatile residue of Automatic meas caning solvents

17 p2888 N68-29326 Incineration and microwave treatment of human fecal matter to determine concentration ranges and identities of liquid, paseous, and solid products [NASA-CR-73247] 23 p3998 N68-26571

RESEN BONDING

Silane coupling agents used as primers, and add [NASA-TM-X-53676] 04 p0526 N68-13510 rical bonding between

Mechanical properties of glass fibers and resin matrix [NASA-CR-93975] 11 p1718 N68-21086 i studies of fracture resin bonded materials 16 p2778 N68-27387

ner said coated with thermosetting resis [19,3383 N68-30943 Polycarbonate resis used as hot melt adhesive in [LA-3890]

ACRYLIC RESINS
ADDITION RESINS
EPOXY RESINS
ION EXCHANGE RESINS
PHENOLIC RESINS
POLYAMIDE RESINS
POLYETHER RESINS
POLYETHER RESINS
POLYUTHER RESINS
SILICONE RESINS
SILICONE RESINS

SILICONE RESINS SYNTHETIC RESINS THERMOPLASTIC RESI THERMOSETTING RESI VINYL COPOLYMERS

Effects of adding glass beads and powdered querts to resins used in manufacturing glass fiber laminates [ARRE-R-5304] 05 po600 N68-14048 Water effects on interface properties of glass resinceposite structures [AD-64597] 11 p1717 N68-20733

Finsion track density measurement in glain and Lexan polycarbonate resin with scattered light [KAPL-3412] 22 p3933 N68-35703 RESISTANCE

Conductance in tunnel metal insulator semicondu-tor structures 16 p2745 N68-27830

Active RC filter utilizing inverse feedback amplifier 20 p3449 N68-32466

U COEFFICIENTS RESISTANCE HEATING

02 p0256 N68-11684 and capacity of small, tion heat sources 05 p0636 N68-145)3 ments on tube wall of EATR-4163]

Resistance heating in heat exchanger [NEL-272] 05 p0757 N68-14715

Weld heat affected zone structure and properties of QT 35 steel determined by resistance heating [COA-NOTE-MAT-5] 17 p2896 N68-28384 RESISTANCE THERMOMETERS

Josephson junctions for use in millidegree noise ther-

05 p0639 N68-14460 rmometer, lead wire heat nducting epoxy fastening temperature in cryogen-

cally cooled space simu (NASA-TM-X-52386) 07 p1099 N68-17044 Use of high purity m (NASA-TT-F-11548) in thermometry 09 p1449 N68-18813

Platinum resistance to ated in cryogenic temper [NASA-TN-D-4499] es tested and evalu-10 p1531 N68-20324

ESISTIVITY
U ELECTRICAL RESISTIVITY RESISTOJET ENGINES

Performance tests of ammonia resistojet thrustor system for various spacecraft control maneuvers (NASA-TN-D-4249) 01 p0128 N68-10562 Resintojets and other hardware for spacecraft auxiliary electric propulsion NASA-TM-X-61074] 13 p2143 N68-23321

Resistojet control system for attitude control and orbit operations of Manned Orbital Research Labora-

OTY NASA-CR-66600] 14 p2194 N69-25446 Manned Orbital Research Laboratory resistings con-rol system analysis 14 p2194 N69-25447 NASA-CR-66601] 14 p2194 N69-25447

Biowaste utilization analysis for defining resistojet introl system for Manned Orbital Research Laborato-

Ground and flight test plans for defining operational capability of ammonia and hydrogen resistojet control system for Manued Orbital Research Laboustory. NASA-CR-66603] 14 p2194 NaE-23449 14 p2194 NGE-25449

5

RE

k

q

RES

[]

(1

di (F

fr

RES

rei [B

23

wa

(UCRL-TRANS-1364)

22 p3931 N68-35575

10 p1598 N68-20485

Resistojet design and development for Manned Or-bital Research Laboratory [NASA-CR-66604] 14 p2194 N68-25450 Strange particle resonant states from pion proton in-teractions Proof and decision procedures based on resolution [AFOSR-68-1823] 24 p4278 N68-38434 11 p1749 N68-20661 RESOLVENTS U PROBLEM SOLVING Applications of Monte Carlo analysis to tungsten colloidal, and plasma Electrostatic, resi propulsion for satellit [NASA-CR-88064] ust and control resonance absorption (NASA-TN-D-4545) 15 p2548 N68-26873 12 p1903 N68-21924 RESOLVERS Electric propulsion for transferring payloads from Resonance production in meson-nucleon interacpulsion for the pulsion pulsion synchronous orbits 21 p3760 N68-34694 Phase demodulation of resolver output signals, and occuracy of demodulator used for design of parking orbits to [HSD-TP-7091] [NASA-CR-91503] [UCRL-17984] 12 p1927 N68-22418 04 p0480 N68-13777 Life test data for resistojet thrustors operating with Resonance production in the negative pion plus roton interactions at 3.9 GeV/c Initial value computation of resolvent for auxiliary equation of radiative transfer [RM-5520-PR] 09 p1447 N68-18439 ammonia or hydrogen [NASA-CR-66604A] 22 p3955 N68-35828 UH-511-171 12 p1935 N68-22694 Performance test data for ammonia resistojet at-titude control system of stable platform satellites [NASA-TM-X-1677] 23 p4160 N68-36512 Thermal neutron fission and capture neutron cross Analog computer to solve high order algebraic equa-ons with real coefficients section estimation for transurani [CONF-680307-18] um isotopes 14 p2311 N68-25050 20 p3445 N68-33475 RESISTOJETS Search for strangeness plus 2 meso 14 p2312 N68-25074 U RESISTOJET ENGINES Solid state plan position indicator resolved sweep RESISTORS generator [RD-68-29] energy region about first pion-nu [LNF-68/14] tegration of helium 3 in gamma 21 p3660 N68-34313 NT POTENTIOMETERS (RESISTORS)
NT THERMISTORS U RESOLUTION 15 p2519 N68-26361 Pion-proton interactions, elastic scattering, sonance production and decay 16 p2719 N68-27159 High performance thin film resistors for microcir RESONANCE [ECOM-01230-10] 06 p0816 N68-15789 CYCLOTRON RESONANCE ELECTRON PARAMAGNETIC RESONANCE Cold substrate deposition of thin film resistors and ai-stationary methods and computer program for ating resonant states of atoms and molecules calculating resons capacitors [NASA-CR-86044] FERROMAGNETIC RESONANCE 11 p1673 N68-21230 16 p2720 N68-27209 MAGNETIC RESONANCE MICROWAVE RESONANCE NUCLEAR MAGNETIC RESONANCE Heat transfer analysis of thin film resistor pulsed to Resonance capture of orbital electron induced by Cause low power explosion [HDL-TR-1376] electron antineu (BNL-TR-203) OFTICAL RESONANCE
PARAMAGNETIC RESONANCE
PLASMA RESONANCE
PROTON MAGNETIC RESONANCE
PROTON RESONANCE
PROTON RESONANCE
RESONANT VIBBATION 15 p2436 N68-26442 16 p2729 N68-28076 NT NT High vacuum beam trapping in Astron ther-monuclear reactor [UCID-15305] 17 p2950 N68-29049 Amplitudes, branching ratios, and inelastic pion-toton reactions to study resonances and their decay UCRL-18154] 17 p2934 N68-29050 proton reactions to study resonan UCRL-181541 Effects of potassium and sodium containing substrates on load lives of metal film resistors
[FTD-HT-67-242] 19 p3252 N68-31487 Satellite tracking reports reveal new earth satellites NT RESONANT VIBRATION NT SPIN RESONANCE in resonant orbits [NASA-TM-X-63263] 17 p2973 N68-29469 Selection and characteristics of high voltage power supply surge resistors connected with high gradient tubes in Linac preinjectors [BNL-12370] 21 p3670 N68-34607 Probability distributions distributions for sigma hyperon-two na resonance/1660/ decay Fitting procedure for calculating absorption and fis-0/ decay 01 p0114 N68-10837 e of uranium 235 (EUR-3936.E) 18 p3115 N68-30274 Measurements of effective resonance integral, ther-al attenuation factor, and Doppler effect in gold Computer analysis of subsidiary resonance henomena in microwave magnetic materials at X Synthesis of n-port networks from RC lines, lumped tors, and capacitors [NAA-SR-12499] and frequencie ECOM-29631 03 p0372 N68-12206 24 p4238 N68-37479 18 p3054 N68-30664 Mathematical model for resistor transistor elements with variable threshold Hollow cathode carbo [TR-0158/3250-40/-5] on resonance radiation source Variational calculation of weak resonant wave in-03 p0384 N68-12515 24 p4238 N68-37612 19 p3320 N68-30876 Fortran 4 program for least squares method analysis f neutron resonance data RESOLUTION Analysis of X ray spectra from resonance neutron NT HIGH RESOLUTION NT RADAR RESOLUTION NT SPECTRAL RESOLUTION [GA-6906] 03 p0396 N68-12653 [ANL-TRANS-604] 19 p3325 N68-31100 Steric inhibition of resonance by ortho chlorine toms in styrenes and benzene carboxylic acids - ul-raviolet spectral evidence Gamma ray spectra from resonance neutron capture in Ba 135 and Pr 141 [ANL-TRANS-605] 19 p3327 N68-31187 Resolution criteria for optical and photographic 04 p0469 N68-13526 INAVTRADEVCEN-IH-137] Approximation method for calculating infrared radiative corrections of resonant processes [LNF-68/26] [9 p3330 N68-31521 Betatron resonance used as extraction system for 03 p0343 N68-12289 Ambiguity resolution for SPASUR radio inter-[UCRL-17604] 05 p0708 N68-14235 Transport equations for calculating beterogeneous resonance integrals allowing for moderator flux and fission product temperature distribution [EIR-132] 19 p3312 N68-31927 ferometer direction finding system
[NRL-6603] 05 p0630 N68-14378 Pion resonance in kaon interactions with neutrons in deuterium bubble chamber [SLAC-PUB-347] 05 p0714 N68-14550 Resolution corrections to neutron spectrometry by 19 p3312 N68-31927 pulsed source time of flight technique [AWRE-O-8/67] 06 p0877 N68-15886 Interference between resonances in neutron cross Determination of lower bounds of eigenvalues and seary of resonances in scattering of electrons from Resolution criteria for Fabry-Perot and Fizeau multi-ple beam interferometers [GA-8203] 07 p1040 N68-16318 Radiative capture of neutrons in and between esonance, and use of epithermal capture for studying 07 p1001 N68-17203 20 p3542 N68-32485 ulation infinite depth of field optical pickup 128325/14] 13 p2067 N68-23342 ow noise parametric natural resonance amplifiers h large bandwidth nuclear param (BNL-11903) IGER-12832S/141 07 p1044 N68-16520 with large bandw [TRANS-2437] 20 p3451 N68-32917 Measuring arrangements and results of resolution tests with four objectives for TA-7M aerial reconnais-Effective surface area of fuel clusters for resonance Interference of neutral rho and omega resonances in annihilation reaction positive electron plus negative electron yields neutral pion gamma and nutrino gamma integral calculations [AECL-2775] 07 p1029 N68-16536 [TDCK-50175] 15 p2466 N68-25957 nce parameters of multiple energy f resonance cross sections 07 p1046 N68-16613 Statistical decision theory for determining relation-ship between resolution and noise spectra in Fourier [BNWL-SA-1334] [NP-17476] 20 p3545 N68-32949 Boron 10/neutron, alpha particle/ lithium 7, lithium 7 resonance relative cross sections in keV region [NASA-TN-D-4783] 21 p3735 N68-33763 Protactinium 233 neutron capture reson nce in-[AFCRL-68-0115] 16 p2711 N68-26985 [WAPD-TM-612] Resolution and analysis of proton-nucless, and elastic scattering experiments [BNL-12342] 17 p2923 N68-28393 07 p1052 N68-16887 Secular characteristics of motion of asteroids in Resonance integral and Doppler effects in tungsten [NASA-CR-96742] 21 p3766 N68-34078 Optimum display of radar acquired weather conditions on meteorological chart for level of resolution needed by air traffic controllers 18 p3109 N68-30287 [NAA-SR-12500] 09 pi381 N68-18481 Radiofrequency resonances atoms excited by electron impac [UCRL-18178] ces in mercury and neon sobaric analog states 09 p1395 N68-19211 21 p3740 N68-34336 BRIGIT computer program for proton elastic scat-Neutron time-of-flight spectrometer using scintilla-Perturbation analysis of existing resonant satellites [NASA-TM-X-63328] 21 p3771 N68-34426 ORO-2972-341 10 p1561 N68-19531 [NYO-3914-1] 18 p3075 N68-30346 Resonance in electromechar piezoelectric effect [ECOM-2905] Resonance production effects on pion pair angular distribution of reaction pion proton approaches limit of proton 5 pion Spatial resolution effects on critical mass calcula-tions of reflected and moderated uranium-metal 10 p1530 N68-19886 22 p3925 N68-34998 Three dimensional resonance effects on particle mo-tion stability near earth-moon equilateral libration (RFP-1133) 21 p3724 N68-34147 Relativistic three body theory used to study three ody resonances by decay products resonating in pairs on in automated theorem proving 31 23 p4025 N68-36262 body resonar [TH/68/22] 22 p3928 N68-35320 [REFT.-261] NASA-CR-93769] 10 p1593 N68-20119 Regge poles and occurrence of resonances in pi N nd KN collisions Operational testing and measurement of resolving time of radiation counting assembly [CEA-R-3440] 24 p4257 N68-37962 Satellite resonance w ude-dependent gravity

ably 24 p4257 N68-37962

EX

in-

ten

124

18

94

40

ma

md

59

for

09

by

76

on-

50

tes

69

'n.

74

ce

64

76

00

87

21

27

25

rs

17

19

m

53

im

78

36

26

28

N

Short-lived particle resonant decay products include hyperor 22 p3931 N68-35624 Argund analysis of Regge ampi itudes gives rise to [IC-68-51] 22 p3935 N68-35821 ntermediate nuclear struc-al cross section measure-keV isolated resonance tures based on neu-ments between 400; ments between 400 and 1200 ke [CEA-R-3279] 22 p3936 N68-35846 tical tenso describe decay distributions of resonal 22 p3936 N68-35863 Decay distribution of framework of quark model [TPJU-19/67] nces discussed in 22 p3937 N68-35864 Effect of nucleus deform density in rare earth region (JINR-P4-3925) ation on neutron resonance 23 p4127 N68-37002 Omega exchange contribution of deuterium ons to kaon production [COO-1428-82] 24 p4314 N68-37789 nces of gadoli Neutron resona [JINR-P3-3882] 24 p4316 N68-37939 Methods for correction of neutron resonance mea-ICNAEM-511 24 p4316 N68-37958 Test and specification checkout of taut band panel [QR-3] 24 p4259 N68-38205 Specular reflection of reso sce lines from cesium sapphire plasma [REPT.-68-9E5-GASES-R1]

24 p4328 N68-38469 RESONANCE CHARGE EXCHANGE

Fermion trajectory interference, and exchange echanisms in backward pion-nucleon scattering ucleon scattering 09 p1389 N68-18621 [TH/236] Meson resonances in high mul

tiplicity processes 17 p2945 N68-29500 Experimental determination of resonant charge exchange cross section of thermal velocity mercury atoms and singly charged mercury ions over two decade energy range [NASA-CR-72398] 18 p3140 N68-30824

Elastic scattering and re kaon particle interactions ce charge exchange of on resonances 22 p3927 N68-35194

Proton on hydrogen atom sonance charge exchanges ussimolecular orbitals system symmetric calculated using 24 p4305 N68-37472

RESONANCE PROBES

Method of measuring doubly differential cross section of neutron scattering by molecules by use of resonance detectors to fin final energy nergy 01 p0104 N68-10360 [JINR-P3-3413] INASA-TM-X-631631 11 p1764 N68-21535

Epithermal neutron spectra a died by means of thin resonance f [FTD-HT-23-821-67] ed cross sections stu-18 p3114 N68-30142

Resonance probe for m from antiresonances, plass uring electron density sheath thickness, and neutral electron collisi [NASA-TT-F-11666] 18 p3144 N68-30290

nission coefficients Microwave reflection and for inhomogeneous plasma d 22 p3939 N68-34956 Theory of plasma resonance plane probe 23 p4139 N68-36311

RESONANCE SCATTERING

gular correlation in by polarized nuclei 01 p0108 N68-10485 Calculation of T-odd resonance scattering of phot [BNL-TR-137] Multigroup cross sections calculated for plutonium 239 using single level isolated line shapes with different progress resion widths. average fission width [NAA-SR-12515] 05 p0706 N68-14095 Resonance scattering p quasi-particle method for [JINR-E2-3454] problem in symmetry breaking buryons and quarks 05 p0710 N68-14341

Plasma resonance during radio wave scattering on seteor trail models 06 p0837 N68-15405 Mathematical model for resonance effects in plane Mathematical model for read-wave scattering from corrugated structure 07 p0964 N68-16930

Relative cross section for thermal and resonance neutrons in energy spectra of long range alpha particles emitted in thermal neutron fission of uranium 235 [INR-817/IA/PL] 07 p1054 Ne8-17120

m thresholds in positron-hydrogen sy [NASA-TM-X-63113] 08 p1211 N68-17238

Isobaric analogue re es in nuclei of closed (JINR-E2-3551) 09 p1389 N68-18707

num isotopes 09 p1389 N68-18708 [JINR-P3-3564] Mossbauer effect theo teristics in Mossbauer exp [NASA-CR-75658] and absorption charac-nents on transducers 09 p1410 N68-19132

mels to resonances in s by carbon 12 11 p1751 N68-20843 Application of coupled cha attering of low energy neutro

eory of stimulated resonance laser synchronization by FTD-MT-66-871

12 p1915 N68-22129 mechanical Raman scatter alysis of stimulate during transition fro nt to resonance sca

12 p1922 N68-22130 s with muons and elec-lectron scattering 12 p1923 N68-22168

Fermion trajectory parameterization scheme leading to superconvergence (IC-67-30) 12 p1924 N68-22221

Asymptotic formulas for frequency redistribution ap-proximation of resonant radiation scattering in plane layer of large optical thickness 12 p1916 N68-22380

Parameters of particle stru-function of medium and heavy ([BNL-TR-189] cture in neutron force 12 p1929 N68-22512

Resonance scattering of selected elementary parti-cles in hydrogen bubble chamber - cross sections and ty states 12 p1933 N68-22660 (UCRL-18041)

Orbiting and res es of elastic scattering at potential barrier energies JINR-P2-36921 14 p2297 N68-24681

Neutron scattering cross ssonance energy regions to ction measurement in spin determination of (CEA-R-3360) 14 p2307 N68-24837

Neutron and absorp resonance scattering for h (BNL-12269) cross sections and 14 p2314 N68-25156

R-matrix theory for elastic and reactive molecular

15 p2517 N68-26191 Measurement of neutron scattering resonances in fis-

16 p2718 N68-27124 Resonance electromagnetic scattering by finite cir-cular cylinders

17 p2848 N68-28396 orptive peripheral model calculations of produc-nd decay resonance scattering angular distribu-

19 p3328 N68-31211 Absorption spectrum analysis on sputtered gold atoms in hollow argon cathode discharge
[AFAL-TR-67-346] 19 p3340 N68-31394

Resonance scattering of radiation by interacting round state atoms COO-1112-1621 20 p3544 N68-32782

Nonuniqueness theore ration of sum rules [NP-17474] m for narrow resonance salu 20 p3545 N68-32951

Positive kaon plus proton yields positive kaon plus negative pion plus delta resonance interaction at 4.6 and 9 BeV/c 20 p3546 N68-32996 LUCRL-182013

Resonance scattering of iridium 191 gamma rays with 129 keV energy [ITEF-X-529] 21 p3742 N68-34436 Phonon resonance scattering and thermal conduc-tivity of alkali halides doped with divalent ions 22 p3948 N68-34939

Mathematical models for predicting resonances and inematical peaks in pion-nucleon interactions 23 p4111 N68-36036

Resonance scattering effects and superconducting reperties of nonmagnetic alloys of simple metals with ransition metal impurities

23 p4146 N68-36063 Experimental deter-cuttering effects in le-nutrun capture gamma nination of nuclear resonance ad 208 by double scattering of 23 p4112 N68-36116

Singularities of quadrangular graphs containing in-ermediate state resonances (IFVE-STF-67-16-K) 23 p4127 N68-37013 Neutron elastic scattermediate resonances g cress section studies of in-24 p4306 N68-37498

RESONANCE TESTING

Width of cyclotron resonance line determined by methods usually employed in calculations on pressure broadening of spectral lines [AD-662911] 06 p0883 N68-15163

Operation manual for steady state resonance tests through flow at rocket motor acoustic test facility [NASA-CR-91670] 06 p0823 N68-16018

Resonance apparatus for testing materials fatigue at high temperatures [FTD-HT-67-445] 23 p4040 N68-36702

U CAVITY RESONATORS RESONANT PREQUENCIES

beryllium oxide rod resonant frequenc

(GEMP-537) 01 p0141 N68-10010 Experimental technique resonant frequencies of casimulating shipboard mounti[NRL-MEMO-1800] setermining fixed-b

01 p0144 N68-10602 Transfer matrix methodequencies and normal refor predicting natura les of finite row of skin

stringer panels [AFML-TR-67-234] 01 p0145 N68-10684 Resonant gravity harr es of synch

[NASA-TM-X-63041] 02 p0267 N68-11626 stained for thickness twist or and flexural vibrations of

Equations of motions obta overtones of thickness shear rectangular, AT-cut quartz pla [ONR-TR-5] 03 p0407 N68-12359

Dynamic mocleur or frigerators, microwave tion by nuclear spin mic orientation, and op-[UCB-34P20-OR4] 03 p0397 N68-12704

resonance pulses for us in solids 04 p0558 been

Resonant frequencies of longitudinal sound waves of gas column in circular-conical shell and in tube of vari-able section 04 p0497 N68-13845

Capacitor loading techniques for transverse elec-omagnetic resonators in ultrahigh frequency range ECOM-2885) 05 p0635 N68-14325 tromagnetic res [ECOM-2885]

Polycrystal ferrites with narrow resonance absorp-on lines at superhigh frequencies for use in high equency radio equipment 05 p0637 N68-14527

es for almost linear Resonant respo MRC-TSR-769) 06 p0863 N68-15527

Rayleigh-Ritz mett requencies and vibra for calculating natural modes of low aspect ratio (NLR-TN-F.260)

07 p1090 N68-16625 Resonant frequencies of el om calculation of harmonic tic structures obtaine citation from vibratio

CONERA-NT-1191 08 e1246 N68-17425 Natural frequencies igenvectors by Rayler rinciples ed for eigenvalues and one and orthogonality

08 p1247 N68-17503 determining geopoter (NASA-CR-932451 08 p1238 N68-17698

rum produced by large cavity 08 p1210 N68-17959

frequency body resonan ground vibration condi-

[D3-7562] 09 p1286 N68-18294 measuring Mouse effect in thin films

09 p1341 N68-18555 Turbulent boundary (NASA-TN-D-4486) ct on panel flutter 09 p1442 N68-18721

responding mode shape orthotropic plates under

09 p1444 N68-19114

S

Ri

RE

0

44

1

0

RES

8

19 p3213 N68-32148

Collective oscillations of atoms in Hartree-Fock ap-Low frequency mechanical vibrator for producing arge sinusoidal forces Resources analyses and cost estimates of program an for optical technology Apollo Extension System NASA-CR-61926] 20 p3595 N68-33483 [ARL/SM-310] 10 p1570 N68-20138 16 p2640 N68-28159 Equations of motion for cor from resonance vibration tests [NASA-TM-X-61205] Resonant frequencies and nodal pattern modes of vibrating cylindrical and conical frustum shells [NASA-TN-D-4428] 11 p1794 N68-20954 Remote sensing techni photography for earth reso [NASA-CR-92360] plex structures derived sology of multiband color rth resources applications 24 p4258 N68-38166 21 p3790 N68-34443 Upper and lower bounds for four lowest natural vibration frequencies of truncated wedges and cones with pinned-pinned, clamped-pinned, clamped-free, and free-free end conditions Parametric resonance and structural stability model of uniformly reinforced flat plates [NASA-CR-97191] 23 p4181 N68-36592 NT HIGH ALTITUDE BREATHING T PRESSURE BREATHING Radioactive dusts inhaled by hu system and deposited in nasopharys windoine NT CAVITY RESONATORS human respiratory arynx, traches, and 12 p1974 N68-22052 Matrix form of equations of motion used in iterative occases for determining normal modes and frequen-Weakly coupled resona processes for determin cies of launch vehicles [NASA-TN-D-4530] ICEA-R-32341 07 p0947 N68-17046 gain in log periodic anti [AFCRL-67-0325] 01 p0029 N68-10261 External respiration, gas exchange, and energy ex-penditure index changes in weightlessness [NASA-TT-F-11406] 07 p0947 N68-17112 12 p1976 N68-22275 Electrostatically focused klystron tube modifications Resonant frequencies of circular cylindrical, ellipti-cal, turbine shaped, and conical shells [NASA-TT-F-11719] 12 p1979 N68-22808 (NASA-CR-903381 02 p0189 N68-11381 12 p1979 N68-22808 Blood lactate levels, resp ration, and oxygen con-NASA-TT-P-117-0 Computer program for evalution of effective crom-ection in unresolved resonance region 12 p1943 N68-22979 rtworks using resonators sumption at several exertion levels [NASA-TT-F-11809] 18 p3010 N68-30400 [AFCRL-67-0472] 03 p0331 N68-12126 (GA-8003) RESPIRATORS Thermal deformat Radiation detectors, air samplers, fire and smoke de-tectors, and respirators for hazard control [UCRL-50007-67-1] 02 p0209 N68-11061 Bird voices and resonant tuning in helium-air mix-04 p0518 N68-13428 bility in cylin 13 p1997 N68-23080 Ring current stab [JINR-P9-3474-2] 07 p1045 N68-16586 Respirators and clothing for protecting respiratory Thermal effects on reso ant coupling hydromagnetic Active lattice of RLC reso transfer functions of complex fr [AFCRL-67-0562] ators for synthesis of oscillations in earth magne [ISAS-422, V. 33, NO. 4] [JPRS-43578] 03 p0307 N68-12748 To p1509 N68-19959 14 p2321 N68-24435 Battery-powered air purifying respirator to provide rotection factor of 1000 against particulates when sed with half and full face masks, rigid helmets, and Design and performan system resonator in synchr [ANL-TRANS-460] e of multiple acceleration Vibration study of res et frequencies and modal s of seven stepped cantile ver plates 15 p2566 N68-25740 12 p1855 N68-22444 [LR-494] optical resonators for ification [UCRL-50263] 05 p0617 N68-14989 Resonant frequencies, vibration functions of Rosman 1 antenna stru microwave generation (REPT.-341-2-TRIA) Design, and development of closed system respiratory simulator for space cabin atmosphere control [MR-1285] 08 p1137 N68-18072 15 p2441 N68-26343 tructure 15 p2422 N68-25788 Electromagnetic mes ing capacity of fused ca resonant beam method nt of mechanical damp-na by means of dynamic Experimental and theoretical study of resonances in K-39/p.gamma/Ca-40 reaction [NP-17384] 15 p2521 N68-26525 RESPIRATORY IMPEDANCE 16 p2690 N68-27623 Electronic instrumentation hange and electrocardiograph for body imp Cross wave resonant instability of Faraday waves [TR-2] 16 p2642 N68-27102 Aging rate of coldweld sectors in single sideband units [ECOM-2946] change and electroc unattached electrode (NASA-CR-86048) d quartz crystal resona-Tin particle size effects on nuclear magnetic resonance and Knight shift in superconductors 16 p2742 N68-27217 21 p3644 N68-34548 18 p3046 N68-30071 RESPIRATORY PHYSIOLOGY Resonant systems for dyna sic transducer evalua-Conference proceedings on respiratory physiology in Fitzgeralds piezoelectric disk and theory on audio frequency resonances and sound beams in crystals [NASA-TN-D-4625] 16 p2717 N68-28259 21 p3688 N68-33640 [NASA-CR-72435] aerospace environm [NASA-CR-93455] 10 p1465 N68-20151 Respiratory physiological space flight, bioinstrument research recommendations miderations of mar Plate theory and tables for resonant vibrational equencies of uniform, thin, elastic, isotropic, flat 21 p3673 N68-34182 ntation requirements, and m generator with external Semiconductor quan 10 p1465 N68-20152 AE-190S1 17 p2979 N68-28410 [JPRS-46504] 22 p3886 N68-35566 ysiological changes in lung and thorax due to pro-ed space flight effects Magnetoresistivity of single crystal potassium mea-ared by resonant frequency of helicon standing wave Foreign literature on millimeter band resonators, unik 10 measurements, ternary systems for semicon-actor materials, nuclear chemistry, and Venus probes 23 p4107 N68-36352 10 p1465 N68-20153 17 p2958 N68-28815 Gravitational and acceleration stress effects on lungs Open microwave resonators, baseu or inciples, for millimeter wave operation 23 p4031 N68-36353 during space flight Structural vibration, displacement, and resonant frequencies of radar tower during antenna operation [AD-669239] 18 p3034 N68-29830 10 p1465 N68-20154 Physiological effects of adding inert gases to spacecraft cabin atmosphere Diakoptics uncoupling method for determining tur-time backet frequencies by applying matrix calculus to general eigenvalue problem Literature survey of open microwave resonator technology in U.S.S.R. 10 p1467 N68-20164 24 p4265 N68-37894 Respiratory drug requirements for manned space 19 p3300 N68-31178 agnetic relaxation 10 p1467 N68-20168 Frequency dependence of parama in copper Tutton salt in liquid helium t NASA program of multidisciplinary research on use of extraterrestrial resources [NASA-CR-91290] 04 p0572 N68-12902 On-line study of pulmonary nitrogen washout by lium temperatures 19 p3353 N68-31275 (AMRL-TR-67-77) Resonant frequencies ar Extraterrestrial resource utilization for lunar and space exploration and life support systems [NASA-TM-X-60870] 08 p1235 N68-17350 11 p1639 N68-20795 strain concentration in ring reinforced cylin [TM-405.3361-31] Comparative reliability of human respiratory gas exchange determinatio [NASA-TT-F-11466] 13 p2003 N68-24330 Detection and exploitation sources for manned space flight n of extraterrestrial orthotropic circular [NASA-CR-96314] Radioactive tracer studies of biosynthetic and 08 p1236 N68-17352 [RLO-1387-8] 14 p2196 N68-24774 Prediction of vibrati frequencies and modes for shells, using Rayleigh-Ritz Lunar resource contribution to h o lunar exploration 08 p1236 N68-17357 free-free truncated conical RESPIRATORY RATE Decision theory and extraterrestrial resource utiliza-tion in space mission planning Spirometer modification [NASA-TN-D-4772] 20 p3603 N68-33057 tion of respiratory flow data [NASA-TN-D-4234] nt frequencies and modes of clamped skew 08 p1237 N68-17359 01 p0062 N68-10057 Pneumocardiophone device for continuous pulse and respiration rate monitoring [FTD-HT-67-484] 07 p0950 N68-16676 AE-21951 21 p3788 N68-34035 Extraterrestrial resources in life support systems for RESONANT VIBRATION 08 p1134 N68-17366 lesign of viscoelastic da t vibration control Evaluating rangeland resources by multispectral photography, line-scan imagery, thermal infrared and k-band radar imagery, and spacecraft color photogned structures for resorates as function of size and student pilots 14 p2199 N68-24883 Vital capacity and expiration and age of navigation personn 01 p0142 N68-10451 Limit cycle and control surface resonance characteristics of X-15 stability augmentation system [NASA-TN-D-4287] 02 p0160 N68-11545 [NASA-CR-93181] Tracings of forced expiration in the control of the 08 p1178 N68-17671 in rate determined by Developing extraterre estrial resources technologies anetary resources to support 14 p2200 N68-24884 Theoretical investigation of effects of non-ideal sup-port cunditions on flexural vibrations of structural Electronic devices for recording instantaneous human respiration frequencies [CNAEM-30] 14 p2200 N68-25119 (NASA-CR-93726) 10 p1520 N68-19819 [USL-822] 09 p1439 N68-18275 in on technology resources and Lyapunov control nunt plant [NASA-CR-94421] Heart rate, ventilation rate, and skin temperature in resting human beings before and after food intake [AMRL-TR-67-228] 18 p3010 N68-30361 synthesis of highly reso 11 p1807 N68-20871 12 p1854 N68-22774 Analysis of trend in free world atomic power genera-tion, uranium production, resources, and requirements until 1985 [ORNL-TR-1825] 17 p2989 N68-28954 Continuous methods for controlling oxygen supply of human body

Bending vibration as suspended components [NASA-TM-X-33733]

is for vehicle with flexibly

15 p2565 N68-25714

X

83

12-

12

00

61

ry

48

39

12

×

18

1

d

2

p

RESPIRATORY REPLEXES

Pulmonary functions and respiratory reflexes during ace flight 10 p1466 N68-20157

Respiratory reflexes for clearing epithelial surfaces respiratory mechanisms during space flight 10 p1466 N68-20159

Effect of superhigh frequency electromagnetic field conditioned reflex regulation of cardiac and respir tory activity in rabbi 23 p4001 N68-37285

RESPIRATORY SYSTEM

NT NOSE (ANATOMY) NT PHARYNX

NT TRACHEA

Food and air moving through irradiated environment man, and calculation of dose probability and mag-itude for SNAP 19 and SNAP 29 (SC-CR-66-2144) 04 p0538 N68-13082

Oxygen uptake com uter for analysis of respiratory

AMRL-TR-67-17 05 p0614 N68-14505 ovascular and respiratory systems e emotional stress 05 p0611 N68-14672 Reactions of cardiovascula in men during negative emotic

Respiratory systems role in thermoregulation during space flight

10 p1466 N68-20161 Aerosol distribution in respiratory tract, and air con-mination in spacecraft cabin atmosphere

mosphere 10 p1467 N68-20166 Respiratory and nonrespiratory infections during colonged manned space flight

10 p1467 N68-20167 Dynamic response and sensitivity of the human espiratory control system

18 p3009 N68-30074 Hyperoxia induced pathol tory and cardiovascular syste

gical changes in respira-ns of rats 21 p3632 N68-33912

Cardiogram variations and external respiration mea-trements during human acute hypoxia 21 p3634 N68-33927

Computer program for calculating potential health hazards from plutonium oxide particle inhalation [SC-CR-67-2845] 22 p3813 N68-35670

Gravitational and inertial force environment effects on cardiovascular and respiratory functions in dogs and

chimpanzees [NASA-CR-97192] 23 p3998 N68-36568 RESPUROMETERS

Continuous methods for controlling oxygen supply of 19 p3213 N68-32148

U TRANSPONDERS

RESPONSE BIAS

Lunar surface bias on landing module altimeter

[NASA-CR-65795] 01 p0031 N68-10774 Automatic phase holding system for increased reliability and faster servo response times in Omega long range navigation system
(NELC-130) 02 p0234 N68-11330

Response bias of flying perso [NASA-TT-F-11370] nel to time shift 04 p0463 N68-13556

Digital simulation model for linear time-invariant ynamic systems with lumped parameters, and tim delays [MAC-TR-45] 08 pl156 N68-18202

Perceived changes in size and shape of highly luminous target and relation to associated stimuli [NASA-TM-X-59064] 16 p2606 N68-28157

Experimental study of time perception during information processing with short intervals [IZF-1968-10] 20 p3409 N68-32407

Synchrocyclotron frequency and amplitude control through grid pulse biasing of high frequency oscillator [JINR-P9-3805] 22 p3918 N68-35773

NT DYNAMIC RESPONSE NT GALVANIC SKIN RESP NT HEMODYNAMIC RESP

GALVANIC SKIN RESPONSE HEMODYNAMIC RESPONSES

MODAL RESPONSE PHYSIOLOGICAL RESPONSES

NT TRANSIENT RESPONSE

Stability and response of amplifiers and fluidic INASA-CR-721921 02 m0162 N68-11403 Energy response of neutron detector using cadmium loaded polyethylene spheres [LA-3595] 04 p0507 N68-13012 04 ±0507 N68-13012

dividual and gro nes of influentials to negative contingent [ORNL-TM-1817]

07 p1101 N68-16246 [EGG-1183-2158] 07 p1045 N68-16587

s of differential equa e very short respons Asymptotic methods one in which some var [KAPL-P-3341] 10 p1554 N68-19585

landing simulator with trol response 14 p2208 N68-25600 Manually controlled transfer functions for pi [NASA-TM-X-59607]

Analog computer for de manual control systems [NASA-TM-X-60204] ining pilot response in 15 p2399 N68-25712 Fast response time sili toconductive detectors

18 p3045 N68-29914 INASA-CR-860601 ects to acute cold exposure Responses of huma-related to metabolism

20 p3409 N68-32256 Transient respo ekscatter properties of (NRL-6717) 20 p3437 N68-32913

del of response patterns of single sakey lateral geniculate nucleus 22 p3810 N68-35176 Quantitative mod Is in macaque mo

NT RED REST

Physiological responses of pilots at rest and during reformance of instrument flight plan 14 p2197 N68-24864

RESTARTABLE ROCKET ENGINES

Successful engine restart in space of upper stage vehicle using cryogenic propellants [NASA-TM-X-1649] 21 p3775 N68-33683 tion of Atlas Centaur

Flight performance evaluat restart capability in earth orbit [NASA-TM-X-1647] 22 p3965 N68-35357 RESTORATION

Aging of paper and preservation and restoration of books and documents [TT-67-51400] 12 p1985 N68-22558

U CONSTRAINTS

U CONSTRICTIONS

RETARDANTS

gnition hardening of th materials - developm ting fabrics against ign ing of alpha-cellulose and cottor reelopment of fire retardants for pro-tinst ignition from nuclear weapor tecting fabrics against is burst [USNRDL-TR-67-125] 06 p0857 N68-15292

RETARDING

Clutter suppression by pulse amplitude modula for coherent radar [TR-0158/3230-46/-9]

15 p2429 N68-26688 Compton suppression us tion and anticoincidence sing pulse-shape discrimin techniques for scintillation

[BNWL-SA-1515] 15 p2470 N68-26790 Retardation of recovery gromium by finely disperses y and recrystallization of ed particles of tantalum car-

[ARL/MET-64] 16 p2684 N68-28121

RETENTION (PSYCHOLOGY)

Engineering psychology and processes - memory capacity coding and mnemitic activity, pects of human memory and information theory, learning and operations FTD-HT-66-2201 02 p0168 N68-11236

ses in operator handling Memory and learning pro automatic control systems

02 p0169 N68-11237 information theory and hum 02 p0169 N68-11238

Formation of operative memory units in human ac-02 p0169 N68-11239

Remembering and reproduction of coded informa on by human operators

02 p0169 N68-11240 activity as functional

O2 p0169 N68-11241 Formation of mnemitic effect in children by grouping of materials 02 p0169 N68-11242 Memory functions during operator training 02 p0170 N68-11243

ge and retrieval processes in

Speculations on storage long term memory [NASA-CR-94547] 13 p2005 N68-23444

RETICLES

Colestial attit ring instrument using star mapping technique INASA-TN-D-4742) . 19 n3306 N64-31938

RETINA pations for calculating direct laser intensity lev numan retins are described and related to a al intensity levels as extracted from current lite

(SC-RR-67-563) 01 #0012 N68-10632

and functions [DOC.-12047-TDR1] 03 p0305 N68-12158

of for neurophysiological [P-3747] 11 p1640 N68-21019

cell control of excitability NASA-TT-F-115821

13 p2000 N68-23446 Preliminary data on effects to retina and cornea in test as [AD-667555] 13 p2002 N68-34127

Neurohistological, neuroek rophysiological data on retinal o ectrical, and neu rganization in primate

[RM-4912-ARPA] 14 p2195 N68-24354 Thermal model for retinal de rage induced by pub

14 p2200 N68-24887

Response mechanisms and spectra for color or in vertebrate retina studied with intracellular [J-228-6] 15 p2396 N68-26332

Mathematical models and computer program to termine effects of high intensity laser radiation on 16 p2596 N68-27170 [PA-TR-3678]

Ruby and neo in rabbits [MR-68-4] 16 p2596 N68-27349

sh blindness safe separa-Calculation of retinal and fis [AD-668549] 16 p2599 N68-27840

X ray irradiati ulation in rabbit [ORO-3599-1] 16 p2600 N68-28053

nd squirrel electrophysiologics muli varying in brightness and hu raphic observations Rat and ground sponse to light stimu ing electroretinogram

17 p2828 N68-28398

bon dioxide, and Q-awitched in (AD-670852) 19 p3210 N68-31466

Ruby laser energy effects on fur human iris [SAM-TR-68-34] 19 sal activity of 19 p3211 N68-32088

Laser applications in finding, material testing acionee, welding, ran-al tumors, and plasma NOLTR-68-53)

20 p3492 N68-32374 [SAM-TR-68-21]

Design and operating characteral instrument for tracking of a eristics of electro-optiback of eye INASA-CR-11211 22 p3816 N68-35109

Photographic recordings of re blackout on human centrifuge [SAM-TR-68-27] inal circulation duri 22 p3811 N68-35315

ETINAL ADAPTATION NT DARK ADAPTATION NT LIGHT ADAPTATION

/isual adaptation to underw er colors 01 p0013 NSS-10834 tion studied for

18 p3012 N68-30634 [TR-5] ment of Pulfrich tur-

get displacement 18 p3012 N68-30741 tric retina activity and deptation 21 p3634 N68-33923

RETINAL IMAGES

SUE

THE SAME

-

[GI

BUILD

loys

(CI

allo (US

26F [GI

RHEC

cha son [O]

RHEC

avia [N/

RHEC

RHEC

Electrophysiological correlates of perceptual masking in monkeys Molecular studies of reversible and irreversible phenomena in simple dense fluids Effect of radiative heat transfer in low Reynolds number hypersonic flow about blunt body [NASA-CR-94699] 14 p2370 N68-24659 lunt body 14 p2370 N68-24659 23 p4005 N68-36090 10 p1468 N68-20258 RETRACTABLE EQUIPMENT REVERSING flow to changes in Mach Gold braze investigation of multicycle metallic sibility of fabricating 30 watt/pound roll up solar and Reynolds numbe [NPL-AERO-1057] 14 p2240 N68-24729 panel array NASA-CR-942491 reversing bladders [NASA-CR-95986] 19 p3292 N68-31435 Calculation of supersonic flo lant bodies at small Reynolds no 12 p1818 N68-21943 c flows past axisymmetric Structural and analytical synthesis of spatial mechanisms of landing gear with articulated leg [NASA-TT-F-11749] 19 p3377 N68-31292 Heat transfer in turbulent flow, including effects of eversible chemical reactions NASA-TT-F-114021 14 p2180 N68-24754 High speed monorail rocket sleds applied to deter-ination of aerodynamic coefficients at high Reynolds 21 p3792 N68-33741 Fabrication feasibility and structural design of solar enerators with array deployment and retraction capa-Parts and materials application review for project management of space systems engineering [NASA-SP-6505] 01 p0067 N68-10120 [SC-DC-66-1967] 14 p2236 N68-25055 bility [NASA-CR-97208] 23 p3994 N68-36630 Effects of Reynolds number of models as function of angle of att [ARL-68-0030] r variation on flat plate RETRACTABLE LANDING GEAR U LANDING GEAR Decentralized review process for selection of private firms for major NASA contracts [NASA-CR-65934] 07 pl101 N68-16336 16 p2583 N68-27035 Drag coefficient and Reynolds number of burning RETRIEVAL DATA RETRIEVAL INFORMATION RETRIEVAL Historical review of scientific work on photovoltaic flects and on energy conversion devices using this efaluminum particles [NASA-TM-X-59145] 16 p2793 N68-27406 Pressure distribution cylinder in incompressi measurements on circular flow within critical Reynolds eculations on storage and retrieval processes in [NASA-CR-92679] 07 p0939 N68-16882 long term memory [NASA-CR-94347] 13 p2005 N68-23444 Review of dynamic analysis methods for automatic flight control design [AFFDL-TR-67-147] 15 p2440 N68-26249 (DLR-FB-68-08) 17 p2871 N68-28771 RETROBEFLECTION Cascade wind tunnel study of turbulence effects on ompressor efficiency loss at small Reynolds number nd high altitude from laminar separated flow on blade Computer analyses of retrodirective, and self adap-tive antenna phase control techniques for Mars probe [NASA-CR-977] 09 p1371 N68-18484 Studies review of pilot problumits in simulated lunar gravity [NASA-TM-X-61164] rms for one man flying 20 p3413 N68-33437 (K-TRANS-311 17 p2803 N68-29054 RETROROCKET ENGINES Review of research activities in NASA during first 10 Performance analysis of propulation system, retrorocket, altitude radar, radar altimeter, and television system of Surveyor 1 spacecraft [NASA-CR-93494] 09 p1430 N68-18656 Homogeneous gaseous injection into high speed minar viscous flows at large Reynolds numbers using years [NASA-TM-X-61181] 21 p3773 N68-34675 idealized Couette shear flow n [DOUGLAS PAPER-4362] Applications of ultrahigh vac [FTD-HT-67-214] 17 p2874 N68-29399 23 p4068 N68-36644 RETROSEQUENCING
U SEQUENTIAL CONTROL Axial flow in directed wall jet vortex tubes studied rapplication to guscous nuclear rocket technology NASA-CR-95730] 17 p2918 N68-29503 Review of recent foreign developments in laser RETURN TO EARTH SPACE FLIGHT (FTD-HT-67-216) for application to gast [NASA-CR-95730] 23 p4072 N68-36680 Spacecraft system to support two primates in weightless, earth orbital, extended flight in Apollo Ap-Viscous effects on pressure distribution and heat transfer on blunt cones at hypersonic speeds and using inviscid flow solutions REVISIONS plications Program /AAP/ [NASA-CR-66507] Theory and practice of modification of metals and al-05 p0743 N68-14617 (FTD-MT-65-524) 18 p2995 N68-29945 01 p0076 N68-10575 n trajectory analysis 07 p1079 N68-16537 Moon to earth rete [NASA-CR-92716] hal and Reynolds a ers in two dimensional Revision of Blue Streak missil to ELDO launch vehicle with hy [HSD-TP-7022] le design for adaptation drogen oxygen engines 19 p3372 N68-31161 flow around circular cylin [NASA-TT-F-11763] 18 p2998 N68-30337 Launch window analysis for round trip Mars missions Reynolds number effects on ge istics originating in boundary i face of sphere in free flight eometric flow charac-layer separation from Disturbance calculations for operative speed shancement of digital differential analyzer during [NASA-TM-X-61087] 13 p2149 N68-23360 Elliptic capture orbits around Mars and Venus for energy savings in spacecraft two way mission. [NASA-TM-X-61091] 13 p2149 N68-23361 18 p2999 N68-30658 IFTD-HT-23-797-671 19 p3246 N68-31348 Hydrogen bubble techn es and Reynolds numbers for higher flow veloci-REVOLUTION [MOTION] Performance and vehicle design concepts for earth [TN-5] 19 p3263 N68-31169 orbital logistics spacecraft [NASA-TM-X-61216] 21 p3780 N68-34393 REVOLVING Effects of wall temperature and magnetic field on flow field at stagnation point in low Reynolds number [RM-5340-PR] 20 p3391 N68-32515 Mathematical model for explosive waves in revolving cylinder NT MARS (MA SPACECRAFT) REUSABLE 05 p0648 N68-14899 Flow behavior in an electromagnetically driven confined vortex with high positive radial Reynolds num-Reusable launch systems or with rocket propellants [BMWF-FB-W-67-19] with air breathing engines REYNOLDS EQUATION Reynolds equation theory of solar differential reta-tion and meridional circulation [TR-0158/9260-02/-3] p.3749 N68-342
yortex shedding about large, stationary, and oscilla [RASA-Thx.61214]
Theoretical 06 p0916 N68-15250 21 p3749 N68-34202 Flight mechanics, and rusable launch systems rmodynamic aspects of r piggyback two stage 13 p2147 N68-23904 REYNOLDS NUMBER aerospace transporter (BMWF-FB-W-67-15) 21 p3682 N68-34326 06 p0909 N68-15266 Hydromagnetic boundary layer equations for alig magnetic field and large magnetic Reynolds number [AE-137A] 01 p0119 N68-100 Vertical, and horizon Theoretical performance of hypervelocity wind tununch comparisons for tic Reynolds number 01 p0119 N68-10841 reusable space flight syr [BMWF-FB-W-67-16] 22 p3852 N68-35301 [AEDC-TR-68-104] 06 p0917 N68-15869 Mathematical theory of axisymmetric steady com-ressible swirl flow with closed streamlines at high Adiabatic tube flow at low Reynolds number turbu-lence and heat transfer characteristics in thermal en-trance and downstream regions [NASA-CR-97098] 23 p4184 N68-36040 Computational and displomputer guidance and cont requirements for man-techniques for reusable Reynolds numbe [ARL-67-0140] 02 p0198 N68-11267 manned spacecraft [NASA-CR-61554] 07 p0950 N68-16896 Thermal unsteady state effect on coefficient of con-vective heat transfer during flow round spherical bodies at small Reynolds numbers Review of flow distribution on cylindrical bodies clined to free stream Reusable orbital pass [NASA-TM-X-53595] nsport system 09 p1431 N68-18662 [ARL/ME-284] 23 p4050 N68-36862 ment criteria for large reusable transport system for 1980s 13 p2153 N68-24092 02 p0291 N68-11752 Design and develo RH- 2 HELICOPTER U UH- 1 HELICOPTER Variation of sphere drag coefficient with Reynolds ballistic interplanetary (BMWF-FB-W-68-07) numbers and Mach nur (AEDC-TR-67-218) 03 p0296 N68-12010 RHENIUM Engineering feasibility launch vehicle systems [NASA-TM-X-53739] somics of reunable Thermal and electrical resistivities of rheni cryogenic temperatures and role of dissolution rosion assisted cracking of titanium alloys Maximum velocities of fish movement, and re-stance coefficient changes at various Reynolds num-23 p4176 N68-36622 LIPRS-43723] um alloys 04 p0599 N68-13065 REVERBERATION [PB-174294] 04 p0599 N68-13434 Thermal and electrical resistivities of rhenium at ryogenic temperatures Acoustic absorption prob reverberation rooms ns in constructing analog High order approximations in asymptotic solution of Reynolds equation for slider bearings [MTI-67TR87] 05 p0668 N68-14790 02 p0279 N68-11885 04 p0556 N68-13066 Supersonic flow past bodies of revolution with annular recesses for determination of length/depth ratio of recesses at various Mach and Reynolds numbers. [TG-230-T534] 06 pt826 N68-15489 Neutron capture and total cross sections, spins of energy levels, and resonance parameters for rhenium 187, menium 187, and zirconium 91
[GA-7820]
[OA-7820]
[OA-7820] onal characteristics of beration chamber Structural design and op 100,000 cubic foot acoustic 16 p2638 N68-27991 Analytic solution for acoustic field in closed space hind rectangular, simply supported plate excited by sundary layer turbulence Reynolds number effect on single stage axial flow rbine in air Thermal energy storage container integration with 24 p4348 N68-37677 [NASA-TN-D-4383] NASA-CR-931771 07 p0937 N68-16228 08 p1118 N68-17233 U REACTION TIME Effects of Reynolds number change on performance of axial flow turbine working in argon [NASA-TN-D-4432] 09 p1273 N68-18501 Elastic and inelastic fast neutron scattering from tan-lum, rhenium, and platinum

Ambient pressure effect on boundary layer transition

[AEDC-TR-68-36]

13 p1987 N68-23344

(ANL-73631

emittance of vapor deposited rhe [NASA-TM-X-1514]

08 n1212 N68-17400

09 p1354 N68-19347

Surface roughness effects on normal spectral

REVERSED FLOW

Analog analysis of flow reversal and water han pressure in reactor closed hydraulic rabbit tube fac [ANL-7336] 10 p1554 N68-19

ulic rabbit tube facility 10 p1554 N68-19506

EX

623

ach

129

tric

154

22

35

06

lar

71

on er de

54

33

15

17

C-

8

9

5

2

Preparation and reactivity of 5/6 and 5/7 ring or-ganometallic pi complexes of molybdenum, tangsten, and thenium 09 p1300 N68-19384 n ion induced fission of Excitation functions for he senium, lutetium, and thuli 11 p1750 N68-20675 Aqueous chemistry of free radicals and other inor-nic reactive intermediates of rhenium and cobalt JSC-113-P-4-9] 11 p1648 N68-21003 USC-113-P-4-9) nium niobium cylindri-Electrical perform [NASA-TN-D-4533] 11 p1632 N68-21766 stalline and polycrystal-12 p1955 N68-22269 Physical and mechas echnetium, hafnium, no cal properties of rhenium le metals, and related alloys reviewed in terms of ava [NASA-TM-X-61073] and costs 13 p2081 N68-23247 Electrolytic rhenium de ingsten surfaces on on molybdenum and 13 p2076 N68-23840 High temperature ultras ments in nuclear rocket en f rhenium sensor as high to NASA CR 722051 nic temperature measure-ine to determine feasibility 13 p2072 N68-24327 [NASA-CR-72395] n of neutron cross ctions of rhenium 14 p2317 N68-25360 (GEMP-587) Spectrophotometric tent with thiourea in rhe [NASA-TT-F-11735] on of rhenium congsten alloys 16 p2615 N68-28245 and rhenium electrodes rs in thermionic conver-Single crystal molybden for low work function coll-[NASA-CR-95979] 19 p3205 N68-31488 Surface interaction between polycrystalline rhenium and nitrogen 20 p3432 N68-33373 RHENRUM ALLOYS Formation and characterization of A15-type struure in chemical vapor deposited tungsten rhenium a 01 p0076 N68-10596 Tungsten-rhenium alloy thermocouples for nuclear reactor temperature control [CEA-R-3182] 03 p0344 N68-12648 Thermochemical, compatibility, and wettability stu-dies of high temperature molybdenum-rhenium base 09 p1298 N68-19258 ics of tungsten-thenium ermal neutron flux 12 p1873 N68-22383 Performance character alloy thermocouples under them [NASA-TT-F-1 [623] Mechanical properties of tungsten and tungsten rhenium alloys [NASA-TN-D-4567] 14 p2269 N68-24477 Creep, ductility, porosity alloy produced by arc meltin [USBM-RC-1274] y, and fractures of rhenium ng and power metallurgy 16 p2684 N68-28106 Field-ion microscope study of streak contrast effects for tungsten rhenium and molybdenum rhenium alloys 17 p2900 N68-28604 High temperature tensi rhenium alloys [NASA-TN-D-4728] ile properties of tungsten-18 p3094 N68-30605 Electrical resistivity and thermal conductivity of W-26Re [GEMP-562] 23 p4153 N68-36814 RHENIUM COMPOUNDS Chemical reaction and structure of Mo, Cr, Re, Mn, and W carbonyl compounds with azide ion 18 p3021 N68-29934 RHEOELECTRICAL SIMULATION Rheoelectrical analogy applied to calculation of aerodynamic characteristics of aircraft in steady or unsteady supersonic flow

17 p2802 N68-28556

Wave spectra of gaseous molecules, electron spin esconance of inert gases, and radiation effects on RNA

04 p0464 N68-12876

and DNA [AFOSR-67-2668]

RHEOENCEPHALOGRAPHY

RHEOLOGY

RHEOGRAPHY U RECORDING INSTRUMENTS

Rheoencephalography methods for determining aviators potentially subject to cerebrovascular disease [NASA-CR-97261] 23 p4001 N68-37204

Rheological model of soil deformation under impact load, and applications to aircraft landing sites
[AFCRL-67-0583] 11 p1680 N68-21552

RHODIUM RIBBONS 14 p2181 N68-24942 Rhooelectrical analogy for calculating aerodynamic characteristics of aircraft in steady or unsteady super-sonic flow [ONERA-P-119] 17 p.2802 N68-28556

Flow properties of Cyanamer and sodium carboxymethyl cells tions predicted by rheology er P2S0 polyacrylamide flutose in aqueous solulet optical properties of oligonucleotistes for protocal properties of ribonucleic acids tical properties of ribonucleic acids 05 p0610 N68-14611 13 p2087 N68-23264 Polymer viscosity as function of shear rate [RLT-105] 13 p2090 N68-24246 sequence struct (AD-662276) 06 p0887 N68-16016 Theory and models of w tion in materials with frequency dependent rhe [PSRP-354] gical properties 16 p2652 N68-27312 Mathematical models for rheological properties of liquid polymers 10 p1464 N68-20098 16 p2690 N68-27584 on induced nucleic acid synthesis in energy Rheology and velocity profiles for nonNewtonian fluid flow through small tubes neprived L cells NASA-CR-732201 13 p2000 N68-23533 19 p3260 N68-30874 beta radiation splitting of ic acid complexes 16 p2598 N68-27739 Rheological properties of solid liquid suspensions 19 p3261 N68-30935 Energy transfer studied copper from copper ribor [SGAE-BL-27/1968] Microrheological study of flow behavior of this otropic suspensions, assuming spheroidal aggregates thear flow. Effect of solvent on eoxyribomicleic acid, to acleic acid by ultraviolet tion of transforming 20 p3408 N64-33479 19 p3263 N68-31196 eological model of creep for determining is-ce of recovery on stress relaxation process in emical properties of amino acids with [NYO-2735-8] 23 p3999 N68-36637 RTS-45461 20 p3507 N68-33596 RIBS (SUPPORTS) Rheo-optics of high speed deformation - analysis of polyethylene and polybutene-1 films using photographic light scattering method (OWR-TR-199) 22 p3895 N68-35381 Boundaries of regions of parametric instability of simply supported stiffened rectangular plate [NASA-CR-94675] [4 p2354 N68-24439 Monsymmetric reinforcement of circular hole in plate by thin rib or cylindrical shell Rheological behavior of elli in incompressible Newtonian id particles suspended 18 p3177 N68-30097 23 p4043 N68-36062 Analysis of shell with variable at loading using energy method e section rib under radilaified JP-4 jet fuel 24 p4336 N68-38278 Rheological evaluation of er [RMD-5127-F] 18 p3179 N68-30245 ed by pressure fluctua-Design, and calibration of iridium versus iridius rhodium thermocouples [NASA-CR-61683] 10 p1529 N68-1986 18 p3004 N68-30822 10 p1529 N68-19864 RICCATI EQUATION Rational approximations and solution of control theory problems involving Ricasti equations [NASA-CR-89974] 01 p0040 N68-10092 PHODIUM ALLOYS etic susceptibilities of Mo, etic materials 23 p4147 N68-36064 Low temperature magne Rh, and Ir with added magne RICHARDSON-DUSHMAN EQUATION
U TEMPERATURE EFFECTS
U THERMIONIC EMISSION RHODIUM ISOTOPES Neutron inelastic cross section measure RICHARDSON NUMBER rhodium isotopes [AECL-3043] Interrelated changes of wind profile structure and tichardson Number in air flow from land to inland 12 p1943 N68-22985 RHOMBIC ANTENNAS Engineering feasibility study on structural dynamic antenna electrical properties, and systems of kilomet wave orbiting telescope [NASA-CR-96629] 21 p3775 N68-3486 21 p3717 N68-34292 Richardson number, turb to make diffusion calculatio [DPG-T68-106] at diffusion and intensity 21 p3775 N68-34806 22 p3869 N68-35354 RHYTHM [BIOLOGY]
NT CIRCADIAN RHYTHMS U MEASURE AND INTEGRATION RIEMANN MANIFOLD Periodicity of discharge in autonomic nervous Nordstorm theories of generally covariant scaler that Riemannian methods gravitation compared to theories set in conformally AFOSR-67-27421 05 p0612 N68-14770 Biorhythmological research - to hysiological adaptability of cosmi eriods orch - tolerance levels and of commonauts to solar time [TR-1] 02 p0239 N68-11235 space with SU/3/Z-3 Four di 06 p1132 N68-17758 (DOUGLAS PAPER-4579) Reproduction of set rhythm of eye movements from 05 p0706 N68-14127 (RAE-LIB-TRANS-1288) Independent, equivalent f one poses Nos-16042 ing functions for certain liemann surfaces 09 p1364 Nos-19233 14 p2203 N68-24515 Electrographic data and volved in time estimation by [TG-230-T542] d physiological processes in-by human brain 15 p2397 N68-26531 Representation of uniformply and doubly connec Experimental study of biological principle or rhythmic deoxyribonucleic acid synthesis 19 p3214 N68-32152 ttky space boundaries in Schottky groups and Sci impact Riemann surfaces 11 p1722 N68-20621 Equivalence clames of omology bases Riemann surfaces with and diagnostic data on aerospace medicine 19 p3214 N68-32153 Review of test results and sythmological problems of aero 11 p1724 N68-20687 Brownian motion on complete R Riemann manifolds 13 p2167 N68-23224 Turbulent boundary layer induced vibrations of stainless steel ribbon ng function spaces and 14 p2242 N68-24938 17 p2935 N68-29167 RIBOFLAVIN Extension of properties f or class of K-functions on Molecular complexes of flavins with indoles and henols, phototaxis in euglens, and reversible light in ucod single electron transfer between chlorophyll and ofrominos. AROD-6929-16-M1 18 p3102 N68-29817 es and tran Welding Rieman [AFCRL-67-0590] 08 p1133 N66-17780 16 p3107 N68-30586 Riesz theorem and topology used in functional analysis für compactification of Riemann space [TR-45] 19 p3300 N69-31077
Rasults in classification theory of Riemannian NT ADENINES

Results in cla

20 p3517 N68-33480

SUL

vib cie [N

RIVE

tua (B)

res [Ri

mici (D.

flor

5

RL C

RLC

net [N/

L

RNA

veh [W

ROAS

ther of ti

scal and [Al

ROBO

177

17 p2978 N68-28343

RIVE

tries of compact submanifolds of Riemann Dynamic properties of slender elastic body of varia-e mass under high accelerations stary particle physics lectures on symmetries interactions, baryon and meson resonances, n intersecting storage rings 6-29, V. 3] 05 p0720 N68-14973 Elementary particles and weak interaction and proton intersection [CERN-66-29, V. 3] 14 p2358 N68-25118 21 p3710 N68-33679 Geometry of preHilbert manifold of curves and minimal surfaces Structural design and weight analysis for skin at econd stage plug nozzle of NEPTUN reusable carrier Proton intersecting storage ring properties, and reference bibliography on colliding beam experiments 03 p0720 N68-14976 21 p3711 N68-33707 (TUB-IR-3/1968) 15 p2568 N68-26071 Five dimensional field theory 21 p3737 N68-34014 Plane and spherical linkages of rigid bodies using dis-accement matrix on of high velocity projec-Cut locus and conjugate tile thrust rings for smooth barrels [ISL-T-26/67] locus of Riemannian 15 p2569 N68-26186 06 p0821 N68-15220 Gas cured urethane resin systems for rigidizing packageable, expandable structures after deployment in space 22 p3897 N68-34889 Elastoplastic analysis of circular rings with tempera-ture dependent yield stress [AFOSR-67-2836] 10 p1608 N68-20244 Conformal transformations of compact Riemann 10 p1608 N68-20244 16 p2682 N68-27922 22 p3898 N68-35047 Material strengths, shock loading, and material stress analyses for planetary entry ringsail parachute design [NASA-CR-66588] 10 p1459 N68-20315 Manufacturing methods for construction of com-ound curvature Airmat cloth applicable in develop-ent of space rigidized solar concentrator Theorems proving continuous function mapping in itemans uphere, and boundary function for continuous Design calculations and materials test data for plane-tary entry ringsail parachute [NASA-CR-66586] 10 p1459 N68-20317 16 p2784 N68-27923 23 p4088 N68-36454 Automatic curing of reinforced plastics in space 16 p2683 N68-27951 U CAUCHY PROBLEM 10 p1459 N68-20317 gap-band planetary entry parachute
[NASA-CR-66599] Equations of motion for rigidly rotating charged Maxwell-Einstein fluid RICGING Extensiometer calibrating rig with high sensitivity 18 p3121 N68-29582 Dependence of storage ng luminosity on region 14 p2256 N68-24903 Theory of nonelar [ONERA-TP-573] [AID-METRO/12] width and crossing angi 19 p3376 N68-31191 NIGID ROTOR HELICOPTERS NT XH-51 HELICOPTER 12 p1927 N68-22407 Matrix equations to describe motions of spacecraft consisting of interconnected rigid bodies [NASA-TN-D-4749] 20 p3603 N68-33092 Analysis of structures with n-fold symmetry 13 p2157 N68-23249 Flight measurements compared with performance alculations of rigid rotor system on BO-105 helicopter Buckling and snapping of shallow arch and thin ring geometries studied under dynamic pulse loads [TR-0158/3240-30/-3] Closed form solutions to p oblems of wave propaga-[DF-74-0] tion in rigid, workhardening, locking rod [DASA-2101-1] 22 p3972 N68-35331 23 p3992 N68-37343 Data correlation and reduction of flight test mea-urements of aerodynamic loads on compound rigid Constitutive relation of Neutonian fluids and suspended rigid spherical particles 23 p4050 N68-36828 13 p2158 N68-23351 Performance tests and torque-speed graphs for otor ring-counter inverter system rotor helicopter [LR-21072, V. 1] 24 p4197 N68-38180 motor ring-counter in [NASA-CR-61758] er inverter syste 13 p1995 N68-23603 Dynamic stability analysis of liquid filled rigid bodies ad liquid filled clastic bodies RIGID ROTORS and liquid filled elastic bodies [AGARD-INDEX-SUPP. 1] Critical speed of flexibily mounted rigid rotors in un-FORTRAN compa er program for analyzing dynamic response of beams and rings [SC-RR-66-2682] dampened bearings [NASA-TN-D-4607] 14 p2360 N68-25421 24 p4301 N68-37801 C-RR-66-2082; Ring structure of organic sulfur compounds 15 p2405 N68-26027 14 p2353 N68-24386 Liapunov functions applied to motion manning solid bodies with liquid filled shells 24 p4301 N68-37804 Critical speed analysis of rigid rotors on flexible [NASA-TN-D-4858] 23 p4070 N68-37214 Ring electrode void meter for measuring void frac-Flow between two plates of fluid containing rigid RIGID STRUCTURES tions in boiling water reactor [AEC-TR-6930] 15 p2468 N68-26567 Approximate solution for indentation of sloping ones in rigid plastic media in terms of mean pressure 02 p0278 N68-11679 24 p4247 N68-38195 Displacement of floating elastic circular hole constrained by stiffen elastic spherical shell with Assessment of Martin lower bound for response time of impulsively loaded rigid-plastic structures [AFOSR-68-1332] 24 p4352 N68-38484 ening ring device 18 p3175 N68-29732 Design values determined for critical buckling stresses of axially compressed, curved isotropic skin panels - stability of eccentrically stiffened cylinders [NASA-CR-91222] 03 p0422 No6-12371 Equations of motion for studying propagation of free armonic waves in sandwich ring and transient suponse of ring subjected to radial impact loads 24 p4346 NSS-37511 RIGID WINGS Flight dynamics of small gliders with rigid slender Digital computer program for determining critical combinations of axial load and radial pressure in stiffened circular cylinders [NASA-CR-91224] 03 p0422 N68-12372 (ARL/SM-312) 13 p1989 N68-24003 RING WINGS RILLS Selectively ventilated ring wing hydrofoils E-138.2] 02 p0196 N68-11075 U VALLEYS (E-138.2) Digital computers for prediction of instability in ec-centrically stiffened cylinders under axial compression [NASA-CR-91223] 03 p0423 N68-12456 RIMS Longitudinal aerodynamic characteristics of parasol-wing model at supersonic speeds [NASA-TN-D-4855] 24 p4193 N68-37854 Machining methods for controlling edge pull-in of blanks Computer program handbook for f ysis of stiffened cylinders with attache [NASA-CR-91282] 04 ok for free vibration anal-05 p0669 N68-14863 tached weight 04 p0587 N68-13157 RIOMETRY RING CURRENTS MEASUREMENT bility in cylindrical resonator 07 p1045 N68-16586 Dynamic response of rigid bearing, simple rotor system subjected to impact loads applied to rotor or redustal appears. Ring current stab [JINR-P9-3474-2] Distribution of particle energy density in ring current Risk and profit in aerospace in [RM-5440-PR] NASA-CR-914991 08 p1262 N68-17656 04 p0515 N68-13422 field of magnetic storm [NASA-TM-X-63147] 10 p1520 N68-19786 Convergence rate bound on estimated Bayes solution to Bayes risk with discrete time Markov processes 10 p1546 N68-19755 Prebuckling deformations, and ring stiffener effects on buckling load of eccentrically stiffened orthotropic Oval of surors borealis and ring current in earth magnetosphere [NASA-CR-96662] cylinders [NASA-TN-D-4283] 05 p0746 N68-14091 Theory of bidding behavior and formation of bidding model with risk aversion [NASA-CR-94596] 13 p2095 N68-23712 21 p3685 N68-34157 Rigidized woven screen material study for gravity gradient boom and antenna [NASA-CR-92680] 07 p0967 N68-17090 Resonant ring circuit analysis [IPP-3/72] 24 p4241 N68-38488 Risk aversion in stochastic programming with RING STRUCTURES Oscillations of elastically suspended asymmetric REINFORCEMENT KINGS [RR-122] 16 p2692 N68-27027 Cost optimization analysis on storage ring magnet 09 p1441 N68-18649 Minimum average risk decision procedures for non-central chi-square distribution Plane stress analysis using Fourier series of edge stif-ned isotropic or orthotropic elastic rectangular plate spected to prescribed temperature distribution and sundars learning. (UCRL-17354) 01 p0046 N68-10432 16 p2696 N68-27634 Effect of crossing angle on interaction rate of collid-ing electron beams in Princeton-Stanford storage ring RITZ AVERAGING METHOD [AD-659194] Stanford storage ring 01 p0111 N68-10660 foundary loads [NASA-CR-978] Subsequent and Ritz approximation methods for axially-symmetrical oscillations of rotating liquid filled 09 p1445 N68-19311 Synchrotron radiation intensity in inhomogeneous Relativistic formulation of rigid sphere as example of relativistic theory of unified model of elementary parti-[JINR-P9-3415-2] 01 p0113 N68-10752 [FTD-HT-66-527] 06 p0923 N68-15797 Oscillating beam transverse resistive instability in cir-ular particle accelerators and storage rings 10 p1562 N68-19625 Ritz method of calculating vibrations of cantilevered iangular and trapezoidal plates to simulate lifting sur-see and rudder behavior INUP-A-68-11 Analyzing motion stability of rotating rigid body subjected to periodic disturbances torage rings 01 p0113 N68-10794 09 p1442 N68-18684 Influence of mass on free flexural vibrations of thin 11 p1746 N68-21102 Finite element analysis of thin shell, convergence of approximations obtained, and stiffness matrix expressions for triangular curved shell element Recurrence formulas for deriving equations of mo-tion for system of multiple rigid bodies and applications in problems of space flight dynamics circular rings containing point mass (REPT.-2336) 03 p0422 N68-12402 Performance evaluations of ring shaped sweep-line, and wedge shaped sonar displays [TR-750-9] 05 p0631 N68-14632 12 p1976 N68-22240 13 p2156 N68-23088 Deflection, moments, shear force, and potential energy for symmetrically loaded circular plates using Ritz average method Application of extended Kantorovich method to stress analysis of champed rectangular plate subjected to uniform lateral load [NYU-AA-67-107] 13 p2164 N68-24296 Expanding ring used for determining tensile stress strain relationships as functions of strain rate Q5 p0669 N68-14865

18 p3172 N68-29580

DEX Modified Ritz method for problem of steady creep of onsymmetrically heated tubes subjected to internal ances, 14973 Ritz method for solving problems on transverse whrations on plane elastic plates, and tables on coeffi-cients of elasticity [NASA-TT-F-11576] 19 p3382 N68-31982 and sents 14976 rojec-RIVERS 15220 npera-20244 stress 1gn 20315 plane-20317 r disk 0319 egion 2407 3249 n ring 3351 for 3603 4386 6027 frac-RIVETS 6567 with RL CIRCUITS 9732 free RLC CIRCUITS 7511 1075 7854 656 tion 755 ding 712 with 027 634 ROASTING 797 ered sur-

684

e of

res-

240

sing

Prototype lightweight stream powered generator for operation in shallow, low velocity streams of water [AD-560009] 02 p0162 N68-11544 Statistical analysis of adjustment theory for river 02 p0207 N68-11572 Dam, reservoir, levee, and river constriction effects on model river basin and reservoir system - flood con-trol and forecasting [W-51] 03 p0340 N68-12483 Mathematical simulation of river temperature fluc-tuations below power reactor cooling system outflow [BNWL-628] 09 p1378 N68-19076 Mixed hexagonal hierarchies of river drainage basin areas for predicting numers of drainage basins in fluvial (TR-13) 11 p1688 N68-20868 Tabulated physical, chemical, and biological data collected within Columbia River effluent area during research vessel Brown Bear 1965 cruises [RLO-1725-92, V. 2] 12 p1870 N68-22856 RIVETED JOINTS High frequency structural damping due to riveted joints associated with gas pumping between overlapping surfaces [NASA-CR-954] 02 p0276 N68-11489 Tensile fatigue tests on riveted and adhesive bonded aluminum single lap joints
[NLR-TN-M.2170] 14 p2354 N68-24451 Fabrication and testing of dispersion strengthened nickel chromium riveted joints [DAC-60787] 17 p2982 N68-29060 17 p2982 N68-29060 Effect of surface topography on erosive action of flowing liquid 09 p1338 N68-19423 State space synthesis of passive one port networks 10 p1508 N68-19854 NT LC CIRCUITS Reciprocity and qua silinearity in solving nonlinear network problems (NASA-CR-92836) 07 p0976 N68-16268 Active lattice of RLC resonators for synthesis of transfer functions of complex frequency [AFCRL-67-0562] 10 p1509 N68-19959 Networks with unity gain voltage amplifiers [AFCRL-67-0553] 11 p1674 N68-21462 RLC network synthesis and analysis, and behavior of resistive network with negative resistors esistors 13 p2043 N68-23485 Topological synthesis of RLC circuits for prescribed driving-point functions 18 p3050 N68-29942 Low order rational trunsfer functions for approximating matched filter for rectangular pulse [TN-1968-21] 23 p4031 N68-36447 Input rules for network analysis program to solve linear RLC circuits [NASA-CR-86099] 24 p4238 N68-37583 U RIBONUCLEIC ACIDS NT HIGHWAYS Nonlinear vibration vehicular engineering [WTHD-4] on problems in road and rail 22 p3974 N68-35640 Growth of titanium dioxide particles in process of thermal hydrolysis and calcination of ilmenite solutions of titanium and iron sulfates [RTS-4637] 20 p3422 N68-32767 Multiple rocket sounding experiment to study smale features of horizontal wind fields in stratosphe [AFCRL-67-0263] 03 p0363 N68-12063 ROBOTS ding algorithms for autonomous myopic rov-[NASA-CR-95878] 18 p3112 N68-30297

BOCK SALT U HALITES **ROCKET ENGINE DESIGN** Liquid hydrogen/oxygen rocket motor of 40 kN urust designed for Diogene launch vehicle 06 p0899 N68-13939 NOCKET BOOSTERS
U BOOSTER ROCKET ENGINES ation techniques for ust chambers 07 p1073 N68-16426 Design criteria and fabric regeneratively cooled rocket the [NASA-CR-72320] ROCKET-BORNE INSTRUMENTS Experiments design, instrument packages, and launching of Black Brant rocket ADD-VB-10 [SRFB-007] 02 p0271 N68-11593 Busic operating char-ric propulsion systems NASA-TM-X-524071 Application of gyroscopic graphic surveys, and rocket orie [FTD-MT-65-441] instruments in topo-10 p1585 N66-19832 06 p1180 N68-17888 Newtons second and third laws for basic concepts of trust, and formal design criteria for rocket en-Omnidirectional electromagnetic accelerometer for seasuring drag accelerations in falling sphere air densi-INASA-TM-X-523891 10 p1585 N68-19834 (UU-67-4) 09 p1340 N68-18408 d open-cycle vortex sta-ngine designs 12 p1904 N68-22038 Specific nuclear light bulb and bilized gaseous nuclear rocket es [NASA-CR-1030] Satellite and rocket measurements of galactic cosmic rays, solar plasma, solar flare particles, and radiation belts and suroral particles (ESRO-SP-19) 10 p1588 N68-20272 ic materials and design rocket engines 12 p1961 N68-22272 Failure mechanisms for concepts for storable prop [NASA-TM-X-1463] 10 p1588 N68-20272 Rocket-borne electric field measurements in the Single versus multi Voyager capsule bus pr [NASA-CR-94539] ne configura (REPT.-67-24) 10 p1525 N68-20423 Proposed design of Skylark sounding rocket photometer for measuring sky luminance generated by rodincal light and integrated statight [RAE-TR-67168] 10 p1532 N68-20495 13 p2142 N68-23181 for large launch vehicles Pressure profile of Javelin rocket experiment and ethods for reducing gas load 13 p2049 N68-24164 Resistojet design and di bital Research Laboratory [NASA-CR-66604] 15 p2446 N68-26900 netometer measurements ric current system 19 p3268 N68-30926 14 p2194 N68-25450 rformance evaluator ignition to deter-to avoid overpresso on of solid propellant rocket Rocket-borne silicon detector telescope for Van (NASA-CR-72447) 22 p3955 N68-35729 [NASA-CR-72447] 22 p3935 N68-35728

OCKET ENGINES
NT ALGOL ENGINE
NT ALGOL ENGINE
NT ALGOL ENGINES
NT CONTROL ROCKET ENGINES
NT CONTROL ROCKETS
NT ELECTRIC ROCKET ENGINES
NT ELECTROSTATIC ENGINES
NT ELECTROSTATIC ENGINES
NT HYBRAZINE ENGINES
NT HYBRAZINE ENGINES
NT HYBROGEN OXYGEN ENGINES
NT JON ENGINES
NT JON ENGINES
NT JON ENGINES
NT LIQUID PROPELLANT ROCKET ENGINES
NT LITHEROOL ROCKET ENGINES
NT LITHEROOL ROCKET ENGINES
NT LITHEROOL ROCKET ENGINES
NT M- LI ENGINE (ISAS-426, V. 33, NO. 8) 22 p3931 N68-35625 Description of ultraviolet spectrophotometric equipment and telemetry system for experiment CEPHEE 23 p4177 N68-37135 ROCKET-BORNE PHOTOGRAPHY Research proposal for extra-atmospheric observa-ons of stellar ultraviolet sources on rockets and satel-[NASA-TT-F-11233] 01 p0066 N68-10986 Space photography for geographic studies of earth [NASA-CR-93287] 08 p1178 N68-17540 Particles of unknown origin photographed in solar prona by Aerobee rockets 16 p2761 N68-27493 BOCKET CHAMBERS

U COMBUSTION CHAMBERS

U THRUST CHAMBERS M- I ENGINE MICROROCKET ENGINES NUCLEAR ENGINE FOR ROCKET VEHI-CLES NUCLEAR ROCKET ENGINES OCKET COMBUSTORS
U COMBUSTION CHAMBERS
U THRUST CHAMBERS NUCLEAR ROCKET ENGINES
PLASMA ROGINES
RESISTOJET ENGINES
RESTARTALLE ROCKET ENGINES
RETROROCKET ENGINES
SOLID PROPELLANT ROCKET ENGINE
SOLID PROPELLANT ROCKET ENGINES ROCKET ENGINE CASES te response in cylindri-jected to stress loads 03 p0419 N68-12067 Fourier series used to comput cally orthotropic thick rings subj [TR-40] Fracture strength of maraging and stainless steel solid propellant rocket engine cases evaluated using subscale precracked specimens (FAR-1863) 03 p0411 N68-12802 Processing data on motor casings, propellisat chemi-cal ingredients, and grain restrictions for Black Brant 28 rocket ongine (CARDE-TN-1758/67) 02 p0262 N68-11384 03-p0411 N68-12802 gy, rocket places, rocket mes - history 04 p0444 N66-13574 e testing, and hydrostatic Rocket engine technolog propelled gliders, and coupla [NASA-TT-F-11430] pressure testing of 260 SL-1 case [NASA-CR-54871] 07 p1073 N68-16477 NASA-TT-P-110-80;
Flight tests of early rocket proposited gliders
O4 p0445 N68-13576
Rocket engine and plane technology for flight in
recombere - conference review Optimum relaxation time proven for Maxwell solid core during forced vibration of bonded rocket as-Rocket engine and pla stratosphere - conference [NASA-CR-92986] 07 p1091 N68-16746 Design requirements and process parameters for fabricating simulated titanium alloy Y-ring segment for Saturn S-IC using diffusion welding [NASA-CR-61698] II p1702 N68-20877 04 p0445 N68-13577 04 p0567 N68-13655 Rocket engine comp (NASA-CR-91471) 11 p1702 N68-20877 High frequency de to de thrustor systems [NASA-CR-S4671] Structural design and weight analysis for skin at second stage plug nozale of NEPTUN reusable carrier NASA-CR-S4671] 04 p0450 N66-13916 Steady state ablation in oxy-acutylene burner test on extra long specimens of phenotic asbestos for missile ropulsion systems. (TUB-IR-3/1968) 15 p2568 N68-26071 Maraging steels used in rocket engine case for third stage motor of Black Knight rocket vehicle 17 p2961 N68-28542 NOLTR-67-1461 06 p0858 N68-15720 Design, fabrication, and assembly of nozzle and extreme for rocket engine 260-SL-3 NASA-CR-72283) 06 p0899 N68-16024 ROCKET ENGINE CONTROL Damping effects of ring-spoke haffles on acoustic wave instabilities in rocket combustion chamber [NASA-CR-93262] 08 p1231 N68-18076 d dynamics using hydraulic High speed flueric logic circuitry for pneumatic stepping motor actuator control system for use in Nuclear Engine for Rocket Vehicle Application /NER-AEDC-TR-67-232] 07 p0981 N68-16355 Gas dynamics of explosions for rocket propulsion ap-(AEDC-TR-67-2321 VA/ [NASA-TM-X-59868] 07 p1095 N68-16379 16 p2592 N68-27449

Fabrication and test of flueric position servo for con-rol dram of nuclear rocket engine NASA-CR-72423] 19 p3203 N68-31116

SUL

ROC

zite [C.

COE

ant ex [A

BOC

str

tri

ROC

23 p4179 N68-36186

eometry effects on static stabili-odels in superionic wind tunnel 23 p3985 N68-36509

Mathematical model of electromagnetic propagation communication signals diffracting around rocket ex-test plume Experimental, and theoretical evaluations of coustic liners for screech suppression in rocket en-Calculating rocket vertical flight performance using Newtons law to compute acceleration [NASA-TM-X-52390] 07 p1086 N68-16891 of cos 07 p1086 N68-16891 NASA-TN-D-4442] 08 p1233 N68-18249 [TR-1001/2220-10/-5] Catastrophic yaw and magnus instability in rocket flights, and aerodynamic stability coefficients 04 p0478 N68-13305 Radar attenuation measurem interference of rocket engine io [NASA-CR-61625] rements to determine radio se ionized exhaust gases 16 p2584 N68-27127 nized exhaust gases 09 p1303 N68-18664 Shear layer mixing, hydrocarbon oxidation, and car-on cloud radiation models for liquid rocket engine ex-X ray astronomy rocket experiment for identification and positioning of SCO X-1 strong X ray source [NASA-CR-89759] 21 p3773 N68-34710 Relative erosion resistance of ablative materials for nozzle sections of storable-propellant rocket engine [NASA-TM-X-1559] 10 p1584 N68-19708 06 p0927 N68-15848 Heat transfer characteristics of ejector systems for turning rocket exhaust gases through 90 deg [NASA-CR-91274] 08 p1255 N68-17286 Micrometeorological literature survey to determine robable surface winds along trajectories of small Refractory and ablative materials for use in space Pockets (BRL-1407) propulsion systems NASA-TM-X-523921 Predicted full scale exhaust plume length and ther-mal radiation flux at proximate surfaces from scale 10 p1585 N68-19833 23 p4092 N68-36191 Divergent-flow contact-ionization electrostatic thrustor for satellite attitude control and stationkeep-Elliptic and open orientation impulse optimization for extra-atmospheric part of ascending rocket trajecmodel data [NASA-CR-91270] 08 p1203 N68-17314 Surveyor 5 landing site contamination from solid alu-inum oxide particles in main retro exhaust 08 p1240 N68-17854 tory to orbit [NASA-TT-F-11878] INASA-TN-D-44201 10 p1586 N68-20187 23 p4166 N68-36321 Combustion physics and hybrid propellants for rocket engines of European space programs [ONERA-NT-1/1233-EY] Acquisition of rockets on clim [ESRO-SN-71] b by presetting radar 23 p4022 N68-36912 Dual channel infrared spectroradiometer system for obtaining spectral absorption and emission data used to determine temperature and pressure distributions of ROCKET FUEL TANKS
U PROPELLANT TANKS 10 p1586 N68-20321 High frequency longitudinal compussion gaseous propellant rocket engines 11 p1801 N68-20814 ROCKET LAUNCHERS certain rocket exhaus [NASA-CR-94133] st species 11 p1701 N68-21736 Launcher settings versus jack settings for Aerobee 150 launchers - tables [ECOM-5152, SUP. B] 04 p0582 N68-13283 Laboratory simulation of lunar soil erosion by rocket Mercury electron ent thrusters, and 04 p0582 N68-13283 SERT 2 spacecraft and solar cell array [NASA-TM-X-52423] 11 p [NASA-TM-X-59863] 16 p2756 N68-27286 Launcher setting vs. jack settings tabulated for Aerobee 150 launchers, Complex 35, White Sands Range, N. Mex. [ECOM-5152, SUP. A] 07 p1084 N68-16120 11 p1777 N68-21233 Very high frequency wave attenuation measure-ents of rocket engine plumes to calculate degree of lon extraction system low voltage mercury electron bombardment rocket propulsion system [NASA-TM-X-52425] 12 p1855 N68-22364 (LRBA-E-1311) 17 p2850 N68-28873 Earlyburn cinetheodolite observations for seven ransits of satellite 1965-95 B /Cosmos 97/ ROE-STS-63] 12 p1970 N68-21929 Rocket exhaust research in areas of direct impinge-ment heating, backwash base heating, radio signal at-tenuation, and interference with line of sight to ground stations Performance of mercury electron bombardment ROE-STS-63] thrustor at large acceleration pote [NASA-TM-X-52429] 12 p1961 N68-22370 Design, instrume ncher, and testing for nentation, auding rocket system
16 p2699 N68-26971 Vibration, shock, and acceptance test data for C-1 rocket engine propellant valve qualification [NASA-CR-61733] 12 p1962 N68-22818 meteorological sout [AFCRL-68-0132] 17 p2986 N68-29006 12 p1962 N68-22818 Rocket exhaust jet interaction with lunar surface NT ORBITAL LAUNCHING Infrasonic measurement of rocket engine noise 12 p1918 N68-22952 dust layer 17 p2970 N68-29011 Effect of liftoff dynamics on launch vehicle stability Impingement of condensed upon proximate space vehicles Specifications, design co epts, and qualification hipropellant valve ed rocket exhaust gases test procedures for C-1 engine bipropellant valve [NASA-CR-61735] 12 p1973 N68-22972 [NASA-CR-943] 01 p0141 N68-10233 17 p2873 N68-29012 Tabulated data on sounding rocket launches and satellite observations Rocket exhaust characteristics and interaction with Improved bipropellant valve for C-1 engine - design [NASA-CR-61731] 03 p0417 N68-12171 17 p2961 N68-29013 12 p1883 N68-22981 received at World Data Center /WDC-A/ between January and June 1967 Static and in-flight firing measurement of radio frequency energy absorption in solid propellant rocket exhaust Qualification testing of pulse modulated and sechanically linked bipropellant valve for C-1 rocket 06 p0915 N68-15036 17 p2962 N68-29014 [NASA-CR-61734] 12 p1962 N68-23028 Outline of operations and purposes of cameras for Small rocket engine test firings conducted to mea-ure particle size distribution of aluminum oxide ex-Qualifications tests on applications technology satel-lite apogee rocket motor assemblies [NASA-CR-94621] 13 p2145 N68-24001 rocket launch photography [NASA-TM-X-52401] 10 p1529 N68-19835 13 p2145 N68-24001 17 p2962 N68-29036 Engineering support studies for launching of four Black Brant 2 accentific sounding rockets [ERB-715] 14 p2349 N68-24368 [NASA-CR-95688] Vibration, shock, and firing test data analysis for Gemini Agena rocket engine Pressures and heat transfer rate predictions for rocket exhaust impingement on flat plates and curved 14 p2338 N68-25575 World Data Center C tables on satellite observations and rocket launchings - Jan. 1 through Jun. 30, 1968 24 p4342 N68-38126 17 p2988 N68-29457 NASA-CR-61234] Design and development of thermionic electric Hydrogen and methane of expansion of storable prope (NASA-TM-X-52434) [NASA-CR-54703] stion used to simulate 16 p2749 N68-26981 Launching of Black Brant 5B-11 sounding rocket for upper atmosphere experiments [SRFB-011] 24 p4345 N68-38258 Computation of jet blast effects and application to ELDO rocket engine exhausts [LRBA-E-1024-NT-3] 17 p2961 N68-28755 21 p3793 N68-33996 Computer program manual to analyze loads and teating on bodies subject to rocket exhaust impinge-Engineering aspects associated with launching of three Black Brant 2 sounding rockets [ERB-762] 24 p4346 N68-38431 Small rocket engine test firings conducted to mea-ure particle size distribution of aluminum oxide ex-[NASA-CR-98004] 23 p4189 N68-36930 and performance for organic version systems 24 p4199 N68-37637 [NASA-CR-95688] Jet condenser des 17 p2962 N68-29036 Rankine cycle power conversion [AGC-3484] Static tests of 65 inch diameter subscale rocket en-gines to evaluate nozzle fabrication methods, nozzle materials, liner material, case insulation, and propel-Hydrodynamic equation for evaluation of axial thrust components in rocket engines (FTD-HT-23-511-67) ROCKET FIRING 19 p3359 N68-31457 Computer program for reducing midfield acoustic data from many captive firings of full-scale rocket en-gines into statistical analysis and acoustic source characteristics Efficiencies of characteristic velocity and thrust pefficient in rocket engine combustion chambers [NASA-CR-54869] 07 p1075 N68-17198 Experimental, and theoretical evaluations of coustic liners for screech suppression in rocket en-19 p3359 N68-31462 [AGRR-TB-151 Design principles of rocket and ramjet engines for unmanned flight vehicles [FTD-MT-24-108-68] 22 p3954 N68-35235 01 p0097 N68-10061 Meteorological rocket network firings summary 01 p0087 N68-10501 NASA-TN-D-4442) 08 p1233 N68-18249 Hydrogen-oxygen rocket engine used to test acoustic ner with isolated resonators and variable cavity depths Reliability of AN/MMQ-IB set for measuring low level incident wind, methods for predicting, low level wind at time of rocket firing, and feasibility of hand anemometer as backup device (4, 4)507 M68, 13503 IBM 360/40 computer programs on preigniter rocket engine hydraulics and steady state performance of Apollo SM-LM RCS engine [NASA-CR-92363] 24 p4336 N68-38024 [NASA-TN-D-4492] 11 p1805 N68-21680 24 p4336 N68-38024 ROCKET NOSE CONES 04 p0502 N68-13593 BOCKET EXHAUST Range safety analysis for Saturn 18 nose cone and command service module configurations [NASA-CR-93715] 10 p1589 N68-19572 Turn-over point method for determining end of burning of solid rocket propellants [WRE-TN-CPD-137] 08 p1228 N68-17308 e during simulated lunar lift-off gine plume (RM-381J) 01 p0129 N68-10942 Aerodynamic heating, delamination and pressure in ose fairing honeycomb core of Atlas Centaur launch Methods for predicting radiative base heating by hot water vapor in rocket exhaust gases [NASA-CR-90499] 02 p0291 N68-11756 Construction and operating principles of percussion, me, and noncontact action detonators [FTD-MT-66-153] 19 p3206 N68-31625 [NASA-TM-X-1605] Rate constants for calculating nozzle and rocket ex-High density polyethylene mechanically acceptable for use on plastic nose cones having stress cracking haust flow fields [NASA-CR-90528] Solar eclipse program and experimental determina-on of solar chromospheric-ultraviolet radiation using 02 p0292 N68-11782

rocket-borne monochro [BMWF-FB-W-67-12]

[FTD-MT-65-567]

[HDL-TR-1396]

Nose shape and fin go ty of sounding rocket m [NASA-TM-X-1661]

06 p0905 N68-15316

inguided rocket flight 06 p0913 N68-15816

Analytical methods of predicting electron density in rocket exhaust plumes based on detailed descriptions of flow regimes and chemical models [NASA-CR-91061] 03 p0425 N68-12019

ROCKET NOZZLES

DEX

6891

ncket

7127

ation

4710

6191

6321

6912

1283

for

120

even

929

for

471

ility

233

171

036

for

335

DALE

168

26

for

58

of

31

QR

of

n-

49

tic

80

nd

12 in

6

Test firing to determine erosion rates of plastic noz-rie materials for 4-inch diameter rocket engines [CARDE-TN-1757] 02 p0262 N68-11381 Stability criteria of protective liquid films used in cooling liquid rocket combustion chambers or nozzles 04 p0568 N68-13852

Design, fabrication, and assembly of nozzle and exit cone for rocket engine 260-SL-3 [NASA-CR-72283] 06 p0899 N68-16024

Tape wrapped ablative steel jacketed nozzle for 156 and 200 inch diameter solid propellant rocket engines [NASA-CR-54870] 07 p1073 N68-16479

Historical survey of rocket engines, nozzles, propel-lants, and ignition systems development in Germany [DLR-FB-67-78] 07 p1071 N68-16590

Static tests of 65 inch diameter subscale rocket en-ines to evaluate nozzle fabrication methods, nozzle naterials, liner material, case insulation, and propel-

[NASA-CR-54869] 07 p1075 N68-17198 Thermal insulation materials for rocket nozzles and

10 p1541 N68-19566 Aeroelastic instability of overexpanded rocket noz-11 p1795 N68-21099

Design and test performance of apogee motor nozzle on applications technology satellite [NASA-CR-94619] 13 p2145 N68-24008

Boron and boron carbide formation by vapor deposi-on and possible rocket nozzle applications BM-RI-7150] 14 p2214 N68-24753 tion and possible (BM-Ri-7150)

Triple-jet gas ejector for improved rocket motor sozzle flow efficiency
[FTD-MT-24-164-67] 15 p2546 N68-26488

Heat transfer in nozzle of high aluminized solid

17 p2988 N68-29362 red with classic and ideal air

Real air effects as compar effects in propelling nozzles [ARC-R&M-3522] 18 p2995 N68-29912

Steepest descent optimization technique used in con-junction with characteristics method of flow field to design rocket nozzles 21 p3758 N68-33954

ROCKET OXIDIZERS NT FLOX

Solid propulsion binder studies, propellant binders erminated by acid, chloride groups, application echnology satellite motor, and oxidizer particle size ef-ects in propellants

03 p0410 N68-12315 Freeze dry methods for preparation of ultrafine, par-ticle size lithium fluoride for cryogenic oxidizers [NASA-CR-72152] 09 p1412 N68-19010

Combustion in hydrogen of single droplets of rocket 18 p3190 N68-30646

Synergistically catalyzed decomposition reactions of mmonium nitrate and ammonium perchlorate rocket [AR-7] 19 p3232 N68-31924

NT X- 15 AIRCRAFT

Histories of early monoplanes, and jet propu [NASA-TT-F-11427] an rocket planes,

04 p0444 N68-13561 History of Russian rocket pl nes from 1932 to 1942 04 p0444 N68-13563

Rocket engine technology, propelled gliders, and seuplanes [NASA-TT-F-11430] rocket planes, rocket - history 04 p0444 N68-13574

Rocket engine and plane technology for flight in stratosphere - conference review 04 p0445 N68-13577

Operational and cost estimates for rocket planes in ransoceanic traffic 15 p2385 N68-26024

WOCKET PROPELLANT TANKS
U PROPELLANT TANKS

NT AEROZINE

AEROZINE
CRYGGENIC ROCKET PROPELLANTS
DOUBLE BASE ROCKET PROPELLANTS
GASEOUS ROCKET PROPELLANTS
GLILED ROCKET PROPELLANTS
HYPERGOLIC ROCKET PROPELLANTS
LIQUID ROCKET PROPELLANTS
SOLID ROCKET PROPELLANTS
SOLID ROCKET PROPELLANTS

Reusable launch systems with air breathing engines r with rocket propellants
BMWF-FB-W-67-19] 06 p0916 N68-15250

orical survey of rocket engines, nozzles, propel-ad ignition systems development in Germany FB-67-78] 07 p1071 N68-16590 ants, and ignition

Mass and energy sources for space propellant synthesis from spacecraft waste material 08 p1229 N68-17358

Rocket propellants manufactured from policy of the sanctisted with hunar volcanoes 08 p1229 N68-17362

Discharge chamber studies for mercury bombard-ment ion thrustors - discharge properties effects on magnetic field configuration, cathode location and type, and method of propellant introduction [NASA-CR-72350] 08 p1232 N68-18136

Theoretical and experimental studies on chemical section and vapor supply mechanisms in propellant splosive sensitivity ITEL/CA09.11 19 n3226 N68.31347 explosive sensitivi 19 p3226 N68-31347

Radiative heat transfer from metalized rocket propellant exhaust

21 p3795 N68-34243

ROCKET PROPELLED SLEDS

Test methods for calculating aeroelasticity, high ac-eleration effects, and velocity, and for observing sodels in free fall and free flight 05 p0644 N68-14570

Feasibility of laser Doppler system for determining velocity and acceleration profiles of rocket sleds [ER-4889] 06 p0852 N68-15980

Computer program for approximate analysis of structural resposses of complex supersonic steds under dynamic loading (MDC-TR-68-3) 10 p1606 N68-20017 10 p1606 N68-20017

Computerized technique for predicting forcing func-ons and force measurements on outrigger rocket sled traveling through blast environn netit 13 p2049 N68-23852

High speed monorail rocket sleds applied to deter-ination of aerodynamic coefficients at high Reynolds

numbers [SC-DC-66-1967] 14 p2236 N68-25055 Simulated aircraft delivery using rocket sled test track facility

14 p2238 N68-25513

U SOUNDING ROCKETS ROCKET SOUNDING

Research and development guide for operational atteorological sounding rocket system stressing vehi-

[NASA-CR-91057] 03 p0417 N68-11977 Characteristics of Tacite, Tibere, Titus, Lex, and Crapel sounding rockets [ONERA-NT-118] 03 p0418 N68-12666

03 p0418 N68-12666 Rocket measurements of fluxes and spectra of rapped protons near solar minimum during magneti-(AFCRL-67-0461)

04 p0570 N68-13008 Vertical motions in upper mesosphere and lower thermosphere deduced from rocket measured tempera-tures and infrared heating rates [NASA-TM-X-60767] 04 p0500 N68-13279

pheric electron densi-05 p0651 N68-14401

ulsion, and instruction tion for proposed Ju-06 p0915 N68-15202

iminary scientific results of sounding rockets and in early 1966 from Andoya for study of auroral phenomes: (ESRO-SN-68) 06 p0916 N68-15667

ns of electron temperature in E region using Langmuir prob [NASA-CR-92364] 06 p0842 N68-15890

nalysis, and computer dex parameter 07 p1018 N68-16731

rumentation and circuitry for Nike-Cajun rockets 06 p1245 N68-17867 for pitot-static probe payloads [NASA-CR-93251]

gical rocket sounding data for 08 p1198 N68-18194

Rocket sounding data on reversal of stratospheric regulation over Chamical, Argentina during spring 1966 [CNIE-PE-12] 09 p1370 N68-19380 Atmospheric rocket sounding in U.S.S.R. during International Geophysical Year - tables
[NASA-TT-F-11422] 10 p1519 N48-19571

Construction, components, wind tunnel and flight BMWF-FB-W-67-241 11 p1789 N68-21706

Nike Apache pitot tube roc of Southern Hemisphere strato along west coast of South Ames [NASA-TN-D-4264] he rocket sounding measuring atratosphere and mesosphere 14 p2266 N68-25617

Rocket measureme

Parachete expelsion tests of gan launched Sabot meteorological projectiles in simulated environment [ECOM-5179] 15 p2464 N68-26841

Particles collected by 1965 Lister rocket, heat an-nealing tests to distinguish extraterrestrial from ter-restrial particles, and composition and abundance of micrometeorites in Leonid shower 16 p2761 N68-27494

ts of electron cooling rates in zone thermosphere 19 p3270 N68-31337 Rocket measurements e midlatitude and auroral aur [NASA-TM-X-63291]

Meteorological rocket a mesosphere, 1966 - tables [NASA-TR-R-288] 20 p3524 N68-33036

Periodicity of stato occurrences in Northern Hemisphere [M-7411] 22 p3869 N68-35287

Rocket measurements of ionospheric electrons by mpedance sensor and signal to earth propagation

[BMWF-FB-W-68-56] 22 p3872 N68-35824 sical data from vertical Tabulated solar and p

(RRC-A155, PT. 2) 23 p4058 N68-37272

Latitudinal and temporal variations of total particle ad oxygen molecule density distribution in terrestrial mosphere between 70 and 150 kilometers 24 p4249 N68-37628

ROCKET TEST FACILITIES

Size, type, and cost of facility simulating 200,000 ft titude for testing small chemical rockets and com-

NASA-TM-X-63001] 01 p0046 N68-10594 Ground facilities for deristics, performance co ining structural charac-lities, and reliability of [NASA-TM-X-52404] 10 p1512 N68-19936

Research and developmen at NASA facility in Alabama [NASA FACTS 0-10/12-67] for large launch vehicles

13 p2049 N68-24164 Simulated aircraft delivery using rocket sied test sack facility

14 p2238 N68-25513

Angular equations of motion for rocket propelled vehicle in free flight [SC-RR-66-42] 03 p0298 N68-12646

Radioiaotopic heat sources used for propulsion and integrated power and application for space missions [DGRR/WGLR PAPER-66-072]

On postage bipropellant injection with high throst per injector.

injector [NASA-CR-72303] 13 p2144 N68-23432

Efficiencies of characteristic velocity and thrust coefficient in rocket engine combustion chambers [AGRR-TB-15] 19 p3339 N68-31462

[AGRR-TB-15] 19 p3359 N66-31462 Coaxial injector thrust effects on combustion stabili-ty of hydrogen-oxygen socket engine [NASA-TN-D-4851] 23 p4160 N68-36515

(NASA-TN-D-4851) 23 p4160 N68-36515

ROCKET VEHICLES
NT ACROBEE ROCKET VEHICLE
NT AGENA ROCKET VEHICLES
NT ASTROBEE 1900 ROCKET VEHICLES
NT ASTROBEE 1900 ROCKET VEHICLE
NT ATHANA ROCKET VEHICLE
NT ATLAS AGENA LAUNCH VEHICLE
NT ATLAS AGENA LAUNCH VEHICLE
NT ATLAS CENTAUR LAUNCH VEHICLE
NT ATLAS LAUNCH VEHICLE
NT BLACK BRANT 3 SOUNDING ROCKET
NT BLACK BRANT 4 SOUNDING ROCKET
NT BLACK BRANT 4 SOUNDING ROCKET
NT BLACK BRANT 4 SOUNDING ROCKET
NT BLUE STREAK LAUNCH VEHICLE
NT DIAMANT LAUNCH VEHICLE
NT DORNIER PARAGLIDER ROCKET VEHICLE

D

rolli plitt FT

ROOM

FO

SUBJ

ELDO LAUNCH VEHICLE HONEST JOHN ROCKET VEHICLE JAVELN ROCKET VEHICLE LITTLE JOE 2 LAUNCH VEHICLE JAVELIN ROCKET VEHICLE
LOKI ROCKET VEHICLE
LOKI ROCKET VEHICLE
NIKE APACHE ROCKET VEHICLE
NIKE APACHE ROCKET VEHICLE
RUBIS ROCKET VEHICLE
RUBIS ROCKET VEHICLE
RUBIS ROCKET VEHICLE
SATURN 3- I STAGE
SATURN 1- I SAUCH
SATURN 1- I NIN NT NT NT NT NT NT NT NT NT NTNT WASP SOUNDING ROCKET X- 15 AIRCRAFT Approximation method for solving five degrees of eedom equations of motion of rocket with arbitrary [NAL-TR-131] 02 p0158 N68-11583 Unguided Rockets Ballistics Meteorology Con-[AD-661631] 04 p0583 N68-13581 method for predicting tic rocket systems 04 p0502 N68-13597 Rocket vehicle base heat rocket propellant plume chan g problem, and liquid 08 p1258 N68-18083 Historical survey of Russian rocketry and space ex-NASA-TT-F-426] 12 p1971 N68-22262 Development of steat for stages of rocket altit [BMWF-FB-W-68-23] ors for operating ejec-ating test stands lating test stands 14 p2191 N68-24798 Perturbation theory for be ng loud analysis on unguided and malaligned rockets [ISAS-421, V. 33, NO. 3] 16 p2783 N68-27883 FORTRAN computer process program for seroelastic vehicles evaluation of slender r [WRE-TN-HSA-128] 17 p2802 N68-28753 Tests to determine feasibility of using water filled angible rail top plastic trays for braking monorail [MDC-TR-68-59] 20 p3457 N68-33312 Micrometeorological literature survey to determine robable surface winds along trajectories of small rockets [BRL-1407] 23 p4092 N68-36191 COCKETRY U ROCKETS ROCKETS Ballistics, control, guidance, and propulsion theory of weapon rockets (FTD-MT-65-248) 01 p0088 N68-10828 History of Russias [NASA-TT-F-415] 02 p0262 N68-11829 to rocketry, emphasiz-History of early conting gravitational effects 04 p0566 N68-13575 activities in India 21 p3771 N68-34356 and rocket research [RPU-S-41] ANORTHOSITE BASALT BRECCIA NT COAL DUNITE ENSTATITE GNEISS NT GREATTE
GRANTE
GRANTE
GROUS ROCKS
LAVA
LIMESTONE
MAGMA
OLIVINE
PUMICE
PYROXENES
QUARTZ
SANDSTONES
SEDIMENTARY ROCKS
SERPENTINE NT NT NT NT NT

Spectrophotometric determination es of boron in rocks after extraction on of minute quanti tion with methylen [NASA-TT-F-11381] 01 p0021 N68-10419 Plane and spherical transient Voigt waves compared with nuclear and high explosion generated waves in rock masses 02 p0205 N68-11274 Stress waves and dynamic characteristics of rocks ubjected to shock wave loads from explosion om explosion 03 p0339 N68-12260 Thermal behavior of rocks on lunar surface during Junation and eclipse [D1-82-0641] 04 p0573 N68-13025 Coamic ray techniques for locating mineral deposits ad determining mean density of rocks over mines 06 p0903 N68-15073 Literature survey and chemical analyses on effect of thophilous lichens in weathering of massive crystalline 06 p0832 N68-15142 [NASA-CR-92522] Natural radioactivity of rock used in constructing tectonic scheme of Ukrainian shield 06 p0835 N68-15387 organism growth in synthetic medium using mineral nutrient source, and rock weathering rock as m due to microorganism [NASA-CR-92523] 06 p0838 N68-15449 tical analysis of infrared Computer program for statistical analysis of infrared emittance spectra of rock samples [NASA-CR-92594] 06 p0840 N68-15767 Microbiological analyses of surface layers of rocks to etermine role of microorganisms in weathering of [NASA-CR-92538] 06 p0841 N68-15825 spectra of rock-forming ineral grains found on lunar Optical fluorescence inerals for identifying mi surface [NASA-CR-92508] 06 p0895 N68-15975 Sampling requirement biological analysis of primarned spacecraft [NASA-CR-92749] ts for in situ geological and anetary surface rocks by un-07 p1080 N68-16557 Earthquake characteristics and seismology, earth crust and elastic properties of rocks, geologic surveys, and geomagnetic pulsations 08 p1168 N68-17601 uring surface texture of rock 08 pl 181 N68-17937 [BM-RI-7095] es of rock formations of theastern Utah 09 p1336 N68-19279 Remanent magnetic pro outhwestern Wyoming as PH factor change in sjunctive dislocations ous rock extracts of 13 p2062 N68-23815 nents for stress measurements in rocks on earth a [NASA-CR-61203] and moon 13 p2062 N68-23890 Dilatometers, bore hole or measurement of rock def 13 p2153 N68-24180 (NASA-CR-612021 Rock testing techniumar samples return [NASA-CR-61201] nar landing site and for 13 p2154 N68-24196 Feasibility of lithospheric radio propagation 14 p.2224 N68-25194 es of earth crust 14 p2250 N68-25196 Measured electrical propert Electrical resistivity a rated crystalline rocks nts on water satu-14 p2250 N68-25198 Electrical resistivity me ents on surface rocks 14 p2250 N68-25199 Silicate rocks as si rs for study of genetic states [NASA-CR-1081] 15 p2561 N68-26689 Geological environments of rocks
[AFCRL-68-0261] effects on mechanical pro-19 p3271 N68-31456 serties of trap rocks from Siberia 20 p3468 N68-32496 Magnetic pro [RTS-4469] Acceleration of liquid slugs to high velocity by super-mic gas nozzles for drilling rock during tunnel con-[R-4-22-68] 20 p3456 N68-32616 m of rocks 20 p3473 N68-33347 Natural, res [RTS-4470] ize of lunar soil at Sur-24 p4343 N68-38247

SUBJECT INDEX ROCKWELL HARDNESS Correlations between crystal orientation, texture, eformation, and plastic anisotropy of Rockwell hardess indentations in T and Mo crystals 18 p3152 N68-29976 ODENTS
U GROUND SQUIRRELS
U GUINEA PIGS
U MICE
U POCKET MICE
U RABBITS
U RATS NT CONTROL RODS 01 p0145 N68-10933 Rapid tensile tests cor grade steel reinforcing bars [AD-659263] d with intermediate 01 p0145 N68-10867 Succesive approximation weakly conic, thin walled he losed cross section outlines methods for designing illed rods with open or 04 p0592 N68-13857 al, steady state heat exchange by both sdiation between rods or fins and their INASA-TN-D-42571 05 p0753 N68-14052 Heat transfer of rod bundle with triangle lattice in axial sodium flow (UJV-1815) 05 p0755 N68-14425 gth calculations for buck-07 p1093 N68-17138 Nonlinear equations fronts in viscoelastic rod [REPT.-23] for stress relaxation at wave 09 p1440 N68-18626 onal wave propagation Friction induced one di in rods (NASA-TM-X-53714) 10 p1608 N68-20359 Filtering characteristi onal discontinuities of steel rod with cross sec-[TR-8] 15 p2572 N68-26916 Approximation method for integration of local deformation and wave motion in theory of longitudinal rod collisions 16 p2776 N68-27253 Dumping of longitudi moelastic cylindrical red [NASA-TM-X-53722] al waves traveling in ther-16 p2783 N68-27903 Propagation of pert viscoplastic rod [NASA-TT-F-11722] ns in viscoelastic and 16 p2789 N68-28115 in time for rods or sheets using Fourier law 16 p2798 N68-28244 Temperature distrib [NASA-TT-F-11826] Dynamic strain conc nealed aluminum rod s [AFOSR-68-0827] ation factor for notch in an-ted to impact loads 18 p3179 N68-30269 Propagation of the spersive elastic rods 21 p3782 N68-33754 Longitudinal stability of rods subjected to random forces [NASA-CR-98016] 23 p4183 N68-36932 NOGALLO WINGS
U FLEXIBLE WINGS
U FOLDING STRUCTURES ROLL lateral-directional han-y vehicles 09 p1437 N68-19226 Flight simulator to evaluate dling qualities of piloted reentry [NASA-TN-D-4410] Joint rotation and compliance, body and fin flexibili-ty, and aerodynamic characteristics effect on roll resonance of sounding rockets [NASA-CR-95054] 15 p2565 N68-25724 15 p2565 N68-25724 Roll and attitude stability for gravity gradient satel-20 p3585 N68-32416 Wind tunnel tests of roll Mach range from .16 to .85 [D6-20662TN] il rate stability derivatives at 20 p3392 N68-32612 Mathematical models of human pilot performance in il tracking task derived from flight simulator and T aircraft situations [NASA-CR-97017] 22 p3817 N68-35548 U LATERAL CONTROL ROLL FORMING

etallic sheet with thick copper

[FTD-M(T-65-462] 03 p0348 N68-12784

Hot rolling of b

EX

976

tes.

133

167

137

oth

52

in

25

k.

38

ve

26

59

e-

16

3

Pol

a

Rolling slabs of zinc-copper-titanium alloys cast semicontinuously and evaluated for sheet production [BM-RI-7089] 07 p1008 N68-16596 Rolling-diffusion welding process for composite tructural metal panels AMMRC-CR-66-02/6] 13 n2073 N68-23086 Mechanical metal bending and metal pressing by machine methods [FTD-MT-67-55] 15 p2474 N68-26491 Roll bonding procedures for nickel alloy Rene 41 and metallographic evaluation of beta titanium alloy panel with beryllium inaerts [AMMRC-CR-66-02/7] 15 p2474 N68-26570 urgy and rolling of metal powders 15 p2475 N68-26803 Powder metallus [FTD-MT-67-67] Rolling metals and bimetals in vacuum and inert gas atmosphere to ensure purity of product [FTD-MT-24-197-67] 18 p3082 N68-30536 Forward slip during rolling of porous strip from netal powders - evaluation of chromium-nickel stain-ess steels and Salimsk iron powders ers 20 p3491 N68-33337 Metallographic technique for rolled ingot sheet and powder pressed beryllium manufacture [RFP-1[24] 22 p3885 N68-35911 Heat and thermomechani ustenitic manganese steels nical processes for hardening 24 p4268 N68-38090 Induction heating and defor proving strength of spring steel POOMS ormation rolling for im-24 p4269 N68-38096 Manufacturing process for seamless, thin walled maraging steel cylinder by roll forming [NASA-CR-72431] 24 p4263 N68-38199 BOLLER BEARINGS Reduced pressure effects on fatigue life of roller steel ball bearings with mineral oil lubricants [NASA-TN-D-4348] 06 p0848 N68-15010 Fatigue life of oscillating caged needle roller bearings [F-C2077] 11 p1707 N68-21592 Subsurface residual stress measurements on inner races of SAE 52100 steel ball bearings (NASA-TM-X-52422) 19 p3283 N68-30955 Deflection and vibration at critical speeds of shaft-bearing systems using Newton-Raphson method in computer program 20 p3607 N68-33566 Measuring axial and radial acceleration to determine soise spectra of tapered roller bearings 21 p3695 N68-33695 ROLLING Analysis of sheet metal compression, and plastic deformation minimization by rolling

08 p1182 N68-17717 Vacuum twin rolling mill to study processes and phenomena during metal, alloy, and bimetal rolling in vacuum and inert media 18 p3092 N68-30310 ROLLING CONTACT BEARINGS U ANTIFRICTION BEARINGS ROLLING CONTACT LOADS Reduced pressure effects on fatigue life of roller steel ball bearings with mineral oil lubricants [NASA-TN-D-4348] 06 p0848 N68-15010 Design of minimum weight beams for inequality con-traints of stress and deflection 14 p2357 N68-24997 Friction and interface tension in viscoelastic layered system under moving loads 16 p2790 N68-28313 ROLLING MOMENTS Boundary conditions determined for persistent roll resonance on reentry vehicles [SC-RR-67-287] 04 p0571 N68-12811 Dynamics of large aircraft rotation and lift drag ratio with implication for tail clearance [RAE-TR-67065] 04 p0442 N68-13176 FORTRAN 4 computer program for calculating frequency distributions of hexagonal crystals of beryllium and ice by root square methods [JAER-1146] 08 p1221 N68-17248 Low speed wind tunnel tests to determine roll stabili-ty of SC-1 aircraft scale model at large sideslip [RAE-TR-67104] Selected roots of symmetric Rayleigh-Lamb equa-Stability criterion for rolling-pitching coupling of Griffon aircraft /Nord 1500/ [AFIT-TR-67-2] 08 p1251 N68-17679 15 p2389 N68-26951 Constructing optional control system of object with behavior described by linear second order differential Analytical method for computing pitching and rolling moments on hydrofoil undergoing large amplitude oscillations [FTR-662-1] 23 p4160 N68-36216

ROOM TEMPERATURE

Superconductivity at room temperature [FOA-4-4306-61] 05 p0726 N68-14051

Storage stability of uranium dioxide powder, and quations describing oxidation behavior in air at room [AAEC/TM-396] 12 p1905 N68-22456 Room temperature strength of pyrolytic graphite as affected by microstructure and boron content [AMMRC-TR-68-04] 13 p2068 N68-23428 rmance of centrifugal pump impeller in room temperature water (NASA-TN-D-4613) 15 p2455 N68-26651 Effect of room temperat perties of intermetallic cor range 150 to 370 deg C [ARL-MET-50] re prestrain on tensile pro-sound NiTi in temperature 16 p2684 N68-28150 Room temperature and atmospheric pressure effects environmental testing of infrared carbon dioxide analyzer [NAMI-1034] 17 n2844 N68-29294 Solenoid with horizontal axis and accessible aperture at room temperature (UCRL-18179) 19 p3260 N68-31942 Development of general constitutive equation for nom temperature mechanical response of nuclear grade graphite NASA-CR-963771 20 p3512 N68-33293 Fatigue tests on epoxy adhesive bonded joints at room temperature and 100 degrees C [HU-1098] 21 p3707 N68-33857 NT CLEAN ROOMS NT DARKROOMS Design theory and applications of radio frequency lectromagnetic shielded rooms and cabinets 22 p3915 N68-35125 ROOT-MEAN-SQUARE ERRORS Optimization of feedback control to minimize mean square error in output
[TR-108] 01 p0040 N68-10153 01 p0040 N68-10153 Equation for determining mean square error in discrete measurement in any frequency bands for which analytic expression of corresponding tramsfer functions can be obtained [FTD-MT-65-326] 03 p0321 N68-12197 03 m0321 N68-12197 Load distributions derivation on basis of composite aussian case for particular distribution of root-mean square values [ARC-R&M-3513] 03 p0424 N68-12652 Analysis and description of earths magnetic field from 1835 to 1965 with root-meas-square representa-tions of geomagnetic field, and structural diarym-07 p0992 N68-16815 Statistical minimum root-mean-square error inver-ion method for solving integral equation of radiative 08 p1259 N68-18096 Factorial design in pooling mean squares for error ariance estimation evaluated using Monte Carlo sethods methods [NASA-TM-X-52317] 16 p2696 N68-27474 Optimal control algorithms for mean-square error in time atochastic linear dynamic systems [D1-82-0693] 19 p3255 N68-30969 for mean-square error in Mathematical models for root mean square error de-ction in computer simulated transfer functions 22 p3850 N68-34887 Linear pattern classifier synthesis for probabilistic classes using mean square error criteria 24 p4274 N68-37500 ROOTS OF EQUATIONS System synthesis for latent roots or eigenvalues of bi-nary aeroelastic system. [ARC-29342] 06 p0921 N68-15471 06 p0921 N68-15471 Frequency domain synthesis techniques based on roots of characteristic equations for synthesis of auto-matic flight control systems (NADC-MA-6731, PHASE 1]

07 p1014 N68-16496

09 p1319 N68-18800

09 p1320 N68-18808

Automatically controlled relay system described by cond order differential equation with complex contacts roots of characteristic equation

Functional analysis of yout loci properties (NASA-TT-F-11516) 10 p1508 N68-19790 Linear graphing technique for finding polynomial POOL-67SD269A] 12 p1899 N68-22515 Complex number quadratic equations REPT.-67TIPO2] and finding roots of 13 p2097 N68-24259 Numerical determination of zero roots of power as rics, Laurent series, and polynomials from transformation of functions from circle and annulus of convergence 14 p2282 N68-25616 disturbed equations of zero or small root 16 p2716 N68-27766 Approximate integration of otion in case of root equal to Supplementary characteristic equation with pure maginary roots and roots with positive and negative real parts for boundary value problems

16 p2648 N68-27767 Perturbed Galerkin metho for approximate solution of a [NASA-TT-F-11376] d and convergence theory unlinear equations 16 p2699 N68-28252 Digital computer progra not loci of eigenvectors BRL-MR-1924] m calculating and plotting 18 p3106 N68-30514 n for solving boundary value anscendental function 19 p3301 N68-31707 Laplace transformation for problems, and roots of transce Analog computer to solve high order algebraic equa-tions with real coefficients (FTD-HT-67-418) 20 p3445 N68-33475 . 20 p3445 N68-33475 Wave scattering for gravity and Rossby waves 14 p.2247 N68-24849 ROTARY DRIVES
U MECHANICAL DRIVES ROTARY GYROSCOPES
NT FLUID ROTOR GYROSCOPES lancing machines for aeronautical and gyroscopic 06 p0843 N68-15156 [FTD-MT-24-98-67] Pendulum and astatic types of single-rotor gyrocom-passes studied for perturbation stability 06 p0845 N68-15545 Interaxes cou pling and analog simulation of dynami-tyro stabilized platform cal behavior of gyro stal (BMWF-FB-W-68-35) latform 21 p3668 N68-34161 NT GYROSCOPIC STABILITY Techniques for finding and removing dynamic insta-bility manifested during rotation of rotors used in in-strument making [FTD-MT-24-97-67] 05 p0661 N68-14313 High revolutions per minute rotor stability of her-ringhone-grooved gas-lubricated journal bearings [NASA-TN-D-4440] 2 p1881 N66-21965 Rotational instability of low pressure magnetically infined argon plasms 17 p2947 N68-28498 Rotary stability of the three dimensional motion of a otating disk-shaft system considering nonequilibrium [AA&ES-68-3] 17 p2982 N6S-29034 Wind tunnel tests of roll rate stability derivatives at Mach range from .16 to .85 [D6-20662TN] 20 p3392 N68-32612 Structure and stability of rotating massive stars in general relativity 21 p3768 N68-34213 ROTARY WING AIRCRAFT

NT BO-105 HELICOPTER

NT CH-47 HELICOPTER

NT CH-35 HELICOPTER

NT HELICOPTERS

NT HELICOPTERS

NT MILITARY HELICOPTERS

NT ANDEM ROTOR HELICOPTERS

NT UH-1 HELICOPTER

NT UH-2 HELICOPTER

NT XH-51 HELICOPTER

NT XH-51 HELICOPTER iary layer effects on ho

Theoretical and exper-horizontal flight performa [DLR-MITT:-67-05]

04 p0434 N68-13153

mental studies to improve its of rotary wing aircraft 05 p0604 N68-14244

dynamic stall and oscillation of helicopter airfoils [D4-0678-1] Blade aerodynamics, control, and lift augmentation of rotary wing aircraft studied to increase cruisis elicopter airfoils 19 p3196 N68-31859 05 p0605 N68-14246 and data processing equip-ul tests of oscillating airfoils Wind tunnel experiments to decrease blade loads ad increase cruise speed of rotary wing aircraft 05 p0605 N68-14247 ment used in two dimensi 19 p3196 N68-31870 [D8-0678-2] Airload me stall condition [D8-0382-5] Flight characteristics of operational and experimen-tal rotary wing aircraft analyzed to improve range and cruising speed d helicopter rotor blade 21 p3620 N68-33647 05 p0605 N68-14248 Evaluation of aerodynamic fl on rotary wings of tandem rotor [D8-0382-4] c flight load measurements Optimization programming of reaction jet helicopter blade design data to increase cruise speed 05 p0605 N68-14249 21 p3621 N68-33648 Aeroelastic analysis of shear stress measurements on vibrating rotor blade models [SER-50419] 21 p3621 N68-33649 Feasibility of cruise fan propulsion systems and as-ociated power transfer systems for compound and omposite aircraft Scale model studies of helicopter rotor flow patterns (D8-0440) 08 plil4 N68-17763 [USAAVLABS-TR-68-17] Handbook supplement to rotorcraft aviation course [NASA-TT-F-11530] 11 p1625 N68-21441 21 p3622 N68-33671 Flapping torsion flutter of helicopter blade in forward flight [ISVR-TR-3] 21 p3618 N68-33962 Blade and rudder control for attitude stability during conversion from wing-borne to rotor-borne flight [NASA-TM-X-60448] [5 p2383 N68-25745 21 p3618 N68-33962 Design study of convertible fan/shaft engines for advanced rotary wing aircraft [EDR-5640] 22 p3954 N68-35407 Paint scheme developed for increasing conspicuity of helicopter rotors
[USAARU-68-1] 22 p3805 N68-35373 NOTARY WINGS NT LIFTING ROTORS NT RIGID ROTORS Review of blade slap studies for determining noise in helicopters [NASA-CR-1221] 24 p4197 N68-37932 TILTING ROTORS
TIP DRIVEN ROTORS Wind tunnel performance tests high tip speeds and advance ratios [USAAVLABS-TR-68-44] ce tests of rotary wings at In-flight study of main rotor blade paint schemes to aprove helicopter safety through increased conspicui-24 p4195 N68-38141 Wind tunnel tests on 7-foot diameter rotor/wing USAARU-68-21 03 p0301 N68-12368 Analysis of oscillatory helicopter rotary wing loading in high speed forward flight HTC-AD-67-31 24 p4195 N68-38313 Computation of rotor flow field and dust cloud characteristic for helicopter downwash during opera-tion in ground proximity [DCR-275] 24 p4198 N68-38332 04 p0441 N68-13145 Tip vortex effect on helicopter 04 p0441 N68-13150 24 p4198 N68-38332 in-flight strain gage m helicopter blades tion of two telemetry systems for U ROTATION NT COMPRESSOR ROTORS [DLR-MITT.-67-12] 04 p0509 N68-138 us for tests on helicopter rotors Wind tunnel appurat nd propellers IMPELLERS 04 p0491 N68-13828 LIFTING ROTORS PUMP IMPELLERS RIGID ROTORS Planform design method, general characteristics, and aeroelastic stability of flexible lifting rotors [NASA-TN-D-4465] 10 p1455 N68-19954 NT ROTARY WINGS ROTORS Wind tunnel tests on com-nine nature of aerodynamic or, fuselage, and various win SER-50474} nd helicopter to deter-erference between ro-TILTING ROTORS
TIP DRIVEN ROTORS 11 p1622 N68-20658 NT TURRINE WHEELS Mathematical model on suppressing transmitted har-monic rotor loads by blade pitch control [CAL-8B-2117-S-1] 11 p1622 N68-20712 Machian effects of axisy etric stationary rotating bodies in general relativ [NASA-TM-X-60605] 01 p0100 N68-10738 Differential system and truns eory applied to general rotatis afer matrices of bending ng shells 02 p0418 N68-11910 Futigue life of oscillating caged needle roller (F-C20771 11 p1707 N68-21592 ations for gravitational fields of rotat-er gravitation effects on star galaxy Relativistic equations for ing bodies, and for gravita Predicting trim constan and rotor blade loadings and remonses of singl [CAL-BB-2205-S-1] 13 p1990 N68-23128 [AROD-3743-4-P] 04 p0543 N68-12930 Soviet engineering handbook on vibration and mamic stability theory and calculations in helicopter Mathematical mod proton type satellites [JPRS-43822] is of rotational spin effects on design [NASA-TT-F-519] 04 p0576 N68-13409 13 p1991 N68-23456 Techniques for finding and removing dynamic insta-bility manifested during rotation of rotors used in in-strument making [FTD-MT-24-97-67] 05 p0661 N68-14313 Airspeed measuring system with outputs propor-tional to longitudinal and lateral components for varia-ble stability helicopter [NAE-MISC-44] 13 p1992 N68-23921 05 p0661 N68-14313 Mathematical model for effects of circularly olarized wave upon rotating half-wave dipole in Rotary wings for recovery of ELDO launch vehicles 15 p2563 N68-25849 dynamics, and design d maneuvering 16 p2584 N68-27388 Helicopter-type rote 09 p1380 N68-18324 problems on cruise efficiency as [NASA-TM-X-57710] Estimation of eddy current torques acting on electri-cally conducting shells rotating in magnetic field [MTR-224] 09 p1381 N68-18546 Tabulated performance wings at high advance ratio ce data of full-scale rotary ation and advancing tip Mach Analyzing motion stability of rotating rigid body subjected to periodic disturbances numbers based on wind to [NASA-TN-D-4632] 16 p2586 N68-28268 11 p1746 N68-21102 ise radiation analyzed as se reduction 17 p2921 N68-28970 Il program of noise re Optimum tapering for eccessiblected to flexural rotation [RAE-TR-66365] trically loaded wire ties part of overall ISVR-TR-5) 11 p1796 N68-21283 cs of helicopter rotors, improving lift drag ratio 17 p2808 N68-28989 ng of surface of revolu-Theorems for filament winds SCL-DR-65-1021 12 p1916 N68-22385 ets on helicopter rotor Wind tunnel constraint off cs of flat plates and right Autorotational cha circular cylinders at a [SC-RR-67-778] NPL-AERO-NOTE-1054) 17 p2805 N68-29465 13 p2153 N68-24179 Self-locomotive capabilities or management of the self-locomotive capabilities or management of ics of helicopters with elastically (NASA-TT-F-11374) 18 p3004 N68-30795

Functional parameters and performance of rotating filter drum 15 p2405 N68-26030 Free boundary flows of viscous liquid around rotat-16 p2586 N68-28316 Equations of motio Maxwell-Einstein fluid n for rigidly rotating charged 18 p3121 N68-29582 Fatigue strength related to in rotating beam of case harder 20 p3496 N68-32560 Rotating sample holder for X ray emission analysis of 23 p4041 N68-36993 GEPP-8 ROTATING CONES U CONICAL BODIES ROTATING CYLINDERS Mathematical analysis of nonlinear long waves in rotating fluid supported by cylindrical wall [MRC-TSR-757] 06 p0824 N68-15159 Theoretical and experimental investigations of mo-tions set up by cylinder rotating in stratified liquid [TR-24] 10 p1518 N68-20469 Liquid oscillations in moving rigid circular and ellip-tical cylindrical containers 15 p2451 N68-26043 Hot thermistor anemorneter for shear areas secondary flow stability of fluids in rotating cylinders 15 p2468 N68-26533 Subsonic wind tunnel studies of vortices on slender rotating bodies and effects on aerodynamic coefficients (1SL-10/66) 17 p2804 N68-29391 Size of droplets formed during spraying of liquids through rotating porous solids [M-7387] 22 p3882 N68-35258 um of superfluid liquid Equilibrium angular mon helium 2 in rotating cylinder 23 p4107 N68-36432 ROTATING DISKS Paradoxial color perceptions obtained from rotating luminated disk 02 p0170 N68-11337 flow of incompressible sting fluid over rotating disk 05 p0724 N68-14078 viscous electrically conducting f
[NASA-CR-989] Epoxy cement bonding of two 20-ton steel disk re-tors for homopolar generator [EP-RR-1] 09 n1274 N68-18500 Servo design for speed balanc Camberra Homopolar Generator [EP-RR-8] nce controls of rotors on 11 p1627 N68-20895 Overpotential transients on rotating disk, current and potential distributions in cylinders, foamed elec-trolyte fuel cell, atomic scale electrode processes, and charge transfer complexes 11 p1628 N68-21038 Rotating disk electrode system to study metal deposi-tion from nonaqueous solvents under inert atmosphere [UCRL-17957] 16 p2664 N68-28087 Rotary stability of the three dimensional motion of a rotating disk-shaft system considering nonequilibrium [AA&ES-68-3] 17 p2982 N68-29034 Laminar flow distribution for incompressible fluid between rotating disks studied for varying fluid inlet 18 p3057 N68-29572 Flow velocity, pressure distribution, and difference technique for laminar flow of viscous, incompressible, Newtonian fluid through rotating turbine disks. 18 p3058 N68-29613 Pressure distribution on surface parallel to rotating sk with steady, incompressible Newtonian fluid flow-18 p3062 N68-30108 Convective heat exchange in turbulent flow between tating disks of gas turbine 20 p3611 N68-33264 Flow and temperature field analysis of a plane disk simper seal [NASA-CR-83016] 21 p3697 N68-34280 21 p3697 N68-34280

Rotor calculation for a [CEA-R-3467]

centrifuge counterro [NASA-CR-91677]

ROTATING ENVIRONMENTS

Electronically controlled vestibular device to study uman response to dynamic linear acceleration from

spectrometry 23 p4183 N68-36958

05 p0614 N68-14329

DEX

tatina

6030

rotat-

8316

arged

9582

ution

2560

is of

5993

159

469

die

043

and

533

ider

101

aids

258

132

137

09

95

38

14

id et

12

ė,

3

æ

Coriolis vestibular stimulation and influence of dif-ferent visual surroundings on adaptation to vestibular disorientation [AM-67-19] 07 p0950 N68-16799

Boiling heat transfer coefficients, interface behavior, and vapor quality in heated wall rotating boilers with continuous through-flow of water as test fluid [NASA-TN-D-4136] 08 p1255 N68-17566 Physiological adapta tion of man to prolonged rota-

10 p1471 N68-20555

Transfer of habit tion sickness on change in body position in rotating env [NASA-CR-95094] onments 15 p2398 N68-26869

Vestibular stimulation and subject orientation effects task performance and involuntary eye motion stary eye motion 16 p2605 N68-27794 on task performance an (NASA-TM-X-59523)

between vertical and horiz

17 p2821 N68-29130 Instruments and techniques to stu tion and head movement of subject

17 p2831 N68-29131

Response differentiation by rats in slow rotating 17 p2821 N68-29133

Techniques for examination of controlling mechanisms of vestibular reflex arc due to rotary and caloric stimulation 17 p2825 N68-29153

ROTATING FLUIDS

Digital computation of hydrodynamic forces and mo-ments for liquid sloshing in propellant tanks with rotational symmetry [NASA-CR-61540]

07 p0984 N68-16428 Numerical integration of hydro equations for studying incipient atm connective vortex of hydro-thermodynamic pient atmospheric vertical

12 p1865 N68-21992 reference frame
[TN-9] Measurement calibration and system design analysis or measuring pressure differentials in rotating

19 p3276 N68-31214 ity in rotating liquid 20 p3461 N68-32611 [NRC-TT-1309]

Driving mechanism of strongly developed Taylor ortex flow 23 p4046 N68-36263

ROTATING GENERATORS

NT AC GENERATORS NT DYNAMOMETERS

NT TURBOGENERATORS rformance tests of rotating gas jet generator for

strong traveling transverse aco [NASA-TN-D-4380] 07 p0988 N68-16998

Brush design, requirements, and experimental data for high current homopolar generator [EP-RR-3]

Servo design for speed balance anberra Homopolar Generator ce controls of rotors on 11 p1627 N68-20895

Safety studies on 1000 kW motor generator set sup-lying Canberra Homopolar Generator field EP-RR-10] 11 p1627 N68-20924

Heat generation measured during operation of Can-berra Homopolar Generator arranged to supply 5 megawatt magnet

(EP-RR-9) 11 p1627 N68-20941 Skin effect and heating studied in steel rotors of fast-discharge Camberra Homopolar Generator [EP-RR-2] 11 p1627 N68-20942

Temperature, voltage drop, and dynamic stability seasured on Canberra homopolar generator with two stors connected in series TEP-RR-71 11 p1628 N68-21049

ROTATING LIQUIDS

Periodicity in tran perature of helium 2 in [ISS-67/24] 02 p0259 N68-11660

Integral and differential equations for solving problem of equilibrium figures of homogeneous liquid rotating in external potential field 06 p0827 N68-15607

Effects of crossed electric and magnetic fields with scondary flows on rotation of conducting fluid streen cylinders 20 p3553 N68-32321

ROTATING MATTER

Dirac equation, Klein-Gordon ave equations from canonical q ting rotating five frame particles 17 p2926 N68-28615

rived connecting creepage al force transmitted by two components and tangrolling elastic bodies
[WTHD-3] 23 p4179 N68-36244

ROTATING MIRRORS Multiple image objective system for rotating mirror camera to record progress of nonplanar [LA-3797] 12 p1877 N68-22804 12 p1877 N68-22804

energy concentrat [L-5484] 16 p2594 N68-27926

High speed image digitizer for track chamber photographs
[BNL-12679] 24 p4258 N68-38111

ROTATING PLASMAS

uency stability of plasma confinement by Low frequ rotating field [LRP-27/66] 03 p0401 N68-12500

Microwave prob field during pinch fo [LRP-35/67] aring rotating magnetic 12 p1950 N68-22739

ed plasmas 15 p2530 N68-26314 [FOA-4-C-4341-23] Two dimensional passed by transverse is [IPP-1/81] on in theta pinch

20 p3559 N68-33449 Theoretical study of protoroidal plasma [CEA-R-3490] rties due to curvature in

23 n4138 N68-36207 ROTATING SHAFTS

NT SHAFTS [MACHINE ELEMENTS]

NT TURBOSHAFTS

Dumping, and shaft load deflections in rotary screw 02 p0219 N68-11879

Automatic centering in rate machining of parts {Y-1594} ction machine for accu-05 p0666 N68-14549

resisting elastic sup-13 p2157 N68-23100

Theoretical and experimental evaluation of fluid scoseal consisting of rotating shaft and helical NASA-CR-83498] 14 p2266 N68-25471

ROTATING SPHERES

tional motion of spherical satellite under action ding aerodynamic moments 06 p0763 N68-15615

Law of drag variations and negative moments of theres rotating in high velocity, rarefled gas flows 06 p0831 N68-16046

es and lin ing spheres treated as randon analysis and applications for ge [NASA-CR-85742]

16 p2654 N68-27466 re rotating in viscoelastic spherical container 16 p2648 N68-27821

ov stability derived from kinetic energy and squared angular mon INASA-CR-967131 21 p3732 N68-34382

Neutonian fluids and 23 p4050 N68-36828

ROTATING STALLS

Effect of circular of tion zones of multista rotation speeds 09 p1266 N68-18688

lade rows in count Dynamic performa rotating axial flow com [NASA-TT-F-11838] 18 p3000 N68-30831

ROTATION
NT AUTOROTATION
NT EARTH ROTATION
NT MOLECULAR ROTATION
NT SATELLITE ROTATION
NT SOLAR ROTATION
NT STELLAR ROTATION

tational vibration damping of beauts embedded in UI p0143 N68-10601 Trie ns for solving rate of apparent

INASA-TM-X-57246] 09 p1422 N68-18958

10 p1593 N68-20074

on of hydrogen and d Rotation 10 n1489 N68-20114

Human physioto acceleration and re (SAM-TR-67-69) se to prolonged ang 11 p1634 N68-20957

Dynamics of rot to centrifuges 15 p2402 N68-26503

ions and their algebras 18 p3107 N68-305 Vector representat [NASA-TN-D-4696]

ing space flight (NASA-CR-922111 19 p3214 N68-31101

Human perception and after rotation (NASA-CR-966311 21 p3635 N68-34013

tic fields on formation 21 p3770 N68-34230

U FLUID FLOW U VORTICES

ROTOCHUTES

Spacecraft recovery by low cost, lightweight gyrogliding reentry vehicle called space rotor 08 p1244 N68-17652

ROTONS

Physical model of liquid helium 4 based on hypothesis that rotons behave like tiny quantized circular vortex

[REPT.-85-43] 13 p2111 N68-24290 onic cavitation in liquid helium be 13 p2111 N68-34328

Excitation spectrum with phonon and roton re-tor high density boson gas with strong repulsive and helium strength attractive well 22 p3926 N68-35056

BOTOR AFRODYNAMICS

04 p0432 N68-12999

04 p0440 N68-13037

Experiments and analyses with cambered helicopter blade acctions to improve lift drag ratio [ONERA-TP-495] 04 p0433 N68-13128

04 p0441 N6E-13144 of rotor and fan sup-

Aerodynamic per ported aircraft at sub TD//R//EW/305} 04 p0442 N66-13171 e characteristics of un-

Aerodynamic and pe powered rotor reentry NASA-TN-D-4537]

fluid dynamics of rotor boosic speeds 12 p1811 N68-22486 [AGARD-CP-22]

Optimization of lift drag r 12 p1811 N68-22487

nd helicopter, and electronic or blade stability boundaries pes of excitation 12 p1816 N68-22488

veration of very high li

12 p1811 N68-22490

liction of axial velocity indicular to axis 12 p1812 N68-22491

oundary layer, form ig tip vortex, and stall of

12 p1812 1968-22492

d layer and circulation has blade tip flags 12 p1812 N68-22493 cted fan er

stadingsrow by 12 p1812 N68-22494

St

RE

RU

RU

RU

o rotor borne flight 12 p1812 N68-22495 Design criteria and development technology frotor in radial gap potassium cooled inductor altern Conversion from wing borne to re system guide vane-rotor blade spacing [NASA-TN-D-4690] 18 p3157 N68-30040 Aerodynamic/aeroelastic characteristics of stowed ICONF-680802-31 22 p3808 N68-35833 Performance of single stage turbine with rotor blade arface diffusion factor of 0.3 12 p1813 N68-22496 [NASA-CR-1172] 20 p3578 N68-32987 SURFACE ROUGHNESS Aerodynamic characteristics of large scale V/STOL powered with lift fans in transition flight Analysis of blade-motion stability and tip speed ratio ROUND TRIP TRAJECTORIES 12 p1816 N68-22498 for articulated rotor [NASA-TM-X-61218] Fully detailed model studies of interplanetary tra-ort systems using reusable spacecraft, nuclear prop-on, and refueling at destination 21 p3618 N68-34347 Transient aerodynamic interference between lifting rotor blades and wings of VTOL tilt rotor 12 p1816 N68-22503 Flicker induced vertigo from painted rotor blades of UH-1 helicopter - flight tests [USAARU-68-11] 21 p3636 N68-34420 15 p2500 N68-26039 Model studies of interpusing reusable spacecraft refueling at destination - fee [TUB-IR-3/1967] Matched asymptotic expansion techniques for calcu-ting two dimensional spinning vortices as aerodynamtary transport systems clear propulsion, and s and results U TURBINE WHEELS rwo dimens t, m 12 p1862 N68-22505 15 p2500 N68-26040 U ROTORS Correlation between acoustical signature and analytical predictions of vortex interactions in tip vortices of helicopter rotors Trajectory data for stop employ Venus swingby mos [NASA-SP-35, PT. 6] ions to Mars that ROTOR LIFT 18 p3164 N68-30098 Flight investigations of wing-rotor lift-sharing characteristics of XH-51 helicopter [NASA-TM-X-61219] 21 p3626 N68-34348 12 p1816 N68-22506 ROUNDED LEADING EDGES
U LEADING EDGES Wind tunnel apparatus for testing helicopter and V/5TOL rotor blades BOTOR SPEED ROVER PROJECT 12 p1813 N68-22507 Wind tunnel experiments to decrease blade loads ad increase cruise speed of rotary wing aircraft 05 p0605 N68-14247 Insulation system for nuclear ground test module -NERVA and Rover project Survey papers on rotor aerodynamics, propulsive efficiency, and flight mechanics of V/STOL aircraft con-05 p0750 N68-14657 [AGARD-ADVISORY-13] 13 p1991 N68-23761 Approximation formulae for transition integrals of flexible shaft through critical speeds with friction 20 p3516 N68-33122 Phoebus 2A 5000 MW reactor test preparations and fuel element developments in Rover nuclear rocket licopter-type rotor aerodynamics, and design problems on cruise effic NASA-TM-X-57710] d maneuvering 16 p2584 N68-27388 LA-DC-95891 20 p3531 N68-33086 Pilot plant for headend reprocessing of unirradiated uclear rocket fuels U ROTARY WING AIRCRAFT ing in helicopters - struc amic shock loads, mathe Shock and vibration da eral vibrations and aerody atical models for prediction d vibration isolators ROTORS nuclear roc [IN-1181] COMPRESSOR ROTORS 20 p3431 N68-33254 and vibration i FLYWHEELS KUBBER 16 p2779 N68-27704 sition of tolylene disocynste dimer in LIFTING ROTORS
PUMP IMPELLERS
RIGID ROTORS
ROTARY WINGS Decomp Design of isolation system for rotor induced presence of n-bexanol to establish reaction course as cross-linking agent for hydroxylated rubbers [MLM-1358] 01 p0021 N68-10479 16 p2780 N68-27708 Feasibility of hybrid isolation rotor induced helicopter vibration ion system for control of Analytical and experimental study of electrical con-uctivity of rubber - carbon black vulcanizates under sechanical and thermal stress **TILTING ROTORS** TIP DRIVEN ROTORS TURBINE WHEELS 16 p2780 N68-27709 Inertially coupled isolator for dy vibration damping in helicopter rote or for dys 06 p0857 N68-15148 on equations for whirling mass rotor on damped Production engineering method for manufacturing rubber based explosive sheets [ISL-8/66] 07 p1002 N68-16167 16 p2781 N68-27712 [NASA-CR-89961] 01 p0071 N68-10952 Tabulated performance data wings at high advance ratios and numbers based on wind tunnel tests [NASA-TN-D-4632] nce data of full-scale rotary ratios and advancing tip Mach Dynamic response of rigid bearing, simple rotor stem subjected to impact loads applied to rotor or detail support 13 p2087 N68-23334 pedestal support [NASA-CR-91499] [NYU-AA-67-108] 16 p2586 N68-28268 04 p0515 N68-13422 Fluorescent light polarize oriented rubber elasticity [ONR-TR-102] Rotor nerodynamics and materials testings in development of high temperature radial turbine [PWA-FR-2806] 18 p3004 N68-30014 n for calculating axially High speed, corrosion-resista sup-rotors for wind velocity mean (WBTM-EDL-2) tant steel anemometer 14 p2276 N68-24583 or p0999 N68-16888 Differential equations and numerical analysis for determining stress concentration and clastic deformation in rubber sheet under axially symmetric stretching [NASA-CR-80979] Evaluation of aerodynamic flight load measurements on rotary wings of tandem rotor helicopter [D8-0382-4] 21 p3621 N68-33648 Equations of motion, including gyroscopic momen ansverse shear, and rotary inertial effects, for rot estems subject to axial torque NASA-CR-007771 Light scattering, thermistor, force temperature mea-urements and effects, stress-strain diagrams, and ex-ensometer in rubberlike elasticity study 17 p.2903 N68-28544 Flight measurements compared with performance acculations of rigid rotor system on BO-105 helicopter 09 p1384 N68-19282 Skin effect and heati d in steel rotors of fastdischarge Canberra Homopolar G [EP-RR-2] Generator 11 p1627 N68-20942 [DF-74-O] 23 p3992 N68-37343 Measurement and reduction of airload and structural load data on XH-51A compound helicopter rotor [LR-21072, V. 2] 24 p4 [97 N68-38062 Stability analysis of two-bladed rotor on anisotropic lonic clusters in high strength amorphous carboxylic rubber matrix [TR-107] 14 p2179 N68-24474 NASA-TT-F-116601 18 p3097 N68-29712 Correlation of predicted airloads and structural loads with flight test data for XH-51A compound helicopter Rotor-hub bending moment measurements on hinge-us rotor helicopter during abrupt maneuvers near dels for equilibrium modes of under internal pressure Mathematical models for rubber apherical shell under int rnal pressure 18 p3179 N68-30314 24 p4197 N68-38121 [LR-21072, V. 3] NASA-TN-D-4574] 14 p2184 N68-24499 Ultrasonic frequency degradation and thermal aging of polychlorophene rubber solution in benzene [NASA-TT-F-11801] 18 p3099 N68-30352 Wind tunnel tests on 7-foot diameter rotor/wing Plasticity theory applied to p terms in rotor metering device for prediction of flow patgranular materials 15 p2452 N68-26067 (HTC-AD-67-3) 24 p4195 N68-38313 Strength, service life, and mechanism of failure of elastomers and polymers - peoblems of strength of highly elastic materials [FTD-MT-66-10] 19 p3378 N68-31566 ROTOR BLADES VTOL noise level problems at city center terminals, and techniques for reducing rotor and engine noise 17 p2808 N68-28990 Temperature response analysis for refractory coated blades of rotor vehicle during atmospheric entry [NASA-CR-91511] 04 p0597 N68-13796 Performance analysis on asynchro Pure homogeneous deformations studied in unfilled natural and butyl rubbers
[COA-NOTE-MAT-16] 20 p3509 N68-32362 Technical feasibility of new helicopter tail rotor con-pt utilizing monolithic spar of directed glass fibers apported in epoxy matrix - design, fabrication, and 18 p3158 N68-30526 Individual element balancing for stabilization of vibrating flexible rotor [RTS-4630] 20 p3536 N68-32503 Growth rates of single cracks for vulcanizates of utyl rubber in ozonized oxygen atmosphere [R-717] 24 p4198 N68-38279 atmosphere 21 p3707 N68-33901 namer with multiple circular arc airfolls num curvature tested over range of flow an-elocities - stator A R-546211 ROTOR BLADES (TURBOMACHINERY) Transonic stator with multi-nd minimum curvature teste-Unvaned diffusers optimum width for single stage centrifugal superchargers [FTD-HT-66-767] 02 p0158 N68-11653 itrile rubbers with sul-introduced on zeolite 22 p3896 N68-33675 fur dioxide and hydrogen sulfide intr [TRANS-1528] 22 NASA-CR-546211 20 p3394 N68-33499 Transonic stator with mu and minimum curvature test gles and velocities - stator B [NASA-CR-54622] ncreasing convective heat transfer rate in air cooled nd tube by increasing flow velocity with blade swirnultiple circular arc airfoils ested over range of flow an-Thermo-elastic effects in rubber [WTHD-1] 22 p3897 N68-35808 ex vulcanization by irradiation 51 23 p4085 N68-37026 Rubber Intex (CEA-R-3345) 02 p0290 N68-11743 20 p3394 N68-33500 Transonic stator with double circular arc airfolls tested over range of flow angles and velocities [NASA-CR-54623] 20 p3395 N68-33501 Effects of simulated space radiation on mechanical properties of synthetic and natural rubbers [RAE-TR-68042] 23 p4085 N68-37114 State of the art review for erosion of steam turbine [FTD-MT-67-37] 07 p0939 N68-16759 RAE-TR-020-42]
Thermodynamic properties of polymer solutions
24 p4271 N68-37550 Frequency tuning of bending modes for airfoil com-ressor rotor blades Heat transfer in turbojet or cooling experiments on wa cooled gas turbine rotors [FTD-HT-23-958-67] abustion chambers, film temperatures, and air

RUBBER COATINGS

20 p3580 N68-33575

20 p3580 N68-33577

Air cooled gas turbine roto

Aging of neoprene in wea [AD-656500] 01 p0080 N68-10229

ced by blade loads

08 p1247 N68-17505

16 p2780 N68-27706

ction and control of helicopter vibrations in-

SUBJECT INDEX Rubber to metal bonding meth manufacture of compliant surface be [REPT.-10] e bearings 11 p1708 N68-21624 RUBIDIUM Sensing head, control unit, courubidium magnetometer - atomic (REPT.-67-1) ner, and recorder for ic oscillator 05 p0657 N68-14003 erties of sodium, potas-Critical thermodynam 05 p0757 N68-14812 (FEL-52) Analog and digital circ power supply of rubidium is, optical package, and omic time and frequency reference system for man [NASA-CR-65942] or p0995 N68-16320 ipin relaxation in optically of optical pumping to detect of simple alkanes pumped rubidium and t free radicals in photol 10 p1488 N68-20110 ic stiffness and proerties of rubidium 19 p3290 N68-31055 (TR-111) Electric dipole pola lities of sodium, pota rubidium, and cesi [COO-1112-164] 20 p3539 N68-33317 RUBIDIUM COMPOUNDS Thermodynamic study of potassium chloride rubidi m chloride water system [PA-TT-62] 02 p0281 N68-11415 Phase diagram of rubid anadium pentoxide melts oxide reaction with 13 p2018 N68-23835 abidium nuclear magnet netic crystals of rubidiu ce in antifer 20 p3415 N68-32267
Radio frequency Stark spectra of rubidium fluoride, rubidium chloride, cesium fluoride, cesium chloride, and sodium iodide measured by molecular beam electric reasonance method [UCRL-17909] Nuclear spin lattice relaxation of several nuclei in ru-dium manganese chioride dihydrate 24 p4305 N68-37474 BUBIDRIM ISOTOPES Electron paramagnetic resonance technique for measuring apin-exchange cross sections of Cs 133, Rb 87, Rb 85, K 19, and Ns 23 [REPT.-04941-4-T] 19 p3330 N68-31542 RUBIS ROCKET VEHICLE Rubis rocket probe used to obtain electron density rofile up to 2000 km altitude 10 p1522 N68-20034 Characteristics and performance of French Issued vehicles and sounding rockets in testing spaceborne equipment [NT-9/68/EN] 10 p1599 N68-20228 ma ray induced center ig plane polarized light 09 p1409 N68-19106 uous fluorescence, and ts on ruby crystals in 09 p1409 N68-19118 structive test of ruby crystal imperfections by [AFCRL-67-0648] 13 p2131 N68-23136 wiet articles on cry phy of corundum and ruby boules [T-RC-25] 16 p2688 N68-27363 Chemical analyses of chromium content of rubies to etermine impurity effects of magnesium and calcium a quality of corundum 16 p2608 N68-27364 nium content in ruby ng crystallization 16 p2608 N68-27365 Chemical analyses of choules, and chromium loss di Numerical data and his in ruby and colorless coru

fractometric, gon-imov methods of me etic ruby and corun

BURY LASERS Focused ruby laser radiation effects on pend Particle acceleration by evaporar Q-switched laser beam [NASA-CR-927] 01 NASA-CR-860071 scattering by plasm Mobile laser system for deta ablative materials from reentry [SC-DC-67-1948] [P-19] [TR-5] Dete IREPT-07599-15-T1 Pulsed ruby laser holograms of reacting liqui propellant sprays [NASA-CR-93862] 09 p1415 N68-1943 Stimulated compton ac switched ruby laser Output energy of reso (FTD-HT-66-554) [REPT.-759] [AD-666245] Ruby laser produced binematography, visible a (CEA-R-3296) [NASA-TM-X-61083] Q-switched ruby laser for develor gerred spark gap [CERN-67-33] 13 uman emission in Inde excited by pu 16 p2608 N68-27366 Tuned ruby laser for pi between excited broad (NASA-CR-94928) 16 p2660 N68-27367 Ruby and neodym termining color of corun-ity of rubies

[MR-68-4]

Laser beam tech around thermocoup sphericity using high [NASA-CR-81597]

(WERL-3472-9)

16 p2793 N68-27440

16 p2740 N68-28302

a production by high power Q switched ruby

of rubies 16 p2660 N68-27368

16 p2660 N68-27370

16 p2668 N68-27379

c ruby crystals as function

e for detecting im-

ted Raman en

Crystallographic orientation of ruby workability, and urface grinding as function of optic axis position 16 p2668 N68-27380 Characteristics of Stokes light and hypersound generated by Brillouin scattering of ruby leser light in liquids and fused quartz
[APCRL 68-0112] 17 p2897 N68-29016 nts by pole 01 p0072 N68-10195 18 p3082 N68-29789 tion pressure using e of ruby insers following cal blenching, and therma 01 p0072 N68-10467 NYO-3330-181 18 p3084 N68-30344 n and self focusing of lases High velocity shawinging ruby laser [T-41/67] holography by freely 02 p0219 N68-11081 18 p3084 N68-30498 Bibliography, theory, and experiments on optic xing in bulk semiconductors for millimeter was sains of solid (FTD-HT-23-579-67) 02 p0259 N68-11439 18 u3085 N68-10509 ce effect on generation capacinulti-subunit particles or ruby laser as light source 04 p0518 N68-13427 19 p3287 N66-30896 s on ruby laser output 05 p0724 N68-14251 (AD-6706[5] laser beams 19 p3316 N68-31399 ting artificial clouds of ehicles 05 p0671 N68-14404 Ruby lucer energy effe ectional activity of from toluene and alse ruby laser 07 p1005 N68-16816 19 p3211 N66-32088 ring line width of pulsed Resonant reflect ruby laser spect [IPP-1/75] 20 p3492 N68-32495 tion with game 21 p3700 N68-33639 Interaction of ruby is 07 p1005 N68-16908 tion of state of paraffin by thermant during heating by laser radiation mping experiments or tracy of ruby lasers 21 p3700 N68-33928 08 p1255 N68-17544 sitions in coronese us ad spectroscopy Rayleigh scattering of ruby laser light in neutral gases nanosecond laser photolysis a [TRW-05824-6009-R000] 08 p1183 N68-17963 22 a3826 N68-35489 Q switched ruby laser tance enhancement of 09 p1415 N68-19439 single and polycrystalli (SAMSO-TR-48-283) mductore 22 p3952 N68-35955 on for Raman spectra analyses on ge as light source for Pulsed electrodeless di 09 p1350 N68-19478 Inser excitation [FTD-HT-67-392] 23 p4072 N68-36282 Sequentially modulated ruby laser system for transmitted and scattered light dynamic photoelasticity
[T&AM-304] 10 p1536 N68-19499 ues to improve power Laser operation a 23 p4072 N68-36341 IFTD-HT-67-2151 les of emission from Pulsed ruby laser propellants combusti [NASA-CR-97225] s of hypergolic rocket 10 p1536 N68-19922 23 p4161 N68-36641 ng of electrons by Q Pulsed ruby laser s [NASA-CR-97355] 11 p1708 N68-20630 24 p4265 N68-38160 ser during switch off of Q factor moduli 11 p1708 N68-20722 FTD-HT-23-735-671 24 p4265 N68-38237 Multi-prism Q set prisms on motor a mounted on outer fixe [FTD-HT-67-404] n on rat performance 11 p1636 N68-21392 of reflecting pr 11 p1709 N68-21557 24 p4265 N68-38301 ilium plasma studied by ultraviolet spectroscopy, U AERIAL RUDDERS icle detection 12 p1932 N68-22998 BULER METHOD ng engine for terferometricany infecture of large diffr s and ruby laser radar 22 p3885 N68-35906 13 p2079 N68-23359 pment of laser trig-RULES NT FLIGHT RULES NT INSTRUMENT FLIGHT RULES NT WHITHAM RULE 13 p2079 N68-23570 of acetone and carbon ods for motor vehicle air pollution pol alytic meth 13 p2110 N68-23958 P-37761 10 p1616 N68-19873 Loss mechanisms in ruby laser crystals, and theory and designs of spherical-mirror Fabry-Perot inter-ferometers [AFCRL-68-0061] 13 p2079 N68-24011 RUMANIA research in Rum IJPRS-45494] O switched ruby laser induced luminescence and hotoconductivity in silver halides 14 p2377 N68-24707 UMBLE INSTABILITY
U ACOUSTIC INSTABILITY 15 p2478 N68-26324 ocatalysis of reaction alse and fluorocarbons 15 p2417 N68-26516 RUNGE-KUTTA METHOD ture methods of form dating Runge-Kults ced retinal damage (NASA-TR-R-275) 01 p0083 N68-10121 Stability regions for Runge-Kuita methods and Adams predictor-corrector methods for ordinary differential examples of the control of the cont 16 p2596 N68-27349 ue to initiate single bubble and bubble growth rate and

11 p1726 N68-2

Fifth order pseudo Runge-Kutta methods derived for

St

Fi

Pi

les, current algebra and tary particle theory 16 p2721 N68-27341

Parameters affecting installation of equipment for detecting jacket ruptures of reactor fuel elements [CEA-R-5342] 12 p1879 N68-22973 Multi-step Runge-Kutta methods using method of Hydrothermal crystal growth of rutile structure ox-[NASA-TN-D-4400] 14 p2215 N68-24853 11 p1729 N68-21100 Vacancies and impurities effects on relaxation of dielectric properties of reduced rutile
19 p3351 N68-31144 Method of detecting cartridge rupture in nuclear Error theory of Runge-Kutta metho 16 p2697 N68-27760 14 p2296 N68-25374 Rupture and tensile properties of cotton dacron blended yarms [TR-68-16-GP] 15 p2488 NAR-76202 Rigid-body dynamics of rotors supported in plain, lindrical, cavitated, fluid-film journal bearings in-stigated by Runge-Kutta extrapolation techniques 19 p3275 N68-30914 Vacuum calcination temperature effects on grain and particle size of rutile [RTS-4457] 20 p3418 N68-32508 Brittle rupture analysis on body with linear disloca-Shapes of liquid drops resting on flat surfaces deter-mined by Runge-Kutta solution of Laplace capillary Microwave pump requirements for field operational roadband rutile traveling wave maser for Applications 16 p2778 N68-27586 Technology Satellite progri [NASA-TN-D-4764] 21 p3699 N68-33635 embrane rupturing study for flow shock tube to ure thermal conductivity of high temperature [NASA-TN-D-4779] 20 p3465 N68-33165 Mathematical model for calculating electrical amients in defective structure of rutile semiconduc-Numerical solution of hyperbolic equations by Runge-Kutta method [NASA-TM-X-61182] 17 p2866 N68-28346 21 p3713 N68-34282 21 p3755 N68-34500 Surface defect analysis to predict failure pressure for Numerical solution of hyperbolic equations with two independent variables using Runge-Kutta method [NASA-TM-X-61184] 21 p3714 N68-34456 Infrared adsorption lines in rutile result from proton or deuteron trapped near cation of valence 3 [COO-1434-04] 23 p4156 N68-37126 (BMI-1836) 17 p2982 N68-29120 Effect of surface active materials and adsorption layers on plastic flow before rupture and plastic rupture in metals such as tin, lead, and copper [NASA-TT-F-11737] 8 p3090 N68-30183 Runge-Kutta formulas for ordinary differential equa-RYAN AIRCRAFT tions [NASA-TM-X-61183] XC-142 AIRCRAFT 21 p3715 N68-34698 Mathematical model for determination of pressure and temperature transients inside containment building following rupturing of water cooled reactor [EUR-3927.E] 18 p3014 N68-30186 Runge-Kutta formulus of high order with stepsize control through leading truncation error term [NASA-TR-R-287] 23 p4089 N68-36753 RYAN MILITARY AIRCRAFT
U MILITARY AIRCRAFT S U ENGINE TESTS Rupture strength and chemical composition of Fe, Ni, Co, and refractory metal alloys [DMIC-MEMO-236] 18 p3096 N68-30800 RUNWAY CONDITIONS Runway surface texture conditions effect on wet run-way braking friction coefficients created by aircraft Metal surface shielding by rupture products from low density laser radiation fluxes S- IN SATELLITE U OAO 19 p3288 N68-31757 [NASA-TN-D-4323] 05 p0606 N68-14903 8- 27 SATELLITE U ALOUETTE I SATELLITE Supercooled pressure gradient approximations in resourced water reactor systems following primary Fog chamber test results of runway videometer and TV display screen compared with data obtained in air-S- 49 SATELLITE m rupture 19 p3313 N68-32038 port operations [FAA-RD-67-32] 06 p0847 N68-15999 Laboratory tests on relation between eardrum failure sanimals and high explosive blast overpressures DASA-2064] 20 p3405 N68-32659 S- 50 SATELLITE U OGO-C Calibration techniques development for runway visi-lity transmissometer systems [DASA-2064] S- 51 SATELLITE U ARIEL I SATELLITE bility tranm [RD-68-7] 21 p3692 N68-34311 Pneumatic cylinder test results [NASA-CR-96543] 21 p3697 N68-34263 BUNWAY LIGHTS S- 57 SATELLITE U OSO-C Photometer detection contrast and visibility of run-Tear growth and propagation from cracks in plastic way lighting in dense fog [SRDS-RD-67-33] S- 66 SATELLITE U BEACON EXPLORER A 06 p0822 N68-15788 [TRANS-1531] 22 p3896 N68-35519 TRANS-1331]
Initiation and extent of ductile pipe rupture, includ-ty studies of surface flaws and through-wall notches 8Mi-1828]
23 p4182 N68-36758 U SUPERHIGH FREQUENCIES U ULTRAHIGH FREQUENCIES Aircraft tire wear tests on open-graded macada unway friction course RAE-TR-67178] 09 p1269 N68-18374 RUTHENIUM S MATRIX THEORY Method for determining low concentrations of ruthenium dispersed as metal or dioxide in milligram sized samples of uranium dioxide [AECL-2771] 06 p0787 N68-15454 Dynamic hydroplaning, viscous hydroplaning, and tire tread rubber reversion effects on tire traction on wet runways [NASA-TN-D-4406] 10 p1457 N68-19620 Comparison between saturated superconvergence am rules and bootstrap relations for static models TH/217] 01 p0114 N68-10839 [TH/217] Regge pole domination of strong interactions, and S matrix approach to bootstrap of rising trajectories [TH/222] Asphalt coverings for highways and airport runways 10 p1543 N68-20499 Determination of ruthenium in uranium carbide-uthenium and plutonium carbide/uranium carbide-uthenium cermets by oxidizing ruthenium with sodium Mechanical properties of snow and ice, and feasibili-Existence of scattering matrix in Wightman ap-roach to axiomatic theory of nonrenormalized inty of ice and runway construction [CRREL-TR-176] hyperchlorite [AERE-R-5617] 06 p0788 N68-15475 11 p1679 N68-20802 Chemical reaction between ruthe [PG-819/W/] 09 Bivariate frequency distributions of pressure altitude and temperature and effects on required runway negths and allowable takeoff weights [1] p1619 N68-21046 of p1294 N68-18736 03 p0389 N68-12348 [JINR-P2-3086] rification of S matrix properties terminology Oxidation reduction reactions of ammine complexes [UCRL-16983] Monte Carlo method, kernel function, and 5 matrix theory applied to design and analysis radiation shields in euclear rocket systems [NASA-CR-91341] 04 p0538 N68-13501 09 p1295 N68-18891 oving to improve tire traction
1 12 p1855 N68-22063 [NASA-TM-X-61061] Luminescence of some ruthenium and osmium com-Elongation tests on free pu way marking paint flexibility [NCEL-TR-568] int films to determine run-10 p1484 N68-19927 Determination of ruthenium, cerium, and zirconium radioactivity of sea water by carrying over and adsorption using manageness dioxide [CEA.R-3284] 11 p1689 N68-21264 Quantum field theory unitary relativistic model with rapidly increasing spectral function [JINR-E2-3472] 05 p0709 N68-14276 13 p2049 N68-23974 Water-Extended Polyester /WEP/ resin for rapid 11 p1689 N68-21264 repair of damaged runways Acausal and unitary scattering matrix example [JINR-P2-3506] 05 p0713 N68-14490 16 p2683 N68-27944 Partial pressure measurement of ruthenium tetroxide over ruthenium dioxide as function of oxygen partial Standarized methods for analyzing ground flotation characteristics for aircraft of various designs based on type of airfield construction [SEG-TR-67-52] 19 p3199 N68-31777 Scattering theory model based on Hamilton used to determine 5 matrix in collision processes [AERE-TRANS-1066] 06 p0883 N68-15121 IN-1013] 12 p1836 N68-22474 Scattering matrix theory for solving problem of in-dent plane wave diffraction by thick conducting half ane and dielectric-loaded waveguide AFCRL-68-0015] 11 p1744 N68-20620 RUTHENIUM ALLOYS Comparison of properties of bulk and powder latinum-ruthenium alloys Evaluation of flight director elements-rising runway, spanded localizer, and rollout steering during simu-20 p3496 N68-32555 AFCRL-68-0015] (SRDS-RD-68-10) Wave equation applied to spectral and scattering theory of electromagnetic fields [MRC-TSR-770] Il p1744 N68-20654 Interaction with derivatives model - unitarity problem and normal form of solution [ITF-67-26] 12 p1937 N68-22797 22 p3805 N68-35335 **RUTHENIUM ISOTOPES** Physical properties of ruthenium isotopes by gamma ray spectrometer Four forms of dynamic taxi design procedures for three dimensional character of runway/taxiway surface 14 p2319 N68-25469 23 p4040 N68-36479 [FAA-ADS-68-11] RUTHE Adsorption of potential determining ions at rutile-lution interface in simple inorganic oxide-aqueous Methods for physical interpretation of time to rup-ture tests on reactor application metals [EURAEC-1908] 04 p0523 N68-13867 Scattering theory for Maxwell equations in exterior 09 p1291 N68-18314 13 p2116 N68-23440 [TR-3] Experimental study of rupture strength of water under dynamic loads in absence of free surface 12 p1862 N68-22398 Electron paramagnetic r interstitials in n-type rutile [COO-1284-6] Classic and qu Born-Infeld field [JINR-P2-3662] um S matrix in two dimensional ance studies of titaniu 09 p1408 N68-18995 14 p2303 N68-24589 S matrix, Regge p cts on high temperature and uranium oxides 13 p2016 N68-23702

[CEA-R-3328]

Runture detection installation for nuclear reactor

12 p1910 N68-22770

3

4

Isobaric spin analog reso proton inelastic scattering	mances in zirconium 90 from
S matrix, Heisenberg an nonlinear relations in quan [ITF-67-41]	d current-like operators, and turn field theory 16 p2725 N68-27961
S matrix theory, pion-	pion scattering length, and
S matrix theory for parti	pion scattering length, and f strong interactions 16 p2725 N68-27964 cle classification from Regge
theory for quarks	17 n2928 N68-28648
proof of generalized Levis phase shift [IC-67-34]	
[IC-67-34] Perturbation theory an	17 p2929 N68-28768 d covariant quantization of ctional integration 17 p2935 N68-29168
[ITF-67-36]	17 p2935 N68-29168 matrix elements applied to
Vector currents for S strangeness of hyperons, baryon-meson and meson-	18 p3130 Nes-29944
Synthesis of lumped n-p	ort electrical networks with
[PIBMRI-1370-67] Overlapping spectral line	ort electrical networks with 5 matrix theory 18 p3047 N68-30371 c pressure broadening theory
	ALE(1, (.) (.) (A) (A) (A) (A) (A) (A) (A) (A) (A) (A
[NASA-TT-F-11817] Relativeitic quark field t	18 p3137 N68-30730 heory, and general formulas ents to expectation values of uark field 18 p3139 N68-30803
time ordered products of q	uark field
S matrix theory of pe	rturbations for calculating electromagnetic mass dif-
ferences	
Conference proceedings	19 p3324 N68-31082 on nonlocal quantum field m factors, S matrix theory,
theory, Hilbert space, for and space-time functions	m factors, 5 matrix theory,
[JINR-P2-3590] Scattering matrix techni	19 p3336 N68-32107 que of representing absorp-
tion line formation in magn [RTS-4317]	etic field 20 p3584 N68-32368
Analyticity and unitarity /extended one pion exchan	y in model S matrix theory ge model/ 21 p3734 N68-33744
Double-peaked structure spinless particles above ine	in S wave acattering of two lastic threshold 22 p3935 N68-35813
Approximate symmetry vector current, and implication for equal time commutators	predictions for hadron axial ations of bootstrap principle
THE PROPERTY OF THE PARTY OF	23 p4115 N68-36308
pion scattering using S mate	23 p4115 N68-36308 calculation for elastic pion- rix theory 23 p4116 N68-36450 and Coulomb scattering am-
Hydrogen atom levels a plitude calculations using solution	nd Coulomb scattering am- S matrix and Schroedinger
(REPT68/19)	23 p4119 N68-36684
broken SL/2,C/algebra	trajectories according to
[KFKI-1/1968]	23 p4122 N68-36846
[TH-08/28]	on of perturbation theory of 23 p4124 N68-36929
S matrix theory and scr	attering amplitude calcula-
[TH/68/29]	attering amplitude calcula- lem 23 p4124 N68-36946
matrix of inelastic nucleo	to develop formula for T in scattering on nonlinear 23 p4125 N68-36968
Relativistic aspects of the putation of form factors in S [LPTHE-TH-68/10]	ee body problem with com-
Optical theorem for qui	asi-electron scattering and
DESY-68/28]	23 p4133 N68-37185
stripping and nickup rea	theory applied to deuteron ctions as introduction to ctions
[RE-343]	24 p4316 N68-37934
Discontinuity or hump p curves reported for wide va- ditions	henomenon in fatigue S-N
ditions [ARL/SM-314]	16 p2790 N68-28267
S-state pion-nucleon int	modes formy and cast 1.
wave nucleon-nucleon about	poions

02 p0249 N68-11707

Existence theorems for finite state stochast [NASA-CR-94428] Effective moments of in dle point Saddle point th imum principle [AD-673404] ADDLES (SUPPORTS)

SAFETY DEVICES for south Australian um trace amplitude along ical component Benion NT AIRCRAFT SAFETY NT FLIGHT SAFETY NT INDUSTRIAL SAFETY NT RANGE SAFETY NT REACTOR SAFETY 04 p0504 N68-13749 a to sigma ratio in is action in quark model ospin S wave K meson Operational safety of nucl ountermeasure development baryon rea [TH/226] er rocket engines, and 05 p0704 N68-13990 Pion S wave model for calculating nucleon-nucleon phase shift [IPNO/TH-88] 10 p1562 N68-19557 03 p0371 N68-12190 G3 p0309 N68-12755 (ANL-7291) Two point functions for scattering of low energy parotion protection 04 p0460 N68-12873 ticles [JINR-P4-3354] 10 p1562 N68-19637 Radiation detector and [UCRL-50007-67-2] la control systems 12 p1875 N68-22566 Baryon mass spectra in dyn ic S wave SU 6 model 08 12 pi921 N68-22076 Safety problem hydrogen targets [DESY-67/44] to handling of liquid on ratio in isospin-1 S-wave in quark model 13 p2122 N68-24303 Lambda to sigma hyperon ra antikaon nucleon reaction in qua [LPTHE-TH-226] 12 p1932 N68-22640 Safety and ope [CEAL-1038] 14 p2234 N68-24598 Toward vector meson bootstrap in anti-boson bo [NASA-TM-X-52454] 15 p2448 N68-25704 20 p3541 N68-32318 Feasibility of NASA highway safety and transpor [NASA-CR-95223] S wave pion pion elastic scattering in pion proton in-16 p2799 N68-27724 22 p3927 N68-35150 ent of cryo Theoretical and experime icrowave shear waves in solids stal investigation of Review of ac LA-DC-9200 lety precautions 16 p2797 N68-28026 23 p4159 N68-37329 surements on molyb-ral metals 24 p4304 N68-37432 Boundary values for first lated to reliability and sufe and structural systems [NASA-CR-93961] Neutron cross section me enum isotopes and various nat ion probability as re-mance of mechanical 19 p3378 N68-31629 S-2 AIRCRAFT s design tool for deter-scation planetary flyby porary hardware 19 p3371 N68-32162 Availability concept as mining safe and effective and return mission using o [NASA-CR-73238] Macroscopic and microscopic study of fracture due to stress corrosion in magnesium alloy landing wheel of S-2 aircraft [TDCK-49845] 15 p2385 N68-25912 SABOT PROJECTILES Safety manual for pen [APGC-TR-68-53] ing neodymium laser 20 p3406 N68-3299 Sabot stripping method for gas guns [NASA-CR-90503] 02 p0195 N68-11656 Safe handling and acc tion of radio Test evaluation of long fin-stabil and pyrophor [TID-24236] lized projectiles on 21 p3677 N68-34730 (ISL-T-25/67) Fire hazards and safety of co 06 p0763 N68-15219 mercial plantics 23 p4062 N68-36535 Development, and evaluation of high velocity projec-tile thrust rings for smooth barrels [ISL-T-26/67] 06 p0821 N68-15220 SAPETY DEVICES

NT ARRESTING GEAR

NT EJECTION SEATS

NT HELMETS

NT SPACE SUITS Feasibility of met orological shell for standard artil-(ECOM-5161) 15 p2496 N68-26270 nent system for maintenan ts of gun launched Sabot n simulated environment 15 p2464 N68-26841 Astronaut boom attachs Parachute expulsion tests of meteorological projectiles in sim [ECOM-5 [79] (AFAPL-TR-67-14) 01 p0016 N68-10548 Optical properties of safety glass repeatedly expose X ray photography used with gas laser to study sabot separation in ejection tube of light gas gun [LRBA-E-1023-NT-12] 17 p2920 N68-28642 BM-RI-7062) 04 p0544 N68-13258 Upper atmosphere wind profiles from gun launched vertical probes - 15-16 Feb. 1967 [REPT.-9] 23 p4092 N68-36151 Fortran computer prog tion exposure data on film [CERN-67-28] o for interpreting radio-ges worn by personnel 05 p0634 N68-14753 Five inch gun meteorological aounding site at Highwater, Quebec [BRL-MR-1929] 23 p4092 N68-36190 nd systems development for toology, fuel elements, and 05 p0664 N68-14896 U CARBOHYDRATES ner safety devices and methods for engineering documentation [NADC-MA-6702] SACCHAROMYCES 06 p0849 N68-15237 Phosphorus 32 labeled lipoproteins prepared from Saccharomyces cerevisiae in 0.002 M borated buffer solution with pH factor of 4 [EUR-3919.F] 17 p2821 N68-28930 Design criteria for unidi ctional, lightweight energy at system for Apollo or follow on projects [NASA-CR-65941] 07 p0948 N68-16183 ADDLE POINTS [GAME THEORY] Safety devices for gas ex [RAE-LIB-TRANS-1240] Some extensions of Kuhn-Tucker results in concave 07 p1097 N68-16780 NASA-CR-91076) 03 p0358 N68-11932 Functional differential equations for determining to imemensional vector spaces - Liapunov function symptotic theory of linear systems, and Floquet theory and accident prev (AMD-TR-67-2) [NASA-CR-70260] 09 p1365 N68-19438 Fire safety measures for hyperbaric diving sims Theory of class of fim 10 p1547 N68-20229 09 p1288 N68-18749 putational procedures

12 p1899 N68-22805

13 p2118 N68-23668

23 p4036 N68-36410

redicting stresses in twin ylindrical vessels 21 p3785 N68-33803

nertia of heavy nuclei at sad-

s and relation to discrete max

Development of fire extinguishing systems, and pro-tective clothing for oxygen enriched atmospheres tuman safety, space environment simulation chambers and accident prevention 09 p1287 N68-18744

maide space simulat NASA-CR-920561 12 p1828 N68-22326 Predicting large di bjected to nonsym of flat rectangular plat da, and design of energ rier system 18 p3175 N68-29713 [ARA-94, PT. 6] Chemical oxygen-grand applications in gas [NASA-TT-F-11702] on protective devices

ar and exp ct con epts for s rocket engines [NASA-CR-96699] 22 p3909 N68-34833

SL

1

18 E

17

oi [F

(F

Pi

in (7

fid for [B

SAM U SAN

581

M

100

SAFETT FACTORS		
Conference on fire safety	y measures for sircraft fuel	
[AD-672036]	23 p3988 N68-36268	S
	ft fuel tank inerting and/or	hyd
translation or discourse of	23 p3989 N68-36273 r commerical aircraft fuel	fluid
systems		
Aircraft fuel system fire	23 p3989 N68-36274 safety requirements and	SALT
devices in industrial practice	23 p3989 N68-36275	tect
Developments and device		C
Developments and device tainment of fires in alternate	uri systems 23 n3989 N68-36276	Fun
Industry requirements for and factors affecting applica	fuel fire protective devices tion of safety measures	Н
Manned spacecraft escape	23 p3989 N68-36277 e systems for orbital safety	SAMA
Manned spacecraft escape [TR-0158/3520-82/-1]	23 p4175 N68-36526	P
Nuclear reactor feel el	ement safety for Danish	deci
Nuclear reactor fuel el research reactor DR2 using ([RISO-M-732]	amma spectrometers	[AF
SAFETY FACTORS	24 p4290 Nos-3/888	FERG
	direct laser intensity levels	(UC
Equations for calculating on human retina are descretinal intensity levels as ext	ribed and related to safe	sam
ture		Prof
(SC-RR-67-563) Systems safety checklists	01 p0012 N68-10632 for use in preparation and	Ti
Systems safety checklists review of launch, operating tenance, handling, calif- procedures for space vehicle	g, test, checkout, main- tration, and ordnance	(FT
procedures for space vehicle [NASA-TM-X-53664]	01 p0047 N68-10975	tron
Research activities includi physics, synchrocyclotrons, a	ng nuclear and theoretical and safety factors	ropi (KR
[AR-12]	03 p0386 N68-11997	R
planning	legal aspects of airport	and:
[INC/C2/P6]	14 p2187 N68-25467	Spinoto
Operational noise abatem- ing reduction in safety margin	ent procedures and result-	INCIL
ing reduction in safety margin [INC/C3/P8]	14 p2190 N68-25643	Se um a
Safety factors and function sive devices, delay circuits, at	nal design of electroexplo- nd shaped charges	ethy
sive devices, delay circuits, at [NASA-TM-X-60363]		Ph
Safety hazards of polonius abort	m 210 during launch pad	**
(SC-CR-67-2801)	19 p3312 N68-32020	To
Oscillograph method of tes trical circuits	The state of the state of the	mean
[SMRE-TRANS-5523]	20 p3448 N68-32359	(CN
Test facility development, portation accidents and fires packaging and safe transport. (FUR. 348 S.F.F. V. 3)	to compile standards for of radioactive materials	SAMA
(EUR-3485.E,F, V. 3)	20 p3491 N68-33594	in str and 5
Test requirements for typ	pe B packaging for safe	(TR
Test requirements for type transport of radioactive mater (EUR-3485.E,F, V. 4)	rials - (year) and the second	for n
The state of the s	20 p3491 N68-33595	(SC-
Threshold effects and safe	ty levels of laser eye and	SAMO
skin hazard (SC-RR-68-174)	22 p3813 N68-35669	orbit
SAFETY HAZARDS U HAZARDS	Doing office, for a se-	(RAI
SAHA EQUATIONS		Early
Generalized Saha equation	for nonequilibrium two	SAMPL
- temperature plasmas	08 p1219 N68-17813	UE
SAILPLANES U GLIDERS		SAMPL
SAILS	the column to th	SAMPL
NT SOLAR SAILS	plus on the day sign	Ra
Mudified Bernoulli theory i of wind effects on sail boats	O4 pO437 N68-13680	[UCR
SAINT VENANT PRINCIPLE	O+ po+37 (NG6-13080)	cal sa [NAS
Direct numerical determina solids using Saint Venanta tor	ation of stresses in elastic	Dat
solids using Saint Venants tor	sion problem for illustra-	ORC
[TR-15]	07 pt089 N68-16408	Ope
Optimal solution of Saint Ye elastic circular cylinders	mant flexure problem for	televi
TATALONNY CONDE 1	15 p2570 N68-26423	instru
Generalized Fourier expans cal analysis of Saint Venant structural beam	non method for numeri-	[NAS
structural beam [GSF/MC/64-7]	an area principle in	[NAS
[GSF/MC/68-7] SALICYLATES	20 p3602 N68-32899	Dev

ALT BATHS	a = 41-1-ya
hydrocarbons, not dry so saline solutions	tanium alloys in chlorinated odium chloride, and aqueous
Vertical jet diffusion is	14 p2268 N68-24403 n nonlinear density stratified
fluids	21 p3680 N68-33976
ALTS	in a set of the property of the second
Ultrasonic instrumental tection in liquid metals or (NVO. 3622-10)	tion for incipient boiling de- fused salts 01 p0066 N68-10758
Crystallization of disc	dium, dibarium, and man-
ganesium salts of adenosis (UR-49-866)	odium, dibarium, and man- ne triphosphate 08 p1138 N68-17237
Heat capacities for mag	netic salts near critical points 10 p1490 N68-20217
AMARIUM	and the state of t
samarium and gadolinius decay schemes	is of cerium, neodymium, m to determine radioactive
decay schemes [AFCRL-67-0595]	09 p1405 N68-18261
reactions	samarium 147 europium 147
(UCRL-50332)	10 p1568 N68-19950
samarium 141, promet promethium 142 [JINR-P6-3540]	by decay of samarium 140, hium 140 and decay of
	12 p1935 N68-22712
Total neutron cross sect and samarium [FTD-HT-23-655-67]	tion measurements of indium
	13 p2122 N68-24229 nalysis and samma spec-
rogsum, and dysprosium in	nalysis and gamma spec- of lanthanum, samarium, eu- apatites
[KR-120]	14 p2220 N68-25645
and Sm 149	in nuclear fuel due to Xe 135 15 p2505 N68-26835
	nents of electronic K X ray S
	19 p3325 N68-31142
Separation of europium um and europium mixtures ethylenediaminetetracets	and samarium and gadolini- s in ion exhange elutions with sto chelates
	20 p3426 N68-32859 ium-gadolinium alloy system
TOTAL ST	20 p3500 N68-32871
Total neutron cross se measured in energy range	ction for natural samarium from .06 to 1 eV with crystal
(CNAEM-52)	21 p3735 N68-33860
MARIUM COMPOUNDS	C. W. F. S. Sangal
in study molecular energy and Sm compounds	escence, and energy transfer levels and excitation in Eu
[[RANS-2004]	19 h3133 Mee-2036/
Impact test results on su for nuclear fuel elements	amaria and tungsten cermet 21 p3728 N68-34736
MOS	
Visual observation of Sa	mos 2 satellite to determine 06 p0909 N68-15307
[RAE-TR-67082]	06 p0909 N68-15307
Cinetheodolite observati Earlyburn between April at	ions of SAMOS 2 made at ad June 1965 10 p1600 N68-20299
MPLED DATA	10 p1600 N68-20299
MPLED DATA U DATA SAMPLING	THE RESIDENCE ASSOCIATION AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON AN
MPLED DATA SYSTEMS U DATA SAMPLING	(Month transfer)
MPLERS Radiation detectors, air s	amplers, fire and smoke de-
ectors, and respirators for UCRL-50007-67-1 }	samplers, fire and smoke de- hazard control 02 p0209 N68-11061
Abrusive techniques for I	lunar and planetary geologi-
NASA-CR-90328]	02 p0205 N68-11338
perties of English spoken di	physical and linguistic pro- gits 1 through 9 03 p0327 N68-12591
Operational capabilities.	, methods of deployment
command and control, are elevision viewability of Sur	, methods of deployment as of lunar operation, and veyor lunar surface sampler
netrument NASA-CR-93205]	08 p1244 N68-17411
Advanced soil sampler to NASA-CR-93679]	08 p1244 N68-17411 chnology 09 p1428 N68-19391 stion of sieve sampler, and
Development, and evalue	ation of sieve sampler, and

mpler for planetary soil probing 09 p1428 N68-19394

```
Bioassay coupon locations on capsu
training model subassemblies, and monit
[NASA-CR-94370] 12 p18
                                                      d monitoring plan
12 p1829 N68-22524
   Breadboard model of geological acquisition and
transport device for lunar and planetary soil sampling
[NASA-CR-94401] 12 p1883 N68-22820
  Automatic sample col
water content of fog
(T-R-567)
                                                      13 p2070 N68-24139
   Design criteria for generating engineering prototypes 
of lunar and planetary soil samplers and mechanical
   [NASA-CR-94767]
                                                     14 p2264 N68-24771
   Air samplers, conti-
lection of microorga-
tion of stratosphere
[NASA-CR-1101]
                                         ination, and sterilization in col-
ns for microbiological explora-
                                                     16 p2601 N68-28247
   Design parameters and breadboard models for advanced soil samplers [NASA-CR-95994] 19 p3284 N68-31367
  Feasibility of unscattered sampling system for Mars atmo (NASA-CR-66683)
                                            red molecular beam probe
                                                  osphere analysis
23 p4174 N68-37395
     Improved agar spray technique for sampling surface
  (NASA-CR-97349)
                                                     24 p4203 N68-37871
   Soil mechanics surface sampler and analysis of sam-
ples from Surveyor 7 Tycho landing site
                                                    ding site
24 p4345 N68-38250
  Real time sampler for measurement of instantaneous atmospheric concentrations of zinc sulfide particulates in diffusion studies
                                                     24 p4286 N68-38395
SAMPLES
  Statistical method for sample size determination to minimize destructive testing costs [BRL-R-1376] 08 p1182 N68-17774
    Rotating sample holder for X ray emission analysis of 
onhomogeneous samples
  [GEPP-8]
                                               23 p4041 N68-36993
SAMPLING

NT AIR SAMPLING

NT DATA SAMPLING

NT RANDOM SAMPLING
  Microorganism decontamina
gram for AIMP-E spacecraft
[NASA-TM-X-63000]
                                                   tion and sampling pro-
                                                   01 p0006 N68-10033
  Bayesian design of single, double, and sequential
stratified sampling for estimating proportion in finite
  TR-127]
                                                   02 p0228 N68-11361
  Real time sampling of zinc sulfide particulates in at-
mospheric diffusion studies
[BNWL-SA-1407] 02 p0213 N68-11481
 Bayesian stratified two phase sampling
[MRC-TSR-747] 02 p0229 N68-11495
  Sampling of highly radioactive streams in operating reactors and requirements of fast flux test facility pro-
 BNWL-491]
                                                   05 p0617 N68-13968
 Supplement to tables of joint probabilities useful in mixed acceptance sampling plans
[TR-N-29] 06 p0839 N68-15091
Evaluation of sampling slides and microscopic gridu
used to capture micrometeoritic particles during
Leonid meteor shower
[SC-M-6-7-607] 07 p1078 N68-16221
 Sampling requirements
biological analysis of plan
manned spacecraft
[NASA-CR-92749]
                                      nts for in situ geological and
clametary surface rocks by un-
                                                   07 p1080 N68-16557
    Sequential detection, and control for feedback com-
                                                   07 p0965 N68-16976
                                   nallest sample value, and asymp-
intical estimators
 Moments about sma
totic properties of stati
[AFML-TR-67-375]
                                                   09 p1357 N68-18283
   Method for sampling in
eutron-neutron interactions
                                               lastic pion-neutron and
                                     09 p1387 N68-18573
 [JINR-P2-3561]
 Limiting distributions
statistical tests
[TM-3478/001/00]
                                      as of maximum likelihood
                                                  09 p1366 N68-19482
    Generalized goal in fixed sample ranking and selec-
on problems
                                                   10 p1545 N68-19659
Double sampling tables for statistical quality control in nondestructive testing [BRL-R-1382] . 10 p1534 N68-20101
Decision theory approach to acci
[NMC-TM-67-77]
                                                  10 p1549 N68-20284
                                          rd signals
11 p1660 N68-20856
   Prediction of he
```

SALICYLATES
U SODIUM SALICYLATES

ear filtering of signals and integral representa-erivation of sampling expansions - communi-11 p1665 N68-21789 ling inspections of fleet of Boei 13 p1991 N68-23443 14 p2281 N68-24996 d and contr by sampled signal [FTD-MT-24-116-67] 15 p2441 N68-26582 ns, Bayes theorem 15 p2494 N68-26687 [APDA-306] or nuclear power plant 16 p2708 N68-28132 rface sampling as investigative technique [NASA-CR-95624] Mars exploration 17 p2970 N68-28890 ure lower confidence limits rectifying type inspection 18 p3 l05 N68-30406 on finite lo [TR-135] Microsan for analysis in unshielded [WAPD-TM-685] 18 p3117 N68-30452 n confidence limits from p3263 N68-31072 sampling and switching me of fuel flow system (R-384) ethod for optimal control 21 p3674 N68-34497 Filtration of time (FTD-HT-67-292) 21 p3662 N68-34604 Collecting and a Phoebus 1B reactor [LA-3796-MS] active effluents from 21 p3727 N68-34621 ction meth m gas streams [TRANS-1008] 22 p3861 N68-35499 e for sampling dust and Evaluation of vac microbiological surfi [NASA-CR-97152] 23 p3999 N68-36749 Modeling time varying population for constructing ptimum sampling size to describe decision theory for-[SC-CR-67-2752] 23 p4021 N68-36811 Shearing stress effects on soldered joint strength and impling plan for visual inspection of defective joints [EPT. 40-56] 23 p4070 N68-37270 sampling plan for [REPT.-40-56] Probability theo dence intervals, a for physicists [BNL-12602] 24 p4274 N68-37477 npling for symmetric Stratified Mo 24 p4276 N68-38129 (TR-91 SAMPLING DEVICES U SAMPLERS SAN MARCO SATELLITE Electronic satellite insti on for San Marco 2 21 p3777 N68-34128 Aerodynamic problems with San Marco 2 satellite 21 p3618 N68-34191 21 p3779 N68-34254 Scientific and technical aspects of San Marco satel-21 p3779 N68-34331 nal control subsystem test of San Marco 2 satel-

21 p3780 N68-34415 Data reduction systems for San Marco 1 satellite 21 p3661 N68-34417 SANDS 08 p1209 N68-17712

ibility of sa

d deposition of dust

09 p1421 N68-18847

ock tests on glass, steel,

09 p1445 N68-19418

SANITATION

ly ground under dynamic load 08 p1252 N68-17718

Wind [SR-1] nd erosion in Mojave desert of California 10 p1520 N68-19827 Gravity and atm for small explosio [AFIT-TR-68-3] Tensile, pres

wing sand and dust theory for Mars yellow cloud [REPT.-1610-68-34] 23 p4165 N68-36111 measurements for sand-ice, quartz, and polycarbonate resin [NASA-CR-73230] 17 p2877 N68-28631 SANDWICH PLATES
U PLATES (STRUCTURAL MEMBERS) SANDWICH STRUCTURES Composite rolling of st [AMMRC-CR-66-02/5] AFOSR-67-1982] 01 p0145 N68-10919 Design and construction candwich hull model for us [NSRDC-2412] of web stiffened tita ter application 02 p0275 N68-11311 Elastic stability of cylin axial and lateral load [FPL-0173] 03 p0423 N68-12552 Recapitulation of results and vibration of hot and shells including sand [AFOSR-67-2368] ned in study of dynas us and layered plat 04 p0589 N68-13384 lating natural frequencies in free flexural vibration 08 p1248 N68-1750 Shell displacement, defents in sandwich type she 09 p1441 N68-18672 process for refractory Chemical vapor depos metal plating in fabricati niobium sandwiches for th (EUR-3743.E) nic applications 09 p1296 N68-18962 external pressure [AFOSR-67-2838] 10 p1603 N68-19700 Axisymmetric ben plates with light filler [FTD-HT-66-5289] lity of triple layer round 11 p1797 N68-21340 astic layer and sandwin ic integration of Lan 12 p1977 N68-22408 nd impact tests of six sandwich structures 15 p2568 N68-26113 synthetic foam core mat [TDCK-50343, 2] internal photoelec thin film sandwich at [AFAL-TR-67-347] orated a 18 p3046 N68-30230 ethod of determinability under com ary representations and conditions using difference theory 19 p3378 N68-31714 rsis of rota 20 p3599 N68-32258 Analytical procedure for di ions and stresses in web-sti inder external pressure 21 p3782 N68-33733 Static and dynamic elasticity, and viscous damping of laminated and sandwich plates, shells, and beams [NASA-CR-96738] 21 p3789 N68-34285 Buckling and free vibratio sandwich plates with large cu (FTD-HT-67-343) nalyses for rectangula 22 p3975 N68-35926 Survey of plastics tial applications of te (PLASTEC-34) ructions and poten-23 p4179 N68-36189 ns of motion f waves in s f ring subjects lying propagation of free ch ring and transient al impact loads 24 p4346 N68-37511

24 p4349 N68-37911

10 p1473 N68-20567

and sanitation requirements during pro-

ure scaling equa

16 p2651 N68-27104

SATELLITE ATTITUDE CONTROL s of single crystal supphires for whisker composites [AMMRC-CR-66-01/5] 02 p0221 N68-11269 09 p1350 N68-18303 g plane polarized light 09 p1409 N68-19106 Energy loss of prot ns in Be, Al, Si, lucite, say 09 p1410 N68-19194 is on electron param 15 p2412 N68-26110 ckel alloys to sap 16 p2678 N68-27319 effects on strength of nickel alloy-apphire rein [AMMRC-CR-46-01/7] Effect of a phire 19 p3297 N68-31318 NRL-6705 SARCOMA U CANCER SATAN (SENSOR)
U SENSORS
U TERRAIN ANALYSIS SATELLITE ATTITUDE CONTROL INASA-TM-X-630021 01 p0133 N68-10070 Early orbit and at prelaunch analysis for NASA-TM-X-63007 termination plan, and steorological satellite 01 p0133 N68-10106 peneral purpose digit TR-1001/2307-13/1 01 p0041 N68-10241 03 p0417 N68-12073

(NASA-CR-91532) 04 ±0534 N68-13515 Stability criteria for OAO coarse pointing mode [NASA-CR-73163] 04 p0379 N68-13763 avigation applications 07 p0996 N68-16377

or gravity-gradient stab equatorial orbits 07 p1086 N68-1676 and stabilization - co [ESRO-SP-16] 08 p1244 N68-17413 strol systems for satel Active and pe

is for ESRO large aselescope pointing con-or gyroscopes 08 p1199 N68-17415

ign for ESRO large so

08 p1199 N68-17417 ne satellite com

08 pl199 N68-17418 mploying contum on tung-NASA-TIGA-SZIE

bilizing inertially originally or 09 p1373 N68-19236 ntion electrosts

NASA-TN-D-4420] 10 p1586 N68-20187 Magnetic stabilization of E (WGLR/DGRR-PAPER-62)

SATELLITE ATTITUDE DISTURBANCE 10 p1601 N68-20491 de control system for Two-gyro semi-par earth pointing sats [RAE-TR-67078] 11 p1737 N68-21467 ter study of satellite at-integrating gyros as Analytical design and cortude control system us 11 p1738 N68-21715 (BMWF-FB-W-67-41) Design, development, fa delivery of electrothermal, titude control and four direc [NASA-CR-72362] fabrication, evaluation, and al, three axis, spacecraft at-action stationkeeping system stationkeeping system 12 p1962 N68-22586 es of vibrating momentum attitude control 13 p2045 N68-23608 Operational characteristichange device for satelli athematical analyses of euvering control for synch suboptimal attitude bronous earth pointing [NASA-CR-94673] 14 p2341 N68-24422 Digital and hybrid er computer programs for optimal control of sa [NASA-CR-94678] 14 p2341 N68-24423 Reaction wheel sys referenced altitude cor tem for coarse and fine star trol of stellar observatory satel-[RAE-TR-67056] 14 p2345 N68-24782 Component tests and system feel gas distribution system spacecraft attitude control [NASA-CR-94762] item assembly for hydrazine m of torque generator for 14 p2193 N68-25097 for use in attitude con-Horizon scanners e trol of stationary TV b [DLR-MITT.-67-21] 14 p2261 N68-25457 Gimbaled star trackers for satellite altitude control and guidance (NASA-TM-X-59724) 14 p2287 N68-25557 Digital attitude simulation mulating trajectory and atti computer program for ude motion of earth ortiting space 15 p2561 N68-26623 Circuit design of time-lag generator for use in seccraft magnetic damping systems 16 p2771 N68-27189 Quasi-optimal control technique for space vehicle at-titude, bounded acceleration rendezvous in free space, and aircraft landing problem (NASA-CR-1099) 16 p2636 N68-28307 Star field mapping tech

e for determining at-Estude of spin stabilization [NASA-TN-D-4637] 17 p2910 N68-28418 Temperature control, att sion, and solar cell perform [LRBA-29-64-EN] le control, data transmis-e for artificial satellites 17 p2975 N68-28548

Possible satellite att Knight rocket vehicle control system for Black 17 p2911 N68-28623

dy orbital eccentricity and satellite attitude stability 17 p2968 N68-28763 Equations of motion to study energy dissipation effects on sa Solar cell battery power system of a strate two and three axis gravity grad using magnetic and hysteresis damping [TG-978] m of satellite to demo

imping techniques 18 p3007 N68-30713 Gravity gradient satellite ra attitude control and guidance s [TR-0158/3307-01/-18] dially vibrating rotating 19 p3275 N68-31113

Magnetometers and solar a tors for rockets and satellites sors as attitude indica-19 p3276 N68-31199

Black Knight rocket vehicle inertial attitude 19 p3306 N68-31218

control system 19 p3306 N68-31220 Satellite attitude sene and control accuracy

20 p3594 N68-33175 al control of sa le acquis ition by

random search algorith [NASA-TM-X-6 [197] 21 p3673 N68-34394 serized simular pacocraft attitu rol systems analysis 22 p3850 N68-34813

(NASA-CR-97076) 22 p3963 N68-35850

olution vectors for periodic is in state time space exer near differential equa-[UTIAS-TN-127] 22 p3902 N68-35956 titude control system of stable [NASA-TM-X-1677] atform satellites 23 p4160 N68-36512

Star tables for satell [RAE-TR-68048] 23 p4172 N68-37113 Development hinto titude control subsys [NASA-CR-86107] n modifications for at-

23 p4178 N68-37394 Spacecraft control readers, ion thrustor con-- sterilizable inertial sen antenna pointing

23 p4099 N68-37403 Satellite attitude dete n by Kalman filtering 24 p4222 N68-37596 Design problems on gravity attit de stabilization of

24 p4302 N68-37807

SATELLITE ATTITUDE DISTURBANCE
U ATTITUDE STABILITY
U SPACECRAFT STABILITY SATELLITE-BORNE PHOTOGRAPHY

orting data for photographs taken by Lunar Orbiter 5 [NASA-CR-66517] 04 p0579 N68-13760 Applications technology related synoptic a format for United S flite cloud photography gical data in case histo-07 p1018 N68-16805

phic studies of earth 08 p1178 N68-17540 [NASA-CR-93287] Evaluating rangeland re-photography, line-scan imag-k-band radar imagery, and ources by multispectral ery, thermal infrared and spacecraft color photog-NASA-CR-931811 08 p1178 N68-17671 Mariner 4 electronic

P-37431 09 n1339 N68-18263 [NASA-TM-X-60095] 16 p2773 N68-27802 Objectives and in photographic experin [NASA-CR-61854] on for Mars orbital 16 p2768 N68-27873

Processing and di ATS I spin scan clos [NESC-44] ts using digitized 17 p2884 N68-28845 multispectral OGO-4 satellite 19 p3305 N68-32086

photometry in airglow | NASA-TM-X-632991

20 p3473 N68-33398

20 p3482 N68-33413 rne lasers and telescopes for satellite studies on heric properties and optical space communica-INASA-TM-X-597861 21 p3700 N68-34676 techniques evaluated

Spacecraft image pr for biomedical applicati [NASA-CR-96931] 22 p3874 N68-35067 Remote probing of cirrus clouds via satellite-born

[NASA-CR-96893] 22 p3903 N68-35145 Fog and low stratus cloud recognition on photo-raphs taken by Cosmos and ESSA satellites 23 p4093 N68-36424

SATELLITE-BORNE RADAR

Application of spacecraft borne side-looking radar naging systems and radar altimeters in oceanic and rrestrial studies [NASA-CR-89983] 01 p0056 N68-10284 for measuring reflection rfaces from unmanned Pulse-type radar instrum sefficients of planetary [NASA-CR-87661] 15 p2465 N68-25677 Spacocraft radar pre rendezvous and soft lan [NASA-TM-X-60473] future applications in 23 p4020 N68-36488

Signal processing in s radur altimeter model INASA-CR-97308] 24 p4291 N68-37734

ATELLITE COMMUNICATIONS
U SPACECRAFT COMMUNICATION SATELLITE COMMUNICATIONS SHIPS

01 p0032 N68-10894

dar multiple target tracking ters and algorithms 22 p3909 N68-35409 system using digital comp [FTD-MT-24-383-67] Technical feasil ntation for Satellite

Technical feasibility and implementation for Satellite Prediction And Display /SPAD/ device [NRL-6694] 24 p4224 N68-37726

SATELLITE CONFIGURATIONS

Attitude stability of spherical shaped satellite [REPT.-67SD285] 14 p2350 N68-24473 Satellite surface and particle interaction measure tents in upper atmosphere using paddlewheel satelliter

INASA-CR-963101 20 p3591 N68-33300 Calculation of average to lites due to environmental de [ESRO-TN-22/ESTEC/] erature errors of satel-ts in test chamber 23 p4041 N68-37005 Economic, political, and system and structural sign studies of earth resource satellite observation

23 p4177 N68-37117 spheric electron dens (NASA-CR-98034) 23 p4177 N68-37245

Drag of small body in wake of large satellite derived om density and momentum flux calculations for free [RM-426] 23 p4173 N68-37333

ATELLITE CONTROL

llite polar orbit, control Aeronomy experim analysis, and control s [NASA-CR-90219] 02 p0264 N68-11012

Flight evaluation of pulse code modulation s orbit of Nimbus C satellite [NASA-CR-91138] control, thermal, and 03 p0418 N68-12680 Sec. ments and sta-

05 p0735 N68-14086 de of ort A corrected by thrustor firing time control sys [NASA-TN-D-4519]

11 p1788 N68-21260 dal, and plan Electrostatic, res propulsion for satellii [NASA-CR-88064] 15 p2548 N68-26873

cinity of unstable collinear libration point [NASA-CR-95948] 19 p3364 N68-31418

Control of space veh [FTD-MT-24-369-67] rbit and landing 20 p3584 N68-32377

Conference on spacecraft with relative rotation between two structural members for attitude stabiliza-tion and control - theory and design of nutation dam-pers in multiple axes control system [TR-0158/3307-01/-16] 20 p3595 N68-33527

Computerized simulation of caual-spin spacecraft mo-

20 p3596 N68-33529 Floquet analysis of energy dissipation effects on dual-spin satellite attitude stability

20 p3596 N68-33530 Damper characteristics for minimal nutation damping time of dual-spin satellite

20 p3596 N68-33531

Dynamic analysis and design for ball-in-tube satel 20 p3596 N68-33534

etic torquing coil for spin control of dual spin

20 p3597 N68-33537 Control loop system for earth oriented payload expin from dual-spin satellite configuration 20 p3597 N68-33540

Nutating gyrostat systems abilization for dual-spin spacecraft 20 p3598 N68-33546

SATELLITE DESIGN

el for orbiting satellite structure 03 p0426 N68-12276

tests, and instrument packages for large at IESRO-TM/P/-69) utellites 04 p0582 N68-13281 communications, non of acientific

(NASA-SP-133) 05 p0745 N68-14965 na ray ra r and theoretical design of ESRO counis (ESRO-SP-23) 06 p0916 N68-15694

11 p1697 N68-21152 IMWF-FB-W-67-321

Significance of solar simulation in space summun-test chambers for satellite design parameters [7 p2868 N68-29004 Design of ESRO scientific sat 19 p3372 N68-31221 Ground stations, satellite equipment, and satellin design for navigation and air traffic control system consisting of two-orbit network with eight synchronous satellites in each orbit [NASA-CR-86052] 19 p3306 N68-31286 19 p3306 N68-31280 oposal to increase project Project manage group effectivene [ESRO-TM-115] 19 p3388 N68-31342 e concepts, and Nimbus satellite systems design [NASA-TM-X-63313] 20 p3599 N68-33593 Synopsis of full de tronomical Satellite (ESRO-SP-5) ly of European Large As-23 p4177 N68-37147 SATELLITE DRAG Solar radiation and magnetic effects on upper at-ospheric neutral temperatures derived from satellite (NASA-TM-X-63014) 01 p0130 N68-10358

Rotational motion of sp of retarding aerodynamic 06 p0763 N68-15615 ical transformations, variation of parameters i intermediate orbit used to develop satellite Ca

rical satellite under action

10 p1592 N68-20007 Model calculations and satellite drag data used to determine physical behavior of upper atmosphere [BMWF-FB-W-68-01] 13 p2064 N68-24093

Drag of small body in wake of large satellite derived from density and momentum flux calculations for free molecular flow at high speed ratio [RM-426] 23 p4173 N68-37333 SATELLITE GROUND SUPPORT

Installation, and characteristics of constelling ground radio station (TIL/T-5750) 05 p0631 N68-14783 SATELLITE GROUND TRACKS

Equations derived for analyzing ground track of sunchronous satellite and applied to Earth Resource INASA-TM-X-630661 04 p0577 N68-13557 SATELLITE GUIDANCE

Two body problem for satellite guidance, flight echanics, and trajectory optimization analyses mechanics, and tra [NASA-CR-1002] 05 p0735 N68-14089 Equipment, instrumentation, design, launch vehicles, and guida [NASA-SP-133] 05 p0745 N68-14965

Guidance, flight mechanics, and trajectory optimiza-[NASA-CR-1004] 11 p1785 N68-21685

Design, mission, flight operations, experiment data, and subsystem performances for Lunar Orbites 4 ex-[NASA-CR-1092] 17 p2977 N68-28997

mation of variational m control problems, ethods for solution of tical data sources for it determination, and 23 p4099 N68-37402

Guidance and control research - Josephaon junction memory elements, frequency response of thin film ther-mal detectors, gallium selenide barrier gate, and photoconductor metal contacts 23 p4099 N68-37404

SATELLITE INSTRUMENTS

Alouette I satellite ion equipment design and design, and environment [DRTE-1159] 01 p0140 N68-10704 uring energetic charged particles in near earth space (ASE-1435) 02 p0262 N68-11202 Equipment, instrumentation, communications, design, launch vehicles, and guidance of scientific satellites (NASA-SP-133) 05 p0745 N68-14965 Feasibility study of recommendations for earth satelite optical communications experiments and related astronomy and scientific instrumentation [NASA-CR-61441] 05 p0745 N68-14978 Development of large capacity ferrite core for telemetry data storage in satellites (BMWF-FB-W-67-(0)) 06 p0811 N68-15679

ters for rem heric probing in in frared from satellites [NASA-TM-X-63188] 12 p1870 N68-22924 echniques for measurement of sity and related parameters 13 p2057 N68-23225 Rocket and satellite tech ionospheric electron density [UU-67-9] Calcul on of occultat n of satellite telescope by apherical celestial body [ESRO-SN-73/ESDAC/] 13 p2153 N68-24176 High voltage effects in satelli -borne spectrometers 15 p2443 N68-26881 Velocity axis response of ion mass spectrometer or herical satellite calculated based on Explorer 32 data 17 p2882 N68-28577 INASA-CR-954071 Medium resolution infrared spectra obtained by satellite used to estimate relative humidity profiles [NASA-TM-X-63256] 17 p2907 N68-28589 Instrument sets, signal conditioners, and field sup-port and integration of instrumentation for OVI-13 [ASE-1929] 19 p3277 N68-31467 Computer methods for calculating particle trajectories and current collected by circular planar Langmui probe mounted in satellite skim [NASA-CR-96135] 19 p3343 N88-3184: 19 p3343 N68-31845 Lectures at ESRO su tion for telemetry, r school on instrumenta-lite localization, and 19 p3282 N68-32113 setry, localization, and instrumentation 19 p3282 N68-32114 Characteristics of frequency m odulation telemetry 19 p3245 N68-32115

Instrumentation data for low energy solar cosmic ray measurements using OGO-F satellite [NASA-CR-96312] 20 p3582 N68-33161 20 p3582 N68-33161

ctronic satellite instrumentation for San Marco 2 21 p3777 N68-34128

SATELLITE LAUNCHING U SPACECRAFT LAUNCHING SATELLITE LIFETIME

Analytical method artificial satellite lifetime deter-INASA-TN-D-42811 02 p0268 N68-11754

Formulas for determining satellite lifetime based on orbits with high and low eccentricities 08 p1237 N68-17375 tes in Molniya se-

ries in large-eccent [RAE-TR-67189] 10 p1597 N68-20436 Requirements and costs for long-life militation of reliability specification to Initial Defense Communication Satellite Progra

/IDCSP/ [TR-0158/3525-15/-1]

15 p2564 N68-26726 OAO success evaluation criteria using satellite obser-ation and orbit lifetime

Drag of small body in wake of large satellite derived from density and momentum flux calculations for free molecular flow at high speed ratio [RM-426]

SATELLITE MANEUVERS SATELLITE NAVIGATION SYSTEMS

System design concepts for spaceborne navigation aids for surface and air traffic control (P-323) 02 p0235 N68-11 02 p0235 N68-11341 Feasibility of satellite navigation for ocean going [TN-200] 06 p0871 N68-15665 ns and orbital elements for etary spacecraft 06 p0871 N68-15773 Space navigational system arthur satellites and interp [NASA-CR-92568] Supersonic aircraft posi-navigation satellite system [NASA-CR-92984] m fixing based on Navy 07 p1022 N68-16748 sated for use by air-10 p1553 N68-20033 Algorithms for active variant of satellite angle distance navigation system [JPRS-46169] 20 p3527 N68-32921

regation satellite systems [JPRS-46281] 0 p3529 N68-33505 es - bibliography 23 p4177 N68-37056

of caps Data links for air tr lites of NAVSTAR sys [NASA-CR-86112] 24 p4291 N68-38306 SATELLITE NETWORKS

01 p0087 N68-108

terference between multiple a (NASA-TM-X-63050) 04 p0475 N68-12936 Method to define minimu thin bounded region of pl several discrete freques [NASA-CR-61439] 06 p0797 N68-15341

Nets, network control, cal communication satelli [P-360] om access for tacti-11 pi661 N68-21315

Adjustment of satellite triss [NASA-CR-94140] 11 p1786 N68-21710 12 p1867 N68-22261

for voice and telemetry secoffight network and DAC-361711 16 p2625 N68-27904

ation equipment, and lite mission 17 p2975 N68-28463

[NASA-CR-86050] 19 p3306 N68-31278

re dats by global antel atmospheric composi-Collecting lower th tion, density, temper [NASA-CR-8564]). 21 #3684 N68-33666 satellite program 21 p3779 N68-34240

SATELLITE OBSERVATION

as of very low frequency magcharged particles [NASA-CR-89967] 01 p0130 N68-10067

Radio tractron density: [RSD-S34] from Beacon Expl

[AD-659174] 01 p0061 N68-10843 -atmospheric e es on rockets ar

[NASA-TT-F-11233] DI 20066 N68-10986 magnetic intensities km altitude (NASA-CR-905221

02 p0207 N68-11591 Factors and procedures influencing statistical s lity of agricultural data from earth orbiting se

[NASA-CR-90211] 02 p0293 N68-11810 lustion for 1100

1966 INASA-TM-X-60719] 03 p0413 N68-12044

Pacific Ocean design Meteorological satellite on, and cloud formation (SMRP-RP-55) 04 p0532 N68-12934

tellite tracking data for May 1967 - tables 04 p0475 NSS-12988

Q5 p0653 N68-146 Rocket and satellite is eceived at World Da anuary and June 1967 and observation data /WDC-A/ between 06 p0915 N68-150

orne systems for earth rase orne and spacebo [P-3753] Electron data from Applications lize-I omnidirectional spectrometer [TR-0158/3260-20/-4]

06 a0905 N68-15175

01 p0133 N68-10029

01 p0133 N68-10070

01 p0134 N68-10278

01 p0135 N68-10357

09 p1426 N68-19353

10 p1593 N68-20173

determination plan, and meteorological satellite 01 p0133 N68-10106

SATELLITE ORBIT CALCULATION **ORBIT CALCULATION**

NT STATIONARY ORBITS
NT TWENTY-FOUR HOUR ORBITS

Gravity gradients on earth surface deduced from stellite orbits

Prelaunch early orbit and attitude determinations, and prelaunch analysis for Tiros Operational Satellite B

Long period variations in eccentricity and periges r Nimbus 2 explained in terms of earth zonal har-onic coefficents, plus first order earth oblateness per-

SATELLITE ORBITS

[NASA-CR-89973]

[NASA-TM-X-63002]

[NASA-CR-90037]

turbations [NASA-TM-X-63011]

Early orbit and attitude prelaunch analysis for TOS C [NASA-TM-X-63007]

NT PARKING ORBITS NT POLAR ORBITS

SATELLITE ORBIT CALCULATION Tabulated data for satellite observation during April 06 p0797 N68-15186 Visual observation of Samos 2 satellite to determine (RAE-TR-67082) First decade of satellite tracking at Royal Observato-ry, Edinburgh [ROE-STS-64] 06 p0801 N68-15837 vations by Vela satellites 07 p1076 N68-16503 Solar wind ob [LA-DC-8944] Optical satellite observations during Oct. 1967 [ROE-STS-66] 07 p1086 N68-16553 Mathematical model of Martian atmosphere and sur-face characteristics based on Mariner 4 and earth-based thermal, spectrographic, photographic, and radar data [NASA-TM-X-53668] 07 p1083 N68-17085 Stratospheric temperature distribution data based on Tiros 7 radiometer data [NASA-CR-92554] 08 p1196 N68-17551 Tiros 7 observations of Antarctic stratospheric arming in 1963 08 p1196 N68-17553 Soviet research on bininstrumentation, medical elec-onics, satellite observations, and aircraft and engine 08 p1262 N68-17681 Soviet-bloc International Observations program to letermine sudden atmospheric density changes based in orbital element observations 08 pl169 N68-17685 Subroutines used in computer programs for least quares adjustment of satellite observations for simultaneous directions or ranges [NASA-CR-93424] 09 p1308 N68-18724 Least squares adjustment of satellite observations for multaneous directions or ranges NASA-CR-93425] 09 p1333 N68-18763 imultaneous directs [NASA-CR-93425] Satellite measurements of lunar soft X radiation, and Roentgen counic background [NASA-CR-93658] 09 p1417 N68-19397 Ground truth requirements for remote sensing of oceanographic features [AD-663438] 10 p1522 N68-19951 Meteorological satellite photographic measurements and theoretical calculations of mountain lee waves and moisture sources of subtropical jet stream clouds in Middle East (Irael/ IPB-177066) 10 p1552 N68-20234 Earlyburn cinetheodolite observations of Cosmos 44 satellite - January 1965 to March 1966 [ROE-STS-67] 10 nl 10 p1600 N68-20271 Earlyburn cinetheodolite observations of Transit 1B antellite - October 1964 to March 1966 [ROE-\$T\$-69] 10 p1600 N68-20306 Portable, electronic, large scale nonimaging polarimeter/photometer for terrestrial, airborne, and satellite remote sensing [RM-410] 11 p1696 N68-20235 Determining earth gravitational potential up to quadrupole approximation by satellite observations [NASA-CR-94139] 11 p1693 N68-21616 Comparison of simultaneous magnetic field measure-sents by Pioneer 7, Explorer 28, and Explorer 33 satel-[NASA-TM-X-63166] 11 p1785 N68-21650 Predictions of tropical cyclone development based in Nimbus 2 high resolution infrared radiometer measurements, and ESSA 3 photographic observations of 1966 typhoon [NASA-TM-X-63197] 13 p2098 N68-23592 ns of solar particles inside Injun satellite observa magnetosphere [NASA-CR-89213] 15 p2548 N68-25710 Cumulus cloud and fog baservations using Nimbus nk spectral reflectance ob-satellites and infrared radiometers [NASA-TN-D-4552] 15 p2466 N68-25862 Rocket and satellite (NASA-CR-88066)

Geometric relations between satellites and sun with probability assumptions for intersatellite recognition [RM-4866-PR] 23 p4176 N68-36546 ons of auroral zones 16 p2751 N68-26966 injun 3 satellite spectrophotoise emissions during magni ent of relationship hetween v nergetic electron fluxes Geometric optical satellite tracking network [AD-666238] 16 p2650 N68-26998 Satellite photography considered for momormy our-face properties of dry lakebeds /playas/ 16 p2633 N68-27357 energetic electron flu [NASA-CR-97313] OV1-5 satellite radiometric data - Mie scattering, ab-orption band model, matrix elements for carbon diox-le vibrations, and carbon dioxide emissivity ervation of noctifucent clouds from earth surface and from spacecraft [NASA-TT-F-11519]

[NRL-6660] Joint Satellite Studies Gro surements of height of ionospi [AFCRL-68-0365] Photographic recording stati cial earth satellite observations [DLR-FB-68-45] otpelectron flux m sphere using retarding pote [NASA-TM-X-63358] Severe local storm characteristics observed over cen-tral and eastern United States by meteorological satel-

(PSI-68-14)

16 p2701 N68-28099

Cinetheodolite satellite observations made at Earlyburn during Apr. 1965 to Mar. 1966 - tables /data/ [ROE-8TS-71] 17 p2849 N68-28657

Alouette I satellite observations of resonar phenomena at very high frequencies and high freque cies, and effects of ionospheric plasma on spa 17 p2851 N68-29089 ents of large irregularities and ic electron content, and method horizontal gradient in elecvariations in ionospheric ele for calculating ionospheric 17 p2879 N68-29092 Relationship between scintillations and spread-F detected by topside sounder Alouette I satellite 17 p2879 N68-29094 tellite observation techniques and data processing ods at optical tracking station in Maivern, En-Satellite observation techn [NASA-CR-95719] 17 p2856 N68-29554 Random atmospheric refraction effects on optical satellite observations [NASA-CR-95809] 18 p3066 N68-29706 Chromosphere spicular structure and feasibility of observations using large astronomical satellite [REPT.-50] 18 p3160 N68-30733 Sensing oceanographic condition from aircraft and project plans for remote sensing from satellites [NOO-IR-68-18] 18 p3070 N68-30759 Electrostatic analysis of electron diffusion data from Hitch-Hiker 1 satellite using computer simulated radia-[ASE-1887] observed by satelliter [NASA-CR-95954] illite observation [NASA-TT-F-11750] Three dimensional system of rectangular coordinates for reduction of synchronous satellite observations 19 p3368 N68-32003 ximation of orbital prope related to atmospheric tide dynamics [REPT.-08203-2-T] 20 r Satellite surface and particle interaction measure-ments in upper atmosphere using paddlewheel satellites [NASA-CR-96310]

Method for improving mean orbital elements for VINTI spheroidal satellite theory without use of obser-vational data vational data [NASA-TM-X-63028] 02 p0265 N68-11280 thod applied to libra-horbiting satellite 03 p0413 N68-12013 19 p3372 N68-31074 Extremely low and very low frequency radio noises beeved by satellites in ionosphere NASA-CR-93954] 19 p3271 N68-31414 Computer prediction of netv Navigation and traffic control of ships and aircraft rough use of satellite observations ork radio frequency interference between multiple sa [NASA-TM-X-63050] 04 p0475 N68-12936 19 p3306 N68-31502 Lindstedt method application to expand analytically periodic orbit natural families of first kind in restricted problem of three bodies D1-82-0651] 04 p0573 N68-13035 nchronous photographic observations of Echo 1 ite for calculating geocentric radius vectors of ar-Thor Delta launch vehicle configurations, and per-formance in launching communication, geodetic, geophysical, and n [ELDO-TM-106] 19 p3369 N68-32008 05 p0742 N68-14016 Damping systems for gravity stabilized orbiting satelerties from multiple te distance measurements by tracking stations 19 p3369 N68-32011 [BMWF-FB-W-67-13] 06 p0911 N68-15680 Computer program for numerical integration of equations of motion for artificial earth satellite orbits [NASA-TM-X-63085] 07 p0971 N68-17080 Satellite observations of cloud cover and brightness 20 p3522 N68-32757 Iterative solution of eq mtellite orbit with earth sha [RAE-LIB-TRANS-1253] 20 p3591 N68-33300 07 p1083 N68-17147 OAO success evaluation criteria using satellite obser-tion and orbit lifetime Resonant satellite orbits for determining geopoten-21 p3770 N68-34266 [NASA-CR-93245] 08 p1238 N68-17698 Interplanetary magnetic field effect on cosmic ray Air drag effects on satellite orbits with diurnal varia-(RAE-TR-67092, PT. 6) AFCRL-68-0219] 21 p3762 N68-34638 Computerized simulation and stellite observation field of view n and visual projection of 08 p1243 N68-18244 Orbit calculations for size and shape of orbit, equired velocity at perigee and apogee, and gravita-onal effects on satellite orbit 21 p3670 N68-34651 required velocity at pe tional effects on satellit [NASA-TM-X-63126] Satellite radio noise measurements during solar radio 09 p1425 N68-19242 [NASA-TM-X-60475] 21 p3763 N68-34682 Effect of earth occultation on tions from earth orbiting satellite [NASA-CR-93474] n on astronomical observaes Group spaced receiver mea-ionospheric irregularities 22 p3870 N68-35490

ion in Germany for artifi-

22 p3877 N68-35538

ents in topside iono-

analyzers 22 p3957 N68-35999

23 p4094 N68-36487

ographic analysis of VLF etic storms, and assess-variations in emission and

24 p4339 N68-37725

de emissivity 24 p4253 N68-38122

World Data Center C tables on satellite observations and rocket launchings - Jan. 1 through Jun. 30, 1968 24 p4342 N68-38126

Satellite resonance with los tude-dependent gravity [RAE-TR-67172] 10 p1598 N68-20485 Numerical analysis of upper atmospheric air density variations based on satellite 1966-101G orbit changes [RAE-TR-67171] 10 p1525 N68-20500 Minitrack measurements etermined orbit for calibrati compared to optically ng Minitrack antenna ar-[NASA-TM-X-63161] 11 p1663 N68-21577 equations for time rate s for Apollo project Numerical integration of echange of lunar satellite orbits for [NASA-CR-62036] 11 p1785 N68-21702 e geopotential from or-Satellite theory to determ bital motion of artificial eart [NASA-CR-94126] 11 p1695 N68-21777 tion of orbital ele nents of a satellite from 12 p1964 N68-21936

Visual observations to determine orbital elements of osmos 97 satellite during lifetime

Lifetime estimates for three satellites in Molniya series in large-eccentricity orbits.

[RAE-TR-67189] 10 p1597 N68-20436

RAE-TR-67188)

19 n3362 N64-32001

21 p3771 N68-34436

cal spin effects on

ie under a

04 p0576 N68-13409

06 p0763 N68-15615

or solar cell configurations insulated from spinning

07 p0941 N68-17884

11 p1782 N68-21182 tellites

11 p1705 N69-21201

15 p2577 N68-3

16 p2754 N68-27029

20 p3996 N68-33528

rmine motion and sta-d system in orbit 21 p3774 N68-34799

23 p4165 N68-36141

03 p0321 N68-12078

07 p0967 N68-17042

itellites 14 p2261 N68-25457

17 p2883 NGS-284

18 p3079 N68-30820

Ranger, Mariner, and

19 p3280 N68-31764

20 p3438 N68-33179

24 p4280 N68-37869

data for Baker-Num

04 ±0571 N68-12888

04 u0572 N68-12988

04 p0490 PMG-13400

1967 - tables 04 p0475 N66-129

te observation pho

r use in setting

of of dust-

Least squares method applied to differential cor-rection procedure based on observed and computed positions for orbit determination [ESRO-SR-7/ESDAC/] 13 p2152 N68-24006 d as boundary value r series expansion and Orbit determination roblem and solved by cursive functions WF-FB-W-68-081 13 p2153 N68-24119 about axially-symmetric p [ESRO-SN-74/ESDAC/] 13 p2153 N68-24133 Orbit determination [BMWF-FB-W-68-11] n satellite geodesy 13 p2065 N68-24191 Electron concentraturbances, satelli ic radiation, magnetic and other upper at-efforts reported in 14 p2246 N68-24535 Computer program for ca on radiation hazards for a iting proton and elec-ite orbit in Van Allen belt [BMWF-FB-W-68-18] 14 p2339 N68-24808 Optimization of weigh ostatic propulsion syst exhaust velocity of elec-or stabilizing satellite or DLR-FB-67-87] 14 p2338 N68-25302 Lie series application celerators, satellite orb [NASA-CR-1046] timization 15 p2491 N68-25841 and error analysis 16 p2650 N68-26970 Abstracts of U.S.S.R. dies based on satellite or [ATD-P-68-95-101-2] ere de 16 p2656 N68-27809 ence of plana and Keplerian force f (NASA-TN-D-4622) 16 p2770 N68-28113 Orbit determin ry artificial satellites and planetary gravit [NASA-CR-95575] 17 p2969 N68-28838 Correlation pattern be Range Rate /GRARR/ polarization and IMP orbit [NASA-TM-X-63265] ard Range And 17 p2850 N68-29077 Satellite orbit ca ethod using boundary value problems and integral [RAE-LIB-TRANS-1279] 17 p2973 N68-29467 cer 6 /1966-51B/ from Minitrack observat [RAE-TR-67283] 18 p3161 N68-29633 Air density at heights near 190 km from Secor 6 orbit PAF.TP-672851 18 p3067 N68-29849 Catalog of sate December 1963 [NASA-CR-95872] ons for October to 18 p3164 N68-30147 Tabulated data on SAO m reduced observations [NASA-CR-95866] ents derived from 18 p3167 N68-30687 satellites having long as symmetric double Dynamic characteriastic members by a (NASA-TN-D-4576) 19 p3372 N68-31978 ervations and or atellite - compute ulations for artificial tellite position and or-ed tracking measure-19 p3368 N68-32000 al observations for Echo I satellite synchro-curate orbit determinatio 19 p3369 N68-32007 ric density from vations 19 p3274 N68-32009 on program for pre-19 p3369 N68-32012 on about triaxially ellipsoidal planet [NASA-CR-961451 19 p3369 N68-32024 ary value problem for satellite orbit determin [NASA-TT-F-11908] 20 m3589 N68-33131

Technique for long arc fi

Effects of elastic deformation stability requirements of or

cs of E3RO 2 satellits 21 p3777 N68-34097

ons and gravity gradient

22 p3964 N68-34955

gitudinal gravity field fo [NASA-TM-X-63274]

[NASA-TM-X-63308]

g as applied to IMP 3 tion of moon (NASA-CR-92125) 20 p3590 N68-33214 Analysis of satellite pert gravitation and earth triaxia [DLR-FB-68-13]

High order geopote earth satellites in 2-day [NASA-TM-X-63356] surable orbits 22 p3960 N68-35587 ry values of satellite [NASA-TM-X-63328] (BMWF-FB-W-68-55) 22 m3962 N68-35748 U ORBITAL RENDEZVOUS Geometric relations satellites and sue with SATELLITE ROTATION RM-4866-PR 23 p4176 N68-36546 Orbit of Com first cycle of argumproton type sat JPRS-43822) PAE-TR-68023] 23 p4171 N68-36874 Motion of satellite ab formulated in local invaria [ESRO-SN-75/ESDAC/] ially-symmetric planet 23 p4176 N68-36939 Errors in position in ESRO 1 and ESRO 2 satellite or-ts due to tracking measurement errors ESRO-TM-18/ESTEC/| 23 p4022 N68-37132 Equilibrium temper ins bonded to, but the NASA-CR-73181] te orbit design cal-Spin axis for spin unge rate data NASA-TN-D-4483) 24 p4302 N68-37808 s on Explorer 33, 34, Solar ecliptic plane; and 35 satellite orbits [NASA-TM-X-63370] Mechanically despe pin stabilized commun BMWF-FB-W-47-33) 24 p4341 N68-37820 SATELLITE ORIENTATION DACWF-FB-W-67-34 rocket control eleme ht trajectories 03 p0330 N68-12003 NASA-TN-D-46141 07 p1021 N68-16387 ile attitude using data matic data reduction 07 p0972 N68-17195 approach (ORA-68-0003) from photographs ber [WRE-TN-TRD-23] Active and pa 08 p1199 N68-17414 ts for ESRO large as-elescope pointing con-or syroscopes Of p1199 N68-17415 ility of minning call NASA-CR-966281 for numerical solution 08 pl199 N68-17418 SATELLITE TELEV esign of communication tellines for Brazil, India. satellite 10 p1600 N68-20437 synchronous tele [NT-10/68/EN] ilized orients control system desig [NASA-CR-86071] 17 p2977 N68-29274 high vacuum orbits orientation relative t (NASA-TM-X-52385) [DVL-746] 22 n3853 N68-35647 Active magnetic attitude bilined earth satellites [RAE-LIB-TRANS-1311] le control system for spin-sta-(DLR-MITT.-67-21) 24 p4345 N68-37993 [JPRS-45754] SATELLITE PERTURBATION Perturbations in motion of three fictitious moon TG-9631 satellites [NASA-CR-92536] 06 p0907 N68-15136 Resonant satellite orbits used t variations in gravity field of earth [NASA-TM-X-63084] termine longitude 07 p1078 N68-16323 nunication satellite mis neral perti [NIC-TRANS-2492] 09 p1418 N68-18435 Remote artificial e moon gravitational fie [NASA-CR-93436] ous 2 and ESSA 3 09 p1419 N68-18710 graphs of typhoon Ma [NASA-TN-D-4757] perbations for artificial dereal period 09 p1427 N68-19355 SATELLITE TRACKIN natellite with twenty-for Light curves and exposure americ obtained during astr and satellite trackin [NASA-CR-89952] dinate systems [RMWF-FB-W-67-37] 11 p1782 N68-21213 mbined solution es of gravity fro egree longitude har-nd twenty-four hou Large Doppler re lunar orbiter trackin [NASA-CR-91374] INASA-TM-X-631691 12 p1964 N68-21920

13 m2152 N68-24085

14 p2345 N68-24799

17 p2971 N68-29179

his with earth lon-

induced by lunar

[NASA-CR-91405]

ith periods of 630 km O-TM/F/-851

SI

ZZZZZZZZ

NN

NT

ven (ES

(ES

tron

(ES

Si

E

(ESI

for it

(ESI

denig satel [NA:

[NAS

W

PE

Satellite tracking data for 31 August 1967, tables [NASA-TM-X-60794] 05 p0743 N68-14679 Geodetic position determination using method of continuous traces [AFCRL-67-0558] 06 p0833 N68-15340 Cinetheodolite tracking of Cosmos 54 [ROE-ST3-65] 06 p0798 N68-15418 First docade of satellite tracking at Royal Observatory, Edinburgh [ROE-STS-64] 06 p0801 N68-15837

Laser tracking data from BE-C and Geor-A satellites, and analytical and statistical techniques employed [NASA-CR-93411] 09 pt 349 N68-18507 Optical satellite observation in Nov. 1967 at Ear-

Range and range rate measurements used in orbit datermination program PROP [RAE-TR-67199] 10 p1595 N68-20367

Near zenith satellite tracking [DLR-MITT.-68-02] 11 p1661 N68-21198 Gravity model comp ing Geos-1 long arc or-[NASA-TM-X-63158] 11 p1693 N68-21594 Large time-bandwidth per tion for millimeter-wave sate [TR-0158/3230-46/-3]

11 p1664 N68-21599 Design criteria for position fixing equipment, effect atmospheric turbulence on antenna radiation pat-rns, and potential faults in parabolic tracking anten-

(BMWF-FB-W-67-29) 11 p1786 N68-21727 Methods of solving a erical error probability in predicting satellite por (MDC-TR-48-12) 13 p2025 N68-23137

Automatic tracking by co-ignal captured by four sour-lane of parabolic reflector omparing amplitudes of rees positioned in focal-14 p2220 N68-24358

Coefficients defining lunar gravitational field derived from Lunar Orbiter tracking data [NASA-TM-X-60230] 15 p2560 N68-26245

Satellite positions determined simultaneously by mera and radar systems for calibration, and triangu-tion adjustment of camera sites 15 p2429 N68-26864

Tracking errors caused by radio frequency inter-ference to Ministrack system, and analysis of phase locked loop with interference [NASA-CR-95227] 16 p2623 N68-27646

Lunar orbiter tracking data used for determination of gravitational field and other muon properties [NASA-TM-X-60123] 16 p2766 N68-27652

June 1965 tracking data for Soviet artificial satellites in Polyot, Elektron, Cosmos, and Molniya series Molniya series 17 p2966 N68-28493

fay 1965 tracking data for Soviet artificial satellites casmos, Polyot, and Elektron series 17 p2966 N68-28527

French national satellite tracking and control net-17 p2867 N68-28528

May 1965 tracking data for Soviet artificial satellites in Cosmos, Polyot, and Elektron series 17 p2966 N68-28569

February and March 1965 tracking data for Soviet tifical earth satellites in Cosmos, Polyot, Elektron, and Voskhod series

17 p2967 N68-28593

April 1965 tracking data for Soviet artificial satellites Cosmos, Polyot, and Elektron series 17 p2967 N68-28594

Astrometric and photogrammetric plate reduction techniques evaluated for error reduction in photographic satellite tracking [NASA-CR-95379] 17 p2883 N68-28630 17 p2883 N68-28630

Feburary and March 1967 tracking data for Soviet tificial earth satellites in Cosmos, Polyot, Elektron, ul Voskhod series

17 p2967 N68-28645

July 1965 tracking data for Soviet artificial satellites in Polyot, Elektron, Cosmos, and Proton series 17 p2968 N68-28674 ters with high accuracy

suitable for sate (ROE-STS-54) 17 p2883 N68-28757

Introductory work on orbital calculation at Earryburn satellite tracking station (ROE-STS-51) 17 p2968 N68-28767

August 1965 tracking data for Soviet artificial satel-ites in Polyot, Elektron, and Cosmos series 17 p2969 N68-28839

ring effects of ionospheric irregularities and data acquisition from trans-auroral

17 p2879 N68-29096 Capability of ground ba structural mass of orbiting as [ESD-TR-68-157, V. 1] d based sensors to determine ing artificial satellite

17 p2854 N68-29204 nts at 35 GHz to simulate tracking of small is [BRL-MR-1912] 17 p2881 N68-29426

August 1965 tracking data for Soviet artificial satel-es in Polyot, Elektron, and Cosmos series mos series 17 p2973 N68-29442

September 1965 tracking data for Soviet artificial satellites in Polyot, Elektron, Cosmos, and Proton se-

17 p2973 N68-29443 Cosmos satellite launchings, advanced U.S.S.R. ice program, Soviet bloc satellite tracking, and per atmosphere studies

17 p2882 N68-29455 Satellite tracking reports reveal new earth satellites in resonant orbits [NASA-TM-X-63263] 17 p2973 N68-29469 Photometric tracking data on Soviet Cosmos series

Stopwatch observations of sai Ashley, and Italy ground stations [ROE-STS-74] ns of satellites at Mountcaste,

18 p3168 N68-29640 ellites, January 1968 18 p3168 N68-29641 Stopwatch observation [ROE-STS-73]

Tabulated data on stopwatch observations during 18 p3169 N68-29656 Wind tunnel tests of scale model of Marconi 90 ft fully steerable satellite tracker [NPL-AERO-1222] 18 p2995 N68-29925

cecraft orbits and ground stations for communi-and scientific satellites in European space pro-

19 p3305 N68-31044 erometry, orbital computations, and data

19 p3236 N68-31122 Stopwatch observations of satellites at Mouncastle, Ashley, Italy, and Edinburgh ground stations during March 1968 [ROE-575-75] 19 p3237 NAS-31220

ervations and orbit calculations for artificial atellite - computation of satellite position and or-sechanics from synchronized tracking measure-

19 p3368 N68-32000 Simultaneity circle model for space triangulation and detic localization of satellites from nonsimultane-

19 p3368 N68-32004 Reference ellipsoid system for determining coor-nates of earth mass center from satellite position

19 p3274 N68-32005 Gravimetric method for determining geocentric continues of satellite tracking stations

19 p3274 N68-32006 Lectures at ESRO summer school on instrument on for telemetry, satellite localization, a

[ESRO-SP-11] 19 p3282 N68-32113 Satellite telemetry, localization, and instrumentation

19 p3282 N68-32114 Optical devices for cislunar ag-reflecting telescopes for space astro-laser tracking of passive satellites r space experiment astronomy, and pulse

20 p3590 N68-33178 Soviet near-space optical and radio satellite tracking [ATD-68-119-101-4] 22 p3853 N68-35396

Geodetic satellite photography, tracking, orbit calculations, and related studies for 1967
[NASA-CR-97155] 23 p4053 N68-36174

Photography of Geos 1 flashes with Baker-Nunn and K-30 geodetic cameras

23 p4054 N68-36181 Computer program LASIM for spacecraft tracking d control in laser optical communication systems (ASA-CR-61976) 23 p4071 N68-36227 [NASA-CR-61976]

Mathematical models for performance analyses on ound satellite tracking systems determining mass of Orbiting body (ESD-TR-66-157, V. 2) 23 p4061 N68-36393

Linear parameter combinations for lunar orbit deter-

[NASA-CR-73265] 23 p4168 N68-36625 Errors in position in ESRO 1 and ESRO 2 satellite orbits due to tracking measurement errors
[ESRO-TM-18/ESTEC/] 23 p4022 N68-37132

ment errors 23 p4022 N68-37132 Pulsed ruby laser satellite tracking system [NASA-CR-97355] 24 p4265 N68-38160 SATELLITE TRACKING AND DATA ACQ

STADAN SATELLITE TRACKING NET-

SATELLITE TRANSMISSION

Satellite-te-satellite HF radio propagateristics in ionospheric environment [AFCRL-67-0374] 03 p0319 03 p0319 N68-11973 in fixing by range

satellites 04 p0534 N68-13132

Design, and development of satellite communi-ons ground terminals on moving vehicle - vocod or speech compression, signal modulation, and au-(ESD-TR-67-182) 04 p0476 N68-13209

Design, and developm terminal for space commi nt of transportable ground sication technology on technology 04 p0476 N68-13210

ations terminal for 04 p0477 N68-13211

04 p0477 N68-13212 Digital compu ster control for satellite communica-

04 p0477 N68-13213 ue implementation in I terminal 04 p0477 N68-13214

Channel vocoder as speech processor for satellite 04 p0477 N68-13215

ns of Explorer 29 trans-[R67EMII26] 12 p1865 N68-22009

erference between satellite and radio repeater: (REPT.-6097) 13 p2028 N68-23884

de of radio electric field of satellite at Amplitude of ratio es orizon of receiving station 17 p2851 N68-29088

Satellite transmission of integrated astronomical nage by image storage tube on response to command Satellite tran signal [LNF-68/34] 19 p3282 N68-32125

Design, manufacture, and testing of Nimbus B PCM lemetry subsystem, bench test equipment, and NASA-CR-96892] 22 p3833 N68-35147

Processing of pulse code modulated satellite telemetry data [DLR-FB-68-54] 24 p4226 N68-37987 SATELLITES

ACTIVE SATELLITES
ALOUETTE SATELLITES
ALOUETTE I SATELLITE
A050

APOLLO SPACECRAFT
APPLICATIONS TECHNOLOGY SATEL-

APPLICATIONS TECHNOLOGY LITES
ARIEL SATELLITES
ARIEL I SATELLITE
ARTIFICIAL SATELLITES
BEACON EXPLORER A
BEACON SATELLITES
BIOSATELLITES
COMMUNICATION SATELLITES
COSMOS SATELLITES
COSMOS SATELLITES

EARLY BIRD SATELLITES
EARTH SATELLITES
ECHO SATELLITES

RESEARCH OR-

ECHO SATELLITES
ECHO 1 SATELLITE
ECHO 2 SATELLITE
ELEKTRON SATELLITE
ELEKTRON 2 SATELLITE
ESRO 1 SATELLITE
ESRO 2 SATELLITE
ESRO 2 SATELLITE
EUROPEAN SPACE
GANIZATION SAT
EUROPEAN 1 SPACECRET
EXPLORER SATELLITE
EXPLORER 12 SATELLITE
EXPLORER 12 SATELLITE
EXPLORER 12 SATELLITE
EXPLORER 12 SATELLITE
EXPLORER 20 SATELLITE
EXPLORER 20 SATELLITE
EXPLORER 20 SATELLITE

uency modulation redictor data compressor 21 pJ659 N68-34156

06 pl 196 N68-17381

re segment lower bulk-

13 p2074 N68-23723

2B vehicle AS-203 law gravity

g program and iterative mission AS-206A and ar-

Final flight performance prediction for Saturn AS-204 LM propulsion system S 1B stage [NASA-CR-91467] 04 p0565 Net-13372

Saturn pulse freque processed through pro [NASA-CR-61938]

S-1B stage steering p node presettings for m nunch vehicle operation

Simulated titanium alloy head for Saturn S-IC fuel to [NASA-CR-61638]

SATURN S- I STAGE

characteristics [NASA-CR-93293]

SATURN S- IB STAGE

EXPLORER 23 SATELLITE EXPLORER 26 SATELLITE EXPLORER 28 SATELLITE EXPLORER 32 SATELLITE FRENCH SATELLITE
GEODETIC SATELLITES
GEOPHYSICAL SATELLITES
GRAVITY GRADIENT SATELLITES INJUN SATELLITES INJUN 3 SATELLITE NT ISIS-A ISIS SATELLITES INS SATELLITES
LINCOLN EXPERIMENTAL SATELLITES
LOW FREQUENCY TRANSIONOSPHERIC
SATELLITES
LUNAR ORBITER
LUNAR SATELLITES METEOROLOGICAL SATELLITES
MICROMETEOROID EXPLORER SATEL-LITES LITES
MOON
NATURAL SATELLITES
NAVIGATION SATELLITES
NIMBUS SATELLITES
OAO NT OGO-A OGO-B OGO-C ORBITAL SPACE STATIONS OSO OSO-C PAGEOS SATELLITE PASSIVE SATELLITES PEGASUS SATELLITES PHOBOS NT NT POLYOT SATELLITES
RADIO ASTRONOMY EXPLORER SATEL LITE LITE
RELAY SATELLITES
SAMOS
SAN MARCO SATELLITE
SCIENTIFIC SATELLITES
SYNCHRONOUS SATELLITES
SYNCOM SATELLITES
SYNCOM SATELLITES NT SYNCOM SATELLITES
SYNCOM 3 SATELLITE
SYNCOM 3 SATELLITE
TIROS SATELLITE
TIROS 7 SATELLITE
TIROS 9 SATELLITE
TIROS 9 SATELLITE
TIROS 9 SATELLITE
TIROS 9 SATELLITE
TRANSIT 18 SATELLITE
TRANSIT 18 SATELLITE
TRANSIT 18 SATELLITES
TRANSIT 18 SATELLITES
TRANSIT 18 SATELLITES
TRANSIT SATELLITES NT NT VANGUARD 3 SATELLITE NT ZODIACAL DUST Thermal control of large astronomical satellite and associated heat balance and temperature distribution [ESRO-TM/P/-94] 04 p0594 N68-12975 hed from 1957 to 1966 04 p0581 N68-13137 Table of satellite [RAE-TR-67039] Weight analysis and inertia estimate for integrated version of small astronomical satellite [ESRO-TM/P/-60] 04 p0582 N68-13398 Maximum insolation of solar cell array of large as-tronomical satellite [ESRO-TM/P/-65] 04 p0582 N68-13400 influence of light source on heat balance of large as-(ESRO-TM/D/-69) 04 p0596 N68-13401 Single axis simulator as to dynamic behavior of large astro [ESRO-TM/P/-76] or as test facility to simulate Energy requirements of lar estimated on prof ble equipment 04 p0582 N68-13403 [ESRO-TM/P/-74] State of development of sa stronomical satelli nt of single axis simulator bearing for large astronomic (ESRO-TM/P/-72) 04 p0490 N68-13405 PERT project and co tronomical Satelline /LAS/ [ESRO-TM/P/-61] estimate for Large As-04 p0599 N68-13406 Weight analysis and inertia estimate of large as-tronomical satellite [ESRO-TM/P/-59] 04 p0582 N68-13407 Guided missiles, spacecraft, [FTD-MT-65-175] 05 p0742 N68-13972 Equipment design, launc nce of scientific SATURN PROJECT Product developm fasteners for use in Si [NASA-CR-61236] [NASA-SP-133] 05 p0745 N68-14965

of cryon Chebyshev minimax ovehicle control problems, realization of algorithm [NASA-CR-61599] Computer programs for unafer for Saturn exhaus mic testing of full scale & opic and mati vehicle trajectory op [NASA-CR-61223] type vehicles (NASA-CR-61856)

satellite experiments for neutral at-10 p1596 N68-20383 n and test of high voltage power supply for 15 p2443 N68-26882 transfer problem (LA-DC-9028) 16 p2774 N68-28144 CNES a 17 p2968 N68-28712 dinates B,L by the ter program for calculating satellite rad (CERTS-NT-01-6) 18 p3159 N68-29739 ng satellite stabalized APL-TG-997 20 p3585 N68-32514 activities in India 21 p3771 N68-34356 Satellite at RPU-S-41] systems capable of meeting mission requirement [NSSA-R40-68-5] 22 p3807 N68-35232 SATURATED HYDROCARBONS SATURATION Theory of saturation and charge-control analysis of action field effect transistor 23 p4030 N68-36326 SATURN (PLANET) Tabulations of trajectory data for one way trips from Earth to Saturn, Pluto, Uranus, and Neptune via Jupiter swingby [NASA-CR-61186] 05 p0737 N68-14508 Origin of solar syst (NASA-CR-93420) 09 p1418 N68-18461 lata for Jupiter, Saturn, Minimum energy trajec Uranus, Neptune, and Pho [NASA-CR-93783] 10 p1591 N68-19907 SATURN LAUNCH VEHICLES Digital computer program for statistical analysis of vind tunnel test data taken on Saturn-class vehicle models [NASA-CR-91045] 03 p0295 N68-11974 Test matrix technique for checkout and launching of tpollo-Saturn spacecraft NASA-CR-91056] 03 p0334 N68-12531 03 p0334 N68-12531 Design, mission, and de ment to study extended wand Apollo applications w [NASA-CR-66520] ment of orbiting experi-lessness using monkeys 04 p0460 N68-13840 lloys used in Saturn IC Weldability of al NASA-CR-61181] 05 p0666 N68-14131 and flight performance system for low gravity space flight 06 p0882 N68-15950 operation during Apo INASA-TN-D-42931

solutions for Saturn launch s, and hybrid-analog computer

08 p1155 N68-17737

dicting radiative heat

08 p1259 N68-18092

aturn launch vehicles 14 p2364 N68-25506

del for Saturn laur

15 p2557 N68-25812

liekle surrounding Saturn

16 p2771 N68-28309

mtrols in Saturn launch

17 p2816 N68-29330

um alloy prestres

18 p3087 N68-29852

turn project 17 p2894 N68-29276

lling warpage and residue m alloy structures for Satur

construction, and test data on reggedent bility model of mass spectrometer based on principle for use on Saturn launch vehicles (-61981) 22 p3878 N68-35635

nt of berylli

monopole principle [NASA-CR-61961]

NASA-CR-612351

Techniques for control treues in welded aluminus

iters satellite lo 06 p0908 N68-15190

its, and benefits of using riented applications 08 p1263 N68-18135

[NASA-CR-92562]

Technical feasibility, costs, satellites in practical earth-orie [NASA-CR-91251]

[MR-1218]

vector contr [MR-1288]

suring spatial orienta 4B stages of Saturn 5 [NASA-CR-61888]

Simulated astronaut aturn S-4B stage orbits

INASA-TM-X-536671

Evaluation of Saturn NASA-CR-94045] 11 p1789 N68-21542 of alternate p 12 p1874 N68-22464 Final flight perfo 206, Mission 276, pr [NASA-CR-96475] diction for Saturn AS-tem, S-1B-6 stage 20 p3579 N6E-33418 Final flight perfo 207, mission 276, pr [NASA-CR-96451] diction for Saturn AS-tem, S-18-7 stage 20 p3580 N6E-33586 e prediction of Sa Propulsion system S-1B stage, August-[NASA-CR-96344] 21 p3758 N68-34038 SATURN S- IC STAGE Hydrogen explose forward skirt section [NASA-CR-61421] 05 p0742 N64-14363 m 5 attitude con 08 p1155 N68-17653 sign requirem Saturn S-IC using di [NASA-CR-61698] IT p1702 N68-20877 Saturn S-IC the IMR-1182] 12 p1871 N68-22047 Saturn S-IC thrust vector of (MR-1183) 12 p1871 N68-22048 alternate potentio [MR-1196] 12 p1875 N68-22469 nulation of transi-gine phase of sta-intensity shaped re S-IC relia 14 p2365 N66-25529 a weld in lower bulkhead of Saturn 1C st (NASA-CR-61805) 15 p2476 N68-26849 g of serodynamic fins d on S-IC stage of Satur 16 p2789 N62-28001 SATURN S. 2 STACE dified computer program using finite different of for calculating base flow field and discinsti-turn 5-2 state 01 p0002 N68-10954 Performance test results ers for Saturn S-2 stage a rector control servonctuate

12 p1871 N68-22089

rets of alternate poten ad Saturn S-48 (bru

12 p1874 N68-224

16 p2788 N68-27997

18 p3074 N68-30086

02 p0271 N68-11192

and testing of device for mos-between separating S-2 and S-

Saturn S-4B restart alternate mission launch vehicle perational flight trajectory - AS-206 vehicle systems [NASA-CR-92805] 07 p1081 N68-16793 Apollo Saturn-204/LM-1 launch vehicle operational flight trajectory [NASA-CR-92838] 07 p1087 N68-17143 Apollo Saturn-207 launch vehicle operational flight trajectory dispersion [NASA-CR-92803] 07 pi083 N68-17180 Saturn S-4B workshop for research facilities - feasibility s [NASA-CR-93485] assed, orbital animal dy 09 p1279 N68-18706 Performance test results on wers for Saturn 8-2 stage and S. wire wound potentiome-Saturn S-4B stage thrust vector control servous [MR-1218]

12 p1871 N68-22089 Performance and immersion ometer sources for Saturn 2 ector control servonctuator tests of alternate poten-and Saturn 5-4B thrust 12 p1874 N68-22465 [MR-1288]

Modification kit studied for converting Saturn S-4B stage to test bed for booster recovery [DOUGLAS PAPER-3808]

14 p2352 N68-25459 Saturn S-4B stage 14 p2364 N68-25508 High force vibration testing fulated data acquisition rding of wideband infor-

Design of frequency more system for multichannel reco-mation from Saturn S-4B vibr in test 14 p2368 N68-25574 ibled antenna experiment

Proposed modular ass for S-4B Workshop 16 p2625 N68-27918 Expandable air lock experiment for orbital flight testing on S-4B Workshop - technical evaluation

16 p2784 N68-27924 Saturn S-2, S-4B, and instrument unit subamembly and assembly vibration and acoustic evaluation pro-

16 p2788 N68-27997 Design, development, and testing of device for mea-turing spatial orientation between separating 5-2 and 5-48 stages of Saturn 5 [NASA-CR-6188] 18 p3074 N68-30086

18 p3074 N68-30086 Flight data analysis and engi gram to determine restart failus in S-4B stage of AS-502 vehicle [NASA-CR-61993] ingine verification test pro-illure of J-2 engine installed 22 p3955 N68-35933

Structural stability analysis Apollo S-4B forward skirt, B lanar module adapte is and buckling modes of rt, instrument unit, and pter /Apollo short stack/ 23 p4182 N68-36887 [NASA-CR-92331]

Reliability analyses and failure probabilities of S-4B tage automatic pilots and hydraulic thrust vector con-rol system configurations, and compatibility with ac-[NASA-CR-98032] 23 p3995 N68-37242

SATURN I LAUNCH VEHICLES

Height, weight, payload, stages, thrust, engine type, propellant used, and type guidance systems for Scout, Delta, Thor-Agena, Atlas, Gemini, and Saturn launch [NASA FACTS 8-12-67]

06 p0915 N68-15240 Automatic testing and checkout of Saturn 1 launch [NASA-TN-D-4328] 06 p0916 N68-15570

obability and statistical theory on confidence is for component reliability of Saturn launch vehi-using conditional probability and Bayesian (D1-82-0676) 16 p2666 N68-27054 SATURN I SA- I LAUNCH VEHICLE

Elastic and damping properties of Saturn SA-1 scale odel, and dynamic response to sinusoidal and random NASA-CR-61575] 16 p2776 N68-27397

SATURN IS LAUNCH VEHICLES

Flight safety plan for Apollo/Se [NASA-TM-X-60783] iaturn vehicle AS-201 04 p0582 N68-13481 Flight safety requires restrictions, and instru-Saturn 18 launches 07 p1084 N68-16194 mentation necessary for Ap [NASA-TM-X-60841] Six degree of freedom trajectory analysis of Saturn 18 for Apollo-Saturn 204/LM-1 mission [NASA-CR-92837] 07 p1083 N68-16440

Apollo Saturn-204/LM-1 launch vehicle operational inht trajectory flight trajectory [NASA-CR-92838] 07 p1087 N68-17143 Apollo Saturn-207 la vehicle operational flight trajectory dispersion analysis [NASA-CR-92803] 07 pt083 N68-17180

Range safety analysis for Saturn 1B nose come and sumand service module configurations (NASA-CR-93715) 10 p1589 N68-19572 Range safety data with trajectories, impact, a sualty probability for Saturn 1B/AAP-IA laur

vehicle [NASA-CR-93656] 10 p1600 N68-20413 on for Saturn AS-205

Flight performance predicti propulsion system \$-1B-5 stage [NASA-CR-94697] 14 p2336 N68-24626 Modification kit studied for stage to test bed for booster re [DOUGLAS PAPER-3808] ed for converting Saturn S-4B

14 p2352 N68-25459 Small water-graphite nuclear rocket stages com ared with chemical upper stages for use in unmanned successit

22 p3910 N68-35073 NASA-TN-D-4827] Postflight tracking systemation using regression stem measurement erro a analysis for Apollo Satur 18 flight tests (NASA-TM-X-53756) 23 p4024 N68-37384

SATURN 5 LAUNCH VEHICLES Welding of aluminum alloys applicable to Saturn 5 structural component fabrication [NASA-TM-X-60591] 01 p0069 N68-10344

testing facilities for ng of Apollo Saturn 5 [NASA-TM-X-60664] 02 p0194 N68-11067

Structural deformation [NASA-TM-X-53673] turn 5 instrument unit 04 p0581 N68-12956 of p0582 N68-13482 Apollo/Saturn 5 flight st [NASA-TM-X-60782]

Height, weight, payload, stages, thrust, engine type, propellant used, and type guidance systems for Scout, Delta, Thor-Agena, Atlas, Gemini, and Saturn launch [NASA FACTS 8-12-67]

06 p0915 N68-15240 is used for discrete nd revis network simulation of Sa [NASA-CR-61460] heckout 06 p0801 N68-15823

Digitized nonline trol in S-IC boost pl [NASA-CR-61549] 08 p1155 N68-17653 of Saturn 5 launch vehicle

Piloted simulation stumanual backup guidance [NASA-TN-D-4481] 09 p1372 N68-19061 Numerical analysis to dete in local wind flow about Sa

[NASA-CR-61198] 11 p1789 N68-21298 ings on second flight of ine and structural anomalies mate committee hear on 5 - discussion of engi

11 p1808 N68-21836 Procedures and equipment for Apollo/Saturn 5 flight

rendiness test [NASA-TM-X-61054] 12 p1970 N68-21910 Flight performance predict propulsion system S-1B-5 stage [NASA-CR-94697] n for Saturn AS-205 14 n2336 N68-24626

Saturn AS-204/LM-1 | [NASA-CR-94709] ht trajectory analysis 14 p2351 N68-25177

Viscous dampers for lations of large flexible Saturn 5 launch vehicle [NASA-TM-X-60432] ing wind-induced oscil-is, antenne arrays, and 15 p2572 N68-26832

Feasibility and reliabil guide and control launch [NASA-TM-X-59113] lysis in use of pilots to es of Saturn 5 class 16 p2604 N68-27434 Acoustic qualification ed on S-IC stage of Satu of aerodynamic fins 16 p2789 N68-28001

Fully-manual and aug systems for Saturn 5 boosts bused mathematical models f [NASA-CR-1079] ted-manual control adied by emperically 17 p2975 N68-28426 Load relief study for control system to improve such probability of Saturn 5 booster with Voyager

NASA-CR-618671 17 p2976 N68-28895

ivity and fine structure r use in evaluating radia-aunch vehicles 18 p3157 N68-30042 Measurement of ahs parameters of water vap tive base heating of Satur [NASA-CR-61233] e and confidence limits for danned Space Flight Net-nd performance data from Mean time between failure unified S-band system of M work based on reliability an work based on reliabili unmanned Apollo flight [NASA-TM-X-63323]

21 p3659 N68-34278 improve launch proba-oyager paylouid 22 p3966 N68-35622 Load relief control system bility of Saturn 5 booster wi [NASA-CR-61956]

Shadowgraph, pressure, and flow visualization ex-periments in blowdown wind tunnel on series of cylin-drical and scale model Saturn 5 protuberances [NASA-CR-61998] 22 p3801 N68-35836

Spectral studies of signah present in command and ammunications system uplink transmitter of Saturn 5 dio frequency tracking and ranging systems ASA-CR-98033] 23 p4023 N68-37208 radio frequency traci [NASA-CR-98033] SAWTOOTH WAVEFORMS

Sawtooth waveform voltage generators using silicon (CM-R17-4.5) 10 p1507 N68-20441 Sawtooth wave buncher for 88-inch cyclotron axial injection system (UCRL-18125) 18 p3056 N68-30366

SC- 1 AIRCRAFT Low speed wind tunnel tests to determine roll stabili-ty of SC-1 aircraft scale model at large sideslip [RAE-TR-67104] 04 p0443 N68-13424

SCALAR MAGNETIC CHARGE U MAGNETIC CHARGE DENSITY

SCALARS

G-parity violating decay mode using current algebra of scalar densities

01 p0115 N68-10880 tum theory of scalar field and electromagnetic field models for Cauchy pro [NASA-TT-F-11243] 04 p0595 N68-13346

Reformulation of continuo cept for turbulent energy tran [TM-54] spectral cascading con-er and scalar quantities 09 p1382 N68-18850

Soft-meson emiss eroximation for evaluati (JINR-E2-3730) 15 p2520 N68-26447

Renormalization of scalar field in aziomatic and Lagrangian formalisms [ITF-67-40] 15 p2510 N68-26542 Perturbation theory and radiative corrections up to

18 p3134 N68-30419 (NP-17377) Scalar analysis to determine region of antenna apertures in na [AFCRL-68-0249] e field structure in focal near field 19 p3244 N68-31883

Quantum theory of scalar field in De Sitter space-time functions [JINR-P2-3777] 20 p3547 N68-33077 Constrained n under vector valued

criteria in linear topo [NASA-CR-85133] 21 p3672 N68-33837 Axiomatic field theory pro-relations for scalar case and fo of of superconvergence

or particle spin 22 p3923 N68-34989 Photoproduction of parenergies above a few GeV calar and rho mesons at

22 p3924 N68-34994

SCALE (CORROSION)

Scale corrosion by untreated water in-nuclear engine for rocket vehicle ETS-1 [BNWL-632] 15 p25 d water in exhaust duct of 15 p2502 N68-26438 t engines from inadequate

temperature and low o [FTD-HT-23-825-67] 20 p3580 N68-33472 on, and adhesive strength of scale lures up to 1200 deg C and in dif-mospherer Structure, formation, a stocks at temperatures rent combustion atmosp

23 p4074 N68-36237

n aluminum, magnesi-iated uranium metal 24 p4293 N68-37568 Pilot scale dissolution m, stainless steel, and no (ETR-207)

SCALE [RATIO]

Scale factors for proving existence theorem of AD-6622331 06 p0865 N68-15631 Fine-graduated m rations with closely [IZF-1967-19] scale derived for short du-06 p0785 N68-16066

SCALE EFFECT

Detection and scaling of statistical differences between visual testure [NASA-CR-90033] 01 p0033 N68-10127 Scale ratio, aspect ratio, and planform influence on performance of supercavitating hydrofolls [NSRDC-2390] 04 p0495 N68-13315

Effect of scaling in calculatilattice distance, compressibility of sodium fluoride [UUIP-537] liculation of cohesive energy, mibility, and elastic constants

'04 p0562 N68-13868 Effect of wind tunnel scale on power and voltage equirements of magnetic suspension systems for wind

05 p0642 N68-14366

Unitedly wing root st measured to determine be [ARC-CP-954]

12 p1814 N68-22655

Similarity laws for interaction of soler wind with magnetosphere to produce space simulation [ESRO-SN-16] 05 p0724 N68-14032 Laboratory scale model technoneumatic tire hydroplaning [NASA-CR-1074] e and scale factor in estimating solids under complex tensile and Loading sequence strength of brittle sol 13 p2047 N68-23357 18 p3173 N68-29607 d on distorted model Landau theory of ac-generalized to including f-order phase transitions, SCALE MODELS heory for p Wind tunnel study of scale model automobile ground iane boundary layer using moving-belt ground plane chaigue [LA-3805-A65] 08 p1140 N68-17405 14 m2372 N68-25088 Thermal modeling of cylinds space environment based on g ral systems in simulated metric scaling laws 10 p1611 NGS-19627 rtic wave propagat [NASA-TN-D-4229] 01 p0001 N68-10093 14 p2225 N68-25204 Scale model test conducted on apray alleviation device for pilot visibility from VTOL air/sea craft near ocean surface [TAR-TR-6704] 03 p0300 N68-12243 Design analysis for high pr arc heater [ARL-67-0276] nnel simulation of at of booster rocket ic portion of launch 11 p1679 N68-20767 03 p0300 N68-12243 Scale model wind tunn for Handley-Page aircraft [ARC-R&M-3486] ets of slender wing design 14 p2183 N68-25514 ty slesh frequencies and 4 p2243 N68-25473 03 p0297 N68-12460 Full scale lunar grav tor and 1/6 scale toururements for scaled tic wind tunnel 04 p0490 N68-13456 Lift, drag, and pitch m calibration model in superson [DLR-FB-67-46] Gravity and at [NASA-TN-D-4474] 15 p2448 N68-25853 [AFIT-TR-68-3] of scale model with 16 p2651 N68-27104 Aerodynamic char augmented jet flap INASA-TN-D-46101 Design, and evaluation of birefringent wave filter cale model for millimeter wavelengths radio astrono-E region magnetic field ohm confinement time, an 15 p2380 N68-25919 nd particle momentur scaling laws for scaled-s Exhaust gas ingestion erodynamics for vertice haracteristics and induced takeoff lift engine fighter (UCID-15241, REV. 11 (NASA-CR-979) 04 p0487 N68-13617 aerodynamics for v model in ground pro INASA-CR-10981 17 p2950 N68-29159 of simulated high energy in-al bubble chamber model 05 p0661 N68-14301 16 p2590 N68-28233 hotographic recording of si ctions in full scale optical b Engine noise spectra at hot and cold flow model je ID6-20601TN1 dy of observed infrared 18 n3057 N68-29590 Balance systems and techniques for model scale measurement of up to six components of fluctuating propeller forces produced by nonuniform inflow condi-tions. 18 n3162 N68-29767 for parawing opening tal drop tests 19 p3200 N68-31956 Scale factors verific Wind tunnel tests of scale of odel of Marconi 90 ft (NASA-TN-D-4665) fully steerable satellite tracker [NPL-AERO-1222] IREPT.-23501 18 p2995 N68-29925 05 p0662 N68-14659 tudy of use of soft side ability of legged landing Lunar module scale legs for improved touc Thermodynamic eff turi scale model [NASA-TN-D-4387] INASA-CR-11951 22 p3974 N68-35632 06 p0825 N68-15329 Vehicles [NASA-TN-D-4680] 18 p3169 N64-29962 Magnetic field of the article mommentum hick E layer, plasme scaling laws for optimum plasme purameter Wind tunnel study aerodynamic character propeller VTOL scale in [NASA-TN-D-4343] of lateral and directional ristics of powered four-duct Aerodynamic characterist model at slow speed and high [USAAVLABS-TR-67-79] s of tilt wing propeller ransition 07 p0936 N68-17023 23 p4142 N68-36918 21 m3620 N68-33646 Thermal scale modelling of spacecraft without ther-Performance tests, exha-scale model for nuclear exh-[NASA-CR-91275] t velocity, and design of Scale model studies of helico pter rotor flow patterns nal similitude [ESRO-TN-19/ESTEC/] os p1202 N68-17289 23 p4190 N68-37116 in water tunnel [USAAVLARS-TR-68-17] SCALLOPING Predicted full scale exhat mal radiation flux at proxi model data [NASA-CR-91270] 21 p3622 N68-33671 at plume length and ther-mate surfaces from scale Stress analysis and for scalloped thin walled sk [NASA-TN-D-4687] Model studies of reactor core [BNWL-518/DEL./] 21 p3726 N68-34474 parachutes 17 p2981 N68-28832 08 p1203 N68-17314 Sonic boom efficiency factories configuration, high aspectelta wing models or analyses for roctang SCANDIUM Longitudinal stability che cale model of four propeller scandium, and gadolinium (18-T-212) characteristics of dynamic iller tilt wing vertical takeoff asurements of yetrium 22 p3803 N68-34912 aircraft (REPT.-774) 12 p1895 N68-22828 08 pl114 N68-17768 Topographic influences on wind near Green River Heat capacity of sca Mechanical design details of magnet coil for research studies in one-half scale model of 14 foot bubble m I to 23 dog K 20 p3570 N68-32879 [CER67-68GH-GJB-JEC54] 22 p3906 N68-35446 ation of lightweight, high strength magne 08 pl159 N68-18155 Forces, pressure distri-hypersonic gun tests on car [DLR-FB-68-41] shock waves from [NASA-CR-96888] 22 p3890 N68-35143 Low speed static and dyn odel of double-delta super mamic stability tests on scale ersonic commercial air trans-22 p3800 N68-35500 SCANDIUM COMPOUNDS ems for aircraft and mis-aluation and use 23 p4018 N68-36169 Analytic data and X ray diffra port configuration [NASA-TN-D-4179] ction studies of wands 08 pl118 N68-18250 NASA-CR-97114 um carbides [LA-TR-67-78] Modified scale mo full scale fan noise sin (FAA-DS-68-5) n compressor facility for 05 m0624 N68-14478 of spacecraft without ther-Thermal scale modelli Impurities and crystal vinagnetic resonance line vanadium intermetallic cos [18-T-122] cies effects on nu pes in scandium 09 p1322 N68-18490 23 p4190 N68-37116 ESRO-TN-19/ESTEC/I Design, construction, instrumentation, and testing of 1/11.5 scale model of spherical prestressed concrete testing to liquid metal Applicability of water 15 n2405 N68-25905 engineering problems [LMEC-MEMO-68-4] er electron states and TRG-1204/R/, PT. 1) Molecular beam s 23 p4051 N68-37199 09 p1442 N68-18754 transitions in sca [UCRL-17961] 15 p2420 N68-26820 Wind tunnel tests to de erodynamics of one-fifth rmine low speed high lift ale variable sweep superral durability of full scale Performance, and structurbofan duct burner at sime SCANDIUM ISOTOPES sonic transport model [NASA-TN-D-4844] flight [NASA-CR-54637] Measurement of high energy gamma radiation nitted after capture of thermal neutrons by odd-od-otsesium 40, acandium 46, vanadium 52, and cobal 23 p3987 N68-37365 09 p1414 N68-19070 Wing and cone cali is for aerodyna net coils for one-half scale Mechanical design of m model of 14 foot bubble of [BNL-11267] 60 nuclei [ZFK-PHA-24] stability tests [AGARD-563] 24 p4193 N68-37762 01 p0106 N68-10481 10 p1511 N68-19551 its in scale model of Flow distribut SEFOR fuel burn [GEAP-5184] Magnetic in IBNL-116431 1 p0108 N68-10488 Comparison of the with scale model exp [NASA-CR-92022] Apollo water impact data 24 p4295 N68-37878 10 p1605 N68-19994 SCALERS Aerodynamic character tilt-wing V/STOL aircraft [NASA-TN-D-4493] n counters and design of scalers 18 p3076 N68-30421 of large-scale model of [NP-17360] REPT.-798/L/PL1 07 p1055 N68-17127 10 pl457 N68-20370 Evaluation of existing scaling techniques for deter-sining feasibility of transistorized counting or scaler nethod of manuring m. cohelt. scandium. Electrical impedance measurus on Nike-Apache rocket vel [CM-R39-10.4] rements of dipole anten-icle scale models 10 p1507 N68-20518 and yttrium isotop (CEA-R-3260) (ORNL-TM-2214) 21 p3741 N68-34412 08 p1211 P48-17222 Design and p generator models [REPT.-2] SCALING LAWS Reactor neutron co 46 and beta brunching [SGAE-PH-61/1967] s section of scandium andium 47 decay 09 p1390 N68-18856 of miniature hydrogen Fock representa fields in two-dimen [JINR-P2-3392] ed for quantum scaler 11 p1629 N68-21055 01 p0105 N68-10391 on of beta rays from cessium fluon 204 00 p1393 N68-19034 Feasibility of 30 watts per pour esign of engineering demon apployability of selected flight of all careling tests of arms. und roll-up solar array-nstration model with configuration and ther-Longitudinal pole 37, scandium 46, a INR-798/I/PL) Statistical decision plied to personnel se [STB-67-18] d scaling methods apdeployability of selected mal cycling tests of array [NASA-CR-94243] 02 p0168 N68-11097 12 p1817 N68-21879 Nordstorm theories of enerally covariant scales lat Riemannian methods of gravitation compared to ir theories set in conformally on solid Scimitar model INFRARED SCANNER
OPTICAL SCANNERS
SUBREFLECTORS

02 ±0239 N68-11235

ique for investigating

Orthogonal mechanical scanner with electronic pulse-length discrimination for automatic evaluation of nuclear track and solid detector plates [ANL-TRANS-509] 01 p0066 N68-10873 Scanning elec [NBS-TN-278] ctron probe mic canalysis 04 p0507 N68-13005 Parameters are defined for output waveforms used in scan patterns for locating geometric rather than luminous centers of plu [NASA-CR-73163] 04 p0573 N68-13022 Scanning and rectifying panoramic photographs of celestial bodies [ACIC-TC-1291] 04 p0509 N68-13272 Scanning and mea particle tracks from b [UCRL-17635] t systems for analyzing nber photographs 05 p0660 N68-14228 High sensitivity scan [WRE-TN-PAD-120] 07 p0996 N68-16466 strument approach and landi [RD-68-2] sidance system for in-07 p1022 N68-16486 Heavy water-solar ra and flying spot scanner [COO-818-103] 08 pl212 N68-17394 Computer controlled data reduction of spark number film [UCRL-17695] 08 p1181 N68-17964 Electron beam scanning system for measuring dielectric properties of ferroelectric ceramics [SC-CR-67-2825] 11 p1697 N68-21089 Scanning by phased, coupl [TG-956] ntenna arrays 15 p2426 N68-26251 Transistorized control circuits for spark chamber film scanning instrument [NP-TR-1651] 17 p2884 N68-28862 Scanning celestial attitude determination system for small scientific satellites [NASA-CR-95807] 18 p3112 N68-29763 Matrix-fed circular antenna array for continuous [NRL-6696] 19 p3237 N68-31289 Gamma ray imaging techniques compared using three dimensional phantom display device [SM-108/117] 22 p3880 N68-35925 SCANNING NT FREQUENCY SCANNING NT PANORAMIC SCANNING NT RADAR SCANNING Uniform local respon (NASA-TM-X-63020) nsivity of detectors by scanning 01 p0098 N68-10197 Gamma scan and wire actival suring nuclear fuel ratings (TRG-1464/W/) 04 p0537 N68-12866 Cardinal reconstruction theory for estimating effects of display scanning for modeling scanning behavior of human operator [TM-163-B] 04 p0462 N68-13286 Grid method for constructing scan lines generated by Tiros scanning radio [NASA-CR-91379] 04 p0505 N68-13829 Calculating signal to noise ratio of photoelectric systems with scanning light beams 09 p1320 N68-18807 Proper use of laser radiation in calibration of spec-trometer scanning functions 12 p1883 N68-21969 Survey of infrared celestial backgrounds (AFCRL-68-0041) 20 p3587 N68-32802 Effect of scanning on impedan collinear, and rectangular arrays [AFCRL-68-0317] nces of finite broadside, 23 p4022 N68-36896 SCANNING DEVICES U SCANNERS SCAT SUPERSONIC COMMERCIAL AIR TRANS-SCATTER PROPAGATION NT IONOSPHERIC F-SCATTER PROPAGATION Kinetic flow analysis on gas point mass scattering 02 p0247 N68-11557 Effect of troposcatter media on analog and high speed digital data signal transmission [DC-66-5] 08 p1149 N68-18055 08 pl149 N68-18055 ion in warm plasmas cal-Electrostatic wave propa

ospheric scatter 10 p1572 N68-19555

13 p2027 N68-23479

nental antenna studies for

Observatory, Peru [NASA-CR-86708] [TR-45] in forward scutter come discharge tube (FTD-HT-23-997-67) SCATTERERS U SCATTERING NT NT NT NT NT scattering [CERN-67-30] [LNF-68/1] nas by passive loading [R67ELS-54] singularity in [ITF-67-22] spheres (SC-R-68-1691) [SC-R-68-1692]

Faraday rotation dispersion loss at Jicamarca Radar 16 p2654 N68-27543 VHF meteor trail forward scatter phase deviation ap-plied to time synchronization 21 p3660 N68-34329 Multiple scattering from is netic radiation with statistics netic dielectric particles nteraction of electroms ral collection of nonma 21 p3732 N68-34440 Electroacoustic and electromagnetic wave scatter propagation for solid interfaces in compressible slasmas 22 p3940 N68-35063 ation calculations for observable meteor trails 24 p4340 N68-37581 Plasma resonance scattering of radio waves in neteor trail model using cylindrical mercury vapor 24 p4325 N68-38204 SCATTERING
NT ACOUSTIC SCATTERING
NT ATMOSPHERIC SCATTERING
NT BACKSCATTERING COHERENT SCATTERING COMPTON EFFECT ELASTIC SCATTERING ELECTROMAGNETIC SCATTERING ELECTRON SCATTERING FORWARD SCATTERING INCOHERENT SCATTERING ION SCATTERING
IONOSPHERIC F-SCATTER PROPAGATION
LIGHT SCATTERING MICROWAVE SCATTERING MIE SCATTERING MIE SCATTERING
NEUTRON SCATTERING
NUCLEAR SCATTERING
NUCLEON-NUCLEON SCATTERING PROTON SCATTERING RADAR SCATTERING RAMAN SPECTRA
RAYLEIGH SCATTERING RESONANCE SCATTERING REVERBERATION TROPOSPHERIC SCATTERING WAVE SCATTERING X RAY SCATTERING (TUEP-67-251 siques and apparatus for observing pion-pion 04 p0548 N68-13378 Three dimensional numerical experiments on rare gas atoms scattered from single crystals in silver [NASA-CR-92704] 07 p0984 N68-16482 Solution of finite length septuming matrix techniques with appl m problem by scatter-oplication to periodic (TN-1967-54) 11 p1676 N68-20631 le Coulomb scattering for ISR [1] 11 p1758 N68-21844 Multichannel dynamics in new strip approximation 12 p1925 N68-22360 small scattering anter 14 p2220 N68-24462 FORTRAN program for calculating neutron and gamma ray dose rates and flux distributions due to direct beam and radiation scattered from conical and 14 p2303 N68-24622 determining surface gas scattering 16 p2648 N68-27773 Asymptotic method ughness effects on mona kaon regeneration [JINR-P2-3621] Scattering by repulsive sing ngularity in quantum mechan dar potential with power 16 p2731 N68-28175 (JINR-P2-3619) Theory of scattering from imperfectly conducting 17 p2920 N68-28874 Numerical results of scattering from imperfectly con-17 p2850 N68-28932 measurements of scat-surce near earth surface 17 p2939 N68-29282 Gamma ray spectroscop tered photons from a point o [USNRDL-TR-67-124] Absorption and scattering of thermal radiation by loud of small particles 18 p3128 N68-29758 erning mean number of timensional semi-infinite photon scatterings in the 18 p3129 N68-29781

SUBJECT INDEX absorbing, and scattering media [NASA-CR-95838] 18 p3186 N68-29924 to multiple scattering in many body system 19 p3323 N68-31003 Scattering in argon atomic beams from cleaved mica and vacuum deposited silver on cleaved mica 20 p3541 N68-32274 Scattering of mo energetic argon beams by heated platinum targets [T-68-1] 20 p3543 N68-32609 Relativistic and one photon corrections to interac-tions between two atomic systems [TR-N69-1] 20 p3549 N68-33366 systems 20 p3549 N68-33366 Scattering of dipole field by infinite circular conducting cylinders 21 p3656 N68-33712 Pion production and pion nucleon scattering 21 p3736 N68-33893 Model theory to explain effect of quark existence on high energy scuttering [UCRL-18251] 21 p3742 N68-34473 Scattering of plane elec-array of center loaded cylin [NRL-6681] gnetic wave by linear 21 p3662 N68-34602 Pion-pion scattering effects in proton-antiproton annihilations at 2.5 GeV/c 22 p3925 N68-34997 Peripheral processes in pion n ucleon scattering 22 p3925 N68-35024 Dyson-Salam renormalizemeson scattering theory nucleon theory ation approach applied to and pseudoscalar pion-23 p4112 N68-36101 Double charge exchange scattering of positive pion mesons on complex nuclei 24 p4308 N68-37560 static scattering 24 p4224 N68-37721 ering of molecular beam Theoretical analysis of scat normally incident on solid surfa [AFOSR-68-1734] ce 24 p4321 N68-38311 SCATTERING AMPLITUDE High energy nucleon-nucleon scattering with large nomentum tramser and chiral SU/2/x SU/2/ symmetry 04 p0551 N68-13894 on for two body relativistic scattering amplitu 05 p0709 N68-14255 Tables of electromagnetic scattering amplitude and coss section of conducting hemisphere for nose-on incross section of con-06 p0883 N68-15111 Stationary phase method applied to potential scatter-09 p1399 N68-19471 Optical scattering in laser pumped ammonium dihydrogen phosphate [REPT.-874] 11 p1768 N68-20726 11 p1768 N68-20726 Many body multichannel partial wave scattering am-pirtude 11 p1751 N68-20784 Observable effects of box singularity 12 p1926 N68-22361 Experimental measurement and the of predicted dispersion relations in magnetic [BNL-12058] 12 p and theoretical analysis in nuclear scattering 12 p1930 N68-22571 Spin dependence of for 13 p2115 N68-23367 Differential cross section and final state deuteron ef-ct measurements for elastic pion deuteron scattering 13 p2115 N68-23370 Radar Doppler scatt eter for reflectivity studies of earth terrain that: [NASA-CR-62072] nar surfaces 13 p2028 N68-23721 for meson baryon scatng to decouplet exchange 13 p2120 N68-23924 Real variables of forward scattering amplitude from Wick limit for neutron elastic scattering cross section [LA-DC-9179] 14 p2308 N68-24892 Necessity of production amplitudes in quantum field 14 p2309 N68-24926 anel static model of pion-nucleon scattering

St

C

ei [I

Pi

P 18

thin

(U

tip die

(K

by sca [N

PC

T scal

N

rege asyr neu

(JII)

Si

P

C

CO

and (OR

Ge

Te

equil (OR)

Hij forwi plitus quan (REF

End in

Hye plitud solutio (REP

.

16 p2718 N68-27079

Theoretical and experie

[NASA-CR-66620]

13

12

17

24

91

200

ng

21

11

94 tic

55

nd in-

11

28-

71

m

26

84

61

sis

in

70

See

21

5.

192

26

High energy assumption and a Compton scattering sum rules [IC-67-37] ubtraction com 17 p2927 N68-28633 tz transformations for partial wave analysis of rward scattering amplitudes 17 p2927 N68-28635 Mass and angular distribution one and amplitudes in eta-m UCRL-18141) 17 p2931 N68-28936 Data tables for differential proton-proton and pro cross sections of elastic uteron scattering and for attering amplitude proton-proton and p real part of proton-ac [SLAC-TRANS-80] ering amplitude 17 p2932 N68-28945 theory to experiment for in pion nucleon scatter. Comparison of Regge pole the no meson nucleon production 17 p2942 N68-29483 ours method and applications in studies of scattering amplitudes [UCRL-17921] 17 p2942 N68-29485 imental evidence for existence of mul-eral processes based on bubble chamber stu-17 p2943 N68-29490 rergence sum rules for fic-67-471 18 p3129 N68-29842 Scattering amplitude and by time dependent autocorn scattered by turbulent medius [NP-17456] de and phase fluctuation studied 18 p3145 N68-30331 Regge behavior, kinematic s poles to satisfy Mandelstam repri [TH/68/15] tic singularities, and fixed esentation 18 p3136 N68-30584 Generalized equivalent potential method for calcu-lating multichannel scattering and particle scattering amplitudes at nonzero spin 19 p3321 N68-30975 Toward vector meson bootstrap in anti-boson boson 20 p3541 N68-32318 Neutral kaon sub I. yielding neutral kaon sub S regeneration process at high energies to determine asymptotic behavior of kaon neutrino and antikaon neutrino cattering smallfundas [JINR-P1-3788] 20 p3548 N68-33209 vergent sum rules for 21 p3737 N68-33930 rs of scattering amplitudes 21 p3744 N68-34591 [UCRL-18243] Conference on SU/3/ related to particle coupling, ecay rate predictions, scattering amplitude, parity, decay rate predictions, scattering a and spin reactions [CONF-670725] 22 p 22 p3919 N68-34825 Baryon exchange reactions, scattering amplitudes, and other aspects of SU/3/ reaction predictions [ORO-2504-12] 22 p3920 N68-34830 hynamical exchange models of scattering processes, SU/3/ symmetry for Regge residues 22 p3920 N68-34831 Generalized superconvergence relations as guide to high energy scattering of hadrons 22 p3923 N68-34987 Tabulated X ray diffraction m data on liquid benzene in equilibrium with vapor at 25 deg C [ORNL-4166] 22 p3825 N68-35415 High energy upper bounds for forward and nearly forward fixed momentum transfer scattering amplitudes that satisfy analyticity properties of axiomatic quantum field theory [REPT.-68/23] 22 p3929 N68-35495 Bremsstrahlung amplitude by nucleon collisions [JINR-P2-3803] 22 p3934 N68-35802 Energy graphs for real part of elastic pion nucleon and nucleon-nucleon scattering amplitude
[JINR-P2-3850] 22 p3935 N68-35832 uperconvergent sum rules for scattering of calars on pions and axial vector or vector particles 22 p3938 N68-35978 Hydrogen atom levels and Coulomb scattering am-diation using 5 matrix and Schroedinger plation. 23 p4119 N68-36684 [REPT-68/19] S matrix theory and so tions using three body probi [TH/68/29] ring amplitude calcula-23 p4124 N68-36946 Singularities of quadran lar graphs containing in-VE-STF-67-16-K 23 p4127 N68-37013

Numerical analysis of partia plitude using Hergiotz functions [NYO-2262TA-163] al wave scattering am 23 p4130 N68-37083 ns of SL/2,C//SU/2/ har-23 p4131 N64-37156 SCATTERING COEFFICIENTS 07 p0965 N68-16932 Numerical analysis of inverse scattering in electromagnetic fields [REPT.-8579-2-Q] 08 p1215 N68-17938 es by elastic scattering of local TH/2191 09 p1392 N68-18970 X ray diffraction by perfect layered crystal structures 09 p1384 N68-19191 Two point functions for scattering of low energy par-[JINR-P4-3354] 10 p1562 N68-19637 Computer program for calculating normalized Mie scattering functions [NASA-CR-1022] 11 p1755 N68-21227 Geometric optic techniques for determining scatt-ing from rough surfaces for finite distances betwee transmitter and receiver [D1-82-0637] 11 p1662 N68-214 11 p1662 N68-21493 Flight tests of radar scattering coefficient measuring [NASA-CR-94224] issipating layer during radi-esses solved by Galerkin Form factor behavior in scattering and annihilation [JINR-E2-3729] 14 p2303 N68-24601 Geometrical reconstruction computer program escribing magnetic behavior in large ionization class-[CERN-TRANS-67-8] 23 p4108 N68-36485 SCATTERING CROSS SECTIONS orption and scattering by con 01 p0138 N68-10165 sulution of pulsed ct on cal 01 p0104 N68-10292 Cross section for karr antikaon plus two neutro proton elastic scattering (COO-1195-87) 01 p0104 N68-10295 g lengths and 5-wave phase shifts [LA-DC-8857] 01 p0104 N68-10333 Bistatic scattering from s with emphasis on lunar-like s [NASA-CR-90091] ally rough surfaces 01 p0098 N68-10346 Method of measuring di tion of neutron scattering nergy 01 p0104 N68-10360 resonance detects (JINR-P3-3413) ross section for positrons Ratio of elastic and electrons on pro (DESY-67/22) 01 p0105 N68-10389 , proton-proton resc-(AFOSR-67-2294) 01 p0110 N68-10571 Cross section data on i es, and nuclear reaction 01 p0115 N68-10933 of slow neutron scatter Spectrometer a ing from light was (IINWL-345) 02 p0245 N68-11498 Molecular beams applied to measurement of colli-on cross sections and determination of intermolecular [TR-2/18/] 02 p0250 N68-11904 graphy for GYMEA Data preparation cross section library [AAEC/TM-343] 03 p0428 N68-11983 cross sections compula-(SLAC-TRANS-65) 03 p0387 N68-12153 and elastic scattering of pion of nickel isotopes 03 p0389 N68-12270 Total reaction of 24.7 MeV alpha par [INP-558/PL] Nuclear reaction IPAEC/A/IN-6611 os p0373 N68-12305 on-proton scattering 03 p0392 N68-12521

(ORO-1316-24) ring cross section ob-Neutron elastic a tions on various met [ORNL-TM-1991] ential cross seco measure cross sections 180 in section reactions 9 MeV 03 p0395 N68-12627 odel study by measuring Activation method used to a producing isomeric state of Ta 1 with energies from 12.2 to 17.9 1 [INR-795/I/PL] Method for generating speffective core cross sections [GEMP-548] e dependent multigroup 710 reactor analysis 03 p0379 N68-12683 04 p0536 N68-12839 Angular distribution and a measurements of enriched carb [ANU-P/388] d scattering cross section carbon 13 targets 04 p05-48 N68-13310 nd cesium by oxygen con-nolecular beams 04 µ0549 7468-13462 on cross sections for quantifying energy tion and fractional cull lethality caused by radiation expose [UCRL-17283] 04 p0459 N68-13792 ng cross sections for polycrystalline solids WANL-TME-1640] 04 p0551 N66-13837 Lambda to sigma ratio haryon reaction in quark (TH/226) ospin S wave K meson 05 p0704 N68-13990 approximation of ther-e cross sections 05 p0705 N68-14073 AFRE-R-55361 Subroutine for computing Compton, photoelectric, air production, and microscopic cross sections for Neutron emission a uranium 235 IBNL-50045/T-455/J ring cross sections of 05 p0707 N68-14186 Computer program tion from raw experim [EUR-3652.F] n cross section evalua 05 p0711 N68-14358 matrix example 05 p0713 N66-14490 Acquiral and us [JINR-P2-3506] Conversion and modification of deformed nucleus ptical model computer code 2 Plus used for analysis of cattering cross sections for heavy even-even nuclides scattering cross sections for Fortran 2 to Fortran H [NAA-SR-MEMO-12532] 05 p0714 N68-14542 Excitation functions, for KFK-519] 05-p0716 N68-14666 (CCDN-NW-6) 05 ±0716 N68-14680 etry of differential cross sections for ag of 10 MeV belium 3 ions by alu-boron, and lithium isotopes 05 p0719 N68-14802 nd company s and scattering cross sec-measured results for fast critical asset [KFK-628] 06 p0076 N68-15822 Cross section experiments, pion and kaon produc-on, and nucleus and hyperon excitation related to 06 p0085 N68-15853 alculating radiation dif-d scattering matrix 06 p0896 N68-15877 (NASA-CR-92547)

06 p0887 N68-15967

5

.

n

1

C

SI

西田口

ah 08

ter

der

pro

SCATTERING CROSS SECTIONS Particle interaction measurements and calculation stronomical measurements, and radioactive isoto-[NASA-CR-91866] 06 p0888 N68-16101 Multiple particle scattering of [JINR-P2-3546] nucleons in nucleus 07 p1048 N68-16686 d elastic scattering Neutron ang ns of nicket, cobalt, and copper 07 pl048 N68-16691 Digital computer program for calculating radial dis-ibution of dose for 100 to 300 keV protons incident of hydrogen (BNL-11877) 07 p1050 N68-16806 Experimental determination of electron concentra-tions and effective frequencies of electron collision with neutral particles in various gases behind reflected 07 p1051 N68-16853 Neutron cross section of manganese evaluated for nuclear data file (BNL-50060) 07 p1052 N68-16909 Approximation analysis for plane wave scattering cross section on dielectric spheres 07 p0965 N68-16934 Angular distributions of gamma rays produced by outron inelastic scattering processes in sodium, mag-sium, aluminum, sulfur, and chlorine nesium, aluminum, sulfu (USNRDL-TR-67-123) 07 p1053 N68-17017 FORTRAN computer program for cross sections and particle emission analysis in nucleon-nucleus colli 07 p1054 N68-17100 [NASA-CR-93127] Cross sections for elastic and inelastic scattering of protons from Ti-48, V-51, Cr-52 Cr-52, Fe-54, Fe-56, Co-59, Ni-60, Ni-62, Ni-64, Cu-63, Cu-65, Zn-64, and Zn-68 [ORNL-4182] 07 p1054 N68-17111 Relative cross section for thermal and resonance neutrons in energy spectra of long range alpha particles emitted in thermal neutron fission of uranium 235 [INR-817/IA/PL] 07 p1054 N68-17120

Van Hove overlap function and shadow elastic scat-tring determined assuming no correlation among econdary particles, constant phase wave functions, and neglecting usin. and neglecting upin (INR-825/VI/PH) 07 p1054 N68-17124 Compton scattering by to [AFWL-TR-67-120] 08 p1214 N68-17733 Cross sections for electron excitation of 3914-ang-strom /0,0/ band of positive nitrogen first negative [LA-3783] 08 p1215 N68-17784 Differential cross sections of proton-deuteron elastic

scattering at large angles (ITEF-477) 09 p1388 N68-18604 Differential elastic and inelastic neutron scattering ross sections of lithium isotopes

LA-3765] 09 p1391 N68-18864 (LA-3765)

Neutron differential cross sections for graphite at 09 p1391 N68-18898

Super high energy interactions in large blocks of photographic emulsion [INR-P-826/VI/PH] 09 p1391 N68-18937

Bibliography on space radiation tion data, particle transport, and ra [NASA-CR-75316] 06 tion sources, cross sec-d radiation shielding 09 p1392 N68-18981 Computing inverse differential cross section transformation matrix T minus 1 [NAA-SR-MEMO-12489] 09 p1394 N68-19108

09 p1394 N68-19108 Small angle X ray scattering by liquid helium 3 to etermine zero sound modes 09 pl383 N68-19117

ns of 16.2 BeV negative Electromagnetic interactions pions determined with nuclear e 09 p1395 N68-19215

BRIGIT computer program for proton elastic scat-ORO-2972-341 10 p1561 N68-19531

with anisotropic effective ma [KAPL-P-3340] scopic cross sections 10 p1554 N68-19587 estions to particle clas-

Regge pole model and applic sification and high energy reaction [CERN-67-24, V. 2] 10 p1562 N68-19594 Spin dependent effects on differential cross sections and polarizations of /alpha, nucleon/ reaction

ron/ reaction 10 p1567 N68-19878 ous atomic absorption cross sections of neutral sodium vapor [TR-1001/9260-01/-5, SUP. 1]

10 p1569 N68-20018

Effect of finite beam width for Rutherford collision (AFIT-TR-68-2) 10 p1574 N68-20189 Optical model of resonance phenomena in elastic cattering of alpha particles on potassium and calcium (INP-577/PL) 10 p1570 N68-20279

Differential cross sections for proton scattering from sclei with collective degrees of freedom freedom 11 p1750 N68-20740

FORTRAN computer program for generating complete cross section sets using evaluated nuclear data files [ANL-7318] 11 p1755 N68-21171

MTRAN computer program for calculating ron scattering cross sections for crystalline materi-

[LA-3823] 11 p1741 N68-21172 Nuclear structure, alpha, beta, and gamma radiation, ross sections, and artificial isotope production [155-67/23] 11 p1755 N68-21186

Numerical analysis of cross sections and probe wires electromagnetic scattering bility distributions for long [TN-1967-55]

11 p1661 N68-21333 SUMOR - FORTRAN 4 program for Philico 2000 for alculating neutron resonance cross sections including and level interference and exact Donnler broadening t Doppler broadening 11 p1757 N68-21448 [WAPD-TM-518]

nd beryllium 7 12 p1918 N68-21857

ering properties of bistation meteorological coherent-do 12 p1842 N68-21913

12 p1919 N68-21958

tal thermal energy cross section measurements for ering of alkali atomic beams by alkali gases and has in thermodynamic equilibrium Total there 12 p1947 N68-22186

Nucleon Born computation for gradient coupling and exchange in low energy pion-nucleon scattering [EFINS-67-98] 12 p1926 N68-22365

Single differential cross section for thermalization of eutrons at wide range of temperatures GA-8345] 12 p1928 N68-22447 [GA-8345]

Total reaction cross sections for protons between 10 and 22 million electron volts on carbon 12 and calcium

12 p1928 N68-22460 [LA-3842] Survey on neutron interaction data for tantalum in I.Oe-10 to 15.0 MeV energy range [AHSB/S/-R-141] 12 p1889 N68-22616 on data for tantalum in

Evaluated cross section data compilations for hafni-um and hafnium isotopes [KAPL-3327] 12 p1932 N68-22626 12 p1932 N68-22626

Expressions for describing pion-nucleon differential attering cross sections in terms of Coulomb scattering amplitude, Coulomb phase shifts, and nuclear ing amplitu ORNL-4197] 12 p1933 N68-22658

Neutral K-meson or protons at low energies [TR-748] 12 p1936 N68-22734

tic differential cross sections of pions sured at 410 and 490 MeV 12 p1936 N68-22764 Forward elastic diffe and protons mes (CEA-R-3146)

egration cross section 12 p1940 N68-22901 [SAL-8]

Forward charge exchi tering at high energy 13 p2113 N68-23092

Differential cross section et measurements for elas final state deuteron ef-ion deuteron scattering amplitude constr [JINR-P2-3619] 13 p2115 N68-23370

Partial scattering cross secti thium 7, potassium, and cesi con, argon, krypton, and xen is for thermal beams of

13 p2116 N68-23488 ing elastic scattering 13 p2116 N68-23489

Local atomic order, magni-cal resistivity of Au-Fe alloys properties, and electri-

13 p2133 N68-23490 Differential cross section 12-carbon 13 and boron 10-b barding energies below MeV 13 p2117 N68-23606

d calculations for elastic and inelastic scattering of fast neutrons [BMWF-FBK-67-90] 13 p2118 N68-23734

Differential cross sections of elastic p-p and p-d scat-tering at small angles, and real part of p-n scattering amplitude in 1 to 10 GeV energy range [JINR-P1-3641] 13 p2119 N68-23755 Near-threshold behavior and resona elastic scattering cross sections nce effect of in-

13 p2121 N68-24061 Energy dependence of cross section for fast neutron

[INR-830/I/PL] 14 p2304 N68-24649 Cross section for elastic scattering of fast neutrons by praseodymium and lanthanum [CONF-680307-13] 14 p2304 N68-24650 14 p2304 N68-24650

Differential cross section and production angular dis-ibution data from kaon-proton interactions in drogen bubble chamber (COO-1195-116) 14 p2305 N68-24675

Thermal cross sections and para cross sections of ytterbium isotopes [BNL-12263] nagnetic scattering 14 p2305 N68-24718

Differential cross section of proto by helium 4 nuclei [JINR-P1-3720] 14 en elastic scattering 14 p2306 N68-24765

on scattering cross section measurement in ce energy regions with spin determination of Neutron scatteri [CEA-R-3360] 14 p2307 N68-24837

Neutron cross section data interpretation by com-ster calculation of self-shielding and multiple scattering effects [GA-8380] 14 p2324 N68-24910

Cross section uncertainties in compact space power [UCRL-70797] 14 p2292 N68-25044

Thermal neutron scattering cross section data bibliographies [JAERI-4043] 14 p2312 N68-25064

Differential cross sections of pi meson and proton elastic scattering in diffraction peak region /spark chamber measurements/ 14 p2313 N68-25116

Uranium 235 fission cross sections from 0.8 to 170.0 V obtained by time-of-flight method [IAE-1302] 14 p2315 N68-25225

Neutron scattering cross sections of uranium 233, uranium 235, and plutonium 241 from 1 to 30 eV [UCRL-70826] 14 p2315 N68-25226

Differential, neutron, capture, fission, and scattering ross sections and electromagnetic spectra of nuclear reactions [ORNL-TM-2159] 14 p2294 N68-25258

Neutron measurement technology for cross section analysis of fast reactor and reactor shielding [GA-8466] 14 p2294 N68-25265

Neutron scattering cross sections for uranium oxide, zirconium hydride, and diphenyl [GA-8449] 14 p2317 N68-25353

SU/3/ crossing relation for meson-baryon scattering and Regge pole theory [TUEP-68-6] 15 p2513 N68-25896

Flectron spin exchange collision cross security classium and cesium and optical pumping classics in

fferential cross section for deuteron production in on-proton collisions from 1.5 to 3 GeV 15 p2514 N68-25933

Polarization in pion proton scattering at various sergy levels

15 p2>14 N68-25947 Muon proton elastic scattering cross section at high omentum transfer

15 p2514 N68-25948 ering cross sections for 15 p2514 N68-25954

Cross sections for photoprodu electron positron pairs from carbo action of high energy ion 15 p2516 N68-26048

vior by alumin 15 p2550 N68-26111

trablung production compared to predicted Born ap-proximation values 15 p2551 N68-26137

nd center of sphere dose cal-lation shielding research 15 p2553 N68-26145

ering amplitude 17 p2932 N68-28945

17 p2934 N68-29113

17 p2935 N68-29160

17 p2935 N68-29164

17 p2939 N68-29235

17 p2940 N68-29312

17 p2940 N68-29313

17 p2942 N68-29486

17 p2943 N68-29489

s in molecular beams of

18 p3127 N68-29697

r clastic and inclustic

18 p3133 N68-30350

18 p3140 N68-30824

element 102 isotope u targets with Q ions

19 p3320 N68-30870

19 p3321 N68-30952

atic acattering in

molecular wave fi

19 p3321 N68-30965

19 p3322 N68-30977 ns at 90 deg in energy

19 p3324 N68-31083

ections of carbon and carbon elastic scatter-

19 p3325 N68-31135

and cross sections, and

19 p3327 N68-31206

9 p3330 N68-31401

19 p3330 N68-31523

cross sections for gase-

19 p3334 N68-31816

19 p3337 N68-32158

target 20 p3541 N68-32329

mplifiers considered in dy to increase scatter-

20 p3437 N68-32633

ng in pion proton reac

20 p3543 N68-32730

am scattering to detect

20 p3556 N68-32742

al cross sections of

actions of deuteri-

rules for determine

ng, cross section,

Neutron velocity selector measurement of neutron scattering in graphite, heavy water, and beryllium oxide 15 p2518 N68-26356 Cross section sum rules test for nucleon magnetic 15 p2520 N68-26448 LIINR-E2-37151 tic scattering cross section (DESY-67/34) 15 p2520 N68-26484 nces in meson-meson 15 p2523 N68-26560 Multi-Regge model effected by crossing relations elicity amplitudes of processes with n final state pa cles [LPTHE-TH-235] 15 p2523 N68-26568 ary information on cross sections of neutron and charged particle induced reactions, cross sections of isotopes, and development of windowless gas target cl [ORO-1067-2] 15 p2524 N68-26697 Review of Thomas (NASA-CR-85738) 15 p2429 N68-26707 rential cross or elastic scattering of ns from hydrogen proto 15 p2526 N68-26919 Pion-proton elastic scattering with scattering cross 16 p2720 N68-27187 Kinematic singularities in helicity amplitudes and Regge poles in elementary particle interactions 16 p2720 N68-27236 Interference effects and nucleon resonances for egative pion-proton elastic scattering 16 p2721 N68-27345 n bremsstrahlung cross [ANU-P/407] 16 p2723 N68-27688 16 p2724 N68-27836 tial cross or elastic scattering of in of Regge pole theory ns by protons, and appli ifferential cross section 16 p2724 N68-27839 ryon scattering in broken SU/6/ symmetry [JINR-P2-3758] 16 p2726 N68-27956 oulation to explain per-crential scattering cross Transition probabilit irbation effects in ela (NASA-CR-95344) 16 p2727 N68-28005 nese, indium, and Activation cross se (WANL-TME-1746) 16 p2728 N68-28068 on data for spacecraft ng radiation dose effect fuclear reaction cross old design, and for dete (NASA-CR-85201) 17 p2922 N68-28333 attering in imperfect fer-Thermal seu romagnetic crystals [ITF-67-45] 17 p2952 N68-28395 Mass spectra and difference scleon isobar production in p tial cross section ons for ton-proton reactions 17 p2924 N68-28434 tohydrodynamics, and n acoustic wave 17 p2947 N68-28479 ics, and attering cross sections, angular distributions, in resonances and particle production in proton-on reactions Scattering cross ns for low energy elastic scat-Scattering cross sections for ring of sigma hyperons in hyd ogen 17 p2928 N68-28652 ctrum analysis and cross sections for formation of ons from Li g/p,d/Li 5 and Li 6/p,pd/He 4 reac-17 p2928 N68-28665 ring wave functions and cross sections found in R-matrix theory to potential scattering to study nuclear reactions Scattering wave function 17 p2929 N68-28672 orn approximation and wave functions, and peak-approximation for Coulomb Born matrix shown to apprecent excitation and ionization cross sections in esent excit INASA-TM-X-63269 17 p2931 N68-28894 cross sections and wave production by kaons on proto [UCRL-18131] d wave analysis in single pion

17 p2931 N68-28937

[GA-8280] sections with pion exchange mode [COO-1051-21] Cosmotron high energy beams and proton-proton eactions, proton elastic scattering, cross sections, and [BNL-12344] vior of cross sections of elastic and ch to study of total cross sections ORNL-42521 determination of resonant charge section of thermal velocity mercury gly charged mercury ions over two decade energy range (NASA-CR-72398) cular beam apparatus for elustic scattering Compton scattering fro age 550 to 1130 Mev ard scattering d (AECD/TP-22) LNF-68/33) LNF-68/251 um atoms with his [CALT-532-17] Computer program to of fusion length and group or [LA-3893] PADC-TR-68-11) [DESY-68/18]

measurements of vector hydrogen at energi meson photoproduction from 6.5 GeV to 17.8 GeV [SLAC-PUB-439] 20 p3549 N68-33320 21 n3646 N68-33637 on classical m NASA-CR-89217) 21 p3736 N68-33888 EURATOM 21 p3739 N68-34155 nuclear research act [EANDC-/E/-89U] Evaluation of be m, alpha/ cross section and branching ra (EUR-3950.E) 21 p3740 N68-34319 oxygen muclei 21 p3740 N68-34320 Particle scattering cro Absolute cross section rays from aitrogen 14 for [ORNL-TM-2267] m of go 21 p3741 N68-34413 inverse power po (BNL-50102) 21 n3745 N64-34642 or spin orbit electron ing Regge trajectories and scattering or [TH/68/18] 22 p3927 N68-35189 n from 0.001 to 100 22 p3929 N68-35414 Numerical method for radar cross section of ge conducting body [MTR-431] 22 p3835 N68-35486 cattering for plant (ORNE-TR-1952) 22 p3930 N68-35544 and applicability to cl [JAERI-1162] ALGOL procedure for stants from 26-group syste [KFKI-14/1968] as sections of oriented IN-11511 22 p3932 N68-35680 Meson-baryon and reggeized SU/6/ theory [IC-68-43] n-baryon scattering in 22 p3933 N68-35702 23 p4113 N68-36150 tron at 2.10 BeV/c and nega-cattering at 1.89 and 2.10 23 p4114 N68-36213 tivity or scattering cross function of incidence and [NASA-TM-X-61291] 23 p4020 N68-36499 Computation energy loss of pr [RHEL/R-153] 23 p4118 N68-36639 for reaction helium-m 55 to 165 MeV 23 p4120 N68-36750 4/gamma_proton/t [COO-1195-131] (RPP/H-31) 23 p4121 N68-36825 23 p4127 N68-37021 IIC-68-66] 23 p4128 N68-37028 otoproduction event of a bubble chambers 23 p4133 N68-37(97 Total cross se (DESY-68/31)

g at 180 degrees Colsies 23 p4136 N68-37388

5

-

P

2.87

ы

10

K

[A

protein [N

SCIE

EN.

SCIM

U

[AB

Neutron elastic scattering cross section studies of in-termediate resonances 24 p4306 N68-37498 Time reversal invariance test by measuring reaction slange of radioactive decay 24 p4308 N68-37561 Elastic and charge rearranging differential cross secons for collisions of hydrogen ions with water 24 p4310 N68-37631 Theory of Regge pole model for relating particle collinions to exchange processes [CERN-68-31] 24 p4314 N68-37781 Intermediate excitations in deuteron stripping reac-[JINR-P4-3872] 24 p4316 N68-37953 Optical model computation technique for neutron and proton scattering in MeV region [RE-344] 24 p4316 N68-37973 Inelastic collisions of electrons with atoms and molecules [AFCRL-68-0299] 24 p4318 N68-38115 Experiments for measuring full cross sections of in-teraction between elementary particles and nucleons on superhigh energy accelerators 24 p4319 N68-38186 Experiments for measuring cross sections of elastic scatter of mesons, nucleons, and antinucleons by nucleons on superhigh energy accelerators 24 p4319 N68-38187 Effective cross sections of electron scattering by neutral atoms in gas discharge of cesium-helium and cesium-argon plasmas [FTD-HT-23-919-67] 24 p4326 N68-38294 SCATTERING FUNCTIONS Construction of normalization functions for bounded scattering matrix 07 p0979 N68-16989 Discrete ordinates representations of scattering ker-[NAA-SR-12493] 10 p1563 N68-19663 Legendre polynomial expansion of scattering integral in Boltzmann equation for calculation of deep penetration of iron [BNL-12322] 15 p2518 N68-26359 Partial-wave analysis in terms of SL/2,C//SU/2/ har-[IC-68-63] 23 p4131 N68-37156 SCATTERING MATRIX U S MATRIX THEORY SCAVENGING Precipitation scavenging of submicron particles, and inertial and electric effects [BNWL-SA-1402] 02 p0232 N68-11437 Recoil reactions of atomic carbon, and carbon 11 recoil product yield dependence on radiation dose and (IS-T-216) 17 p2845 N68-29354 Breathing and scavenging of four stroke diesel en-18 p3158 N68-30389 Precipitation scavenging of subr bmicron particles 24 p4289 N68-38416 Artificially placed tracers for study of scavenging by 24 p4289 N68-38418 (PUBL -1311 SCENEDESMUS Ultraviolet radiation effects on photoreactions of treen algae, chloroplasts, and quinones isolated from [RLO-1783-13] 07 p0944 N68-16502 U SELF CONSISTENT FIELDS SCHEDULES

COUNTDOWN SCHEDULING Dynamic programming used to find sequence which inimizes total processing time for parts on three equential machines - optimal scheduling 01 p0042 N68-10312 aling and allocation in computer facilities 04 p0483 N68-13399 On-line simulation in on-line process synthesizer

06 p0809 N68-15447 Control of periodic aircraft maintenance through re-(AD-664374) 09 p1270 N68-18713 Calculus of variations used in design optimization chinique to permit tradeoffs between costs, effectivess, and scheduling 10 p1511 N68-20497 Zero-one linear programming formulation of acheduling problems for wide range of conditions [P-3800] It p1733 N68-21665 Costs and scheduling data for development of hybrid propulsions systems - planning manual [NASA-CR-66598] 12 p1961 N68-22300 Mathematical formulation of sequencing and heduling problems 13 p2093 N68-23376 Statistics on activities of scheduled air taxi operators /October 1967/ [AD-667603] 14 p2183 N68-24484 Multiproject scheduling system using forecasting and quencing technique 14 p2377 N68-25125

Ground term energy levels and crystal field parame-ters of terbium in scheelite crystals [HDL-TR-1367] 10 p1577 N68-19891

Transmittance and reflectance of thin films of the clite and walfenite for infrared filters ed filters 10 p1579 N68-20132 [OR-6]

SCHLIEREN PHOTOGRAPHY

Strip film schlieren interferometry for simultaneous observation of shock wave patterns and condensed gas determined in nonsteady expansion of combustion products 02 p0286 N68-11668

Schlieren photography of gas stream formation be-hind shock waves discharged from shock tube nozzles 06 p0831 N68-16037 Laser application in schlieren photography, bal-listics, cinematography, holography, and interferomet-ric velocity measurements ric velocity me [ISL-T-31/66]

07 p1004 N68-16152 bined schlieren, and reflection imagery for improved differential analysis [ISL-T-30/66] 07 p0994 N68-16153

Color screen method using transparent filter to give visual presentation of index of refraction gradient of sollieren images (NIC-TRANS-2514) 09 p1340 N68-18505

Comparison of schlieren and phase contrast methods for visualization of aerodynamic flow at hypersonic 12 p1877 N68-22814 [NASA-TT-F-11509]

Surface pressure distribution estimate from observed abock wave envelopes surrounding conical body in supersonic flow using schieren photography [NPL-AERO-1244] 13 g1949 N68-24131

Double pass schlieren photography used to study shock waves and flow patterns in shock tubes [SUFFIELD-MEMO-54/67] 14 p2253 N68-24374

Shock front propagation and nonlinearity of poro bsorbers in interaction of air flow and sound in du-oundary layer measured with schlieren photography boundary layer measured w [AMRL-TR-67-120, V. 1]

15 p2510 N68-26451 Shadowgraphs, schlieren method, phase contrast, and differential interferometry used to evaluate holograms of moving phase shaped objects [SL-1/68]

Detonation wave propagation, drop size effects on elocity, and streak schlieren photography on drop hattering in liquid fuel-oxygen mixture NASA-CR-72421] 18 p3188 N68-30206 shattering in liquid fu [NASA-CR-72421]

Schlieren photography and hydraulic analogy study of behavior of pressure waves in branched ducts 21 p3679 N68-33846

SCHMIDT NUMBER

Turbulent high Schmidt number entry region mass ansfer in annuli 13 p2054 N68-24019

ted supplement to secondary level Space orientated geometry textbooks [NASA-CR-90075] 01 p0136 N68-10822

SCHOTTKY EFFECT U WORK FUNCTIONS SCHROEDINGER EQUATION

Analyticity properties applied to numerical solution of Schroedinger and Bethe-Salpeter equations [UCRL-17652] 01 p0106 N68-10445

Numerical solutions of Schroedinger equation with screened Coulomb potential for bound electronic states in hydrogenic ion [NRL-6556] 02 p0243 N68-11223

Program for solutions to radial Schroedinger equa-tion of bound system of two particles, including wave functions and binding, kinetic, and potential energies (AECD/TP-16) 03 p0386 N68-11994

Method for calculating one-particle states of deformed nuclei using realistic diffusion potential [JINR-E4-3453] 05 p0715 N68-14598 Uniqueness theorem for partial differential equation and representation of potential scattering operator MRC-TSR-783] 06 p0863 N68-15533 and representation [MRC-TSR-783] Quantization integral for computing eigenvalues of throedinger equation by Wentzel Kramer Brillouin

07 p1037 N68-16947 Partitioning method for calculating lower bounds to eigenvalues of Schroodinger equation 14 p2309 N68-24932

Asymptotic behavior for number of bound states of ven potential in limit of large coupling using Schroed-(REPT.-68/16) 18 p3130 N68-29963

Asymptotic behavior of eigenvalues of Schroedinger (TG-230-T547) 18 p3135 N68-30539

Electronic energies of one, two, and three electron olecules of hydrogen and helium from approximate olutions of Schroedinger equation 20 p3551 N68-33519

Condition for discreteness of negative spectrum of Schroedinger operato [APL-CLB-3-T-554] 22 p3901 N68-35479

Coupled-channel Schrodinger equation model for eutron-alpha deuteron-triton scattering 23 p4115 N68-36309

Hydrogen atom levels and Coulomb scattering am-itude calculations using S matrix and Schroedinger (REPT.-68/19) 23 p4119 N68-36684 SCHUMANN-RUNGE BANDS

Absorption coefficient analysis for oscillator strength of Schumann-Runge band system in molecular oxygen [ADP-44] 10 p1493 N68-20337

SCHWARTZ METHOD

Extending Schwartz-Pick lemma for one complex variable to bounded homogeneous Siegel domains of second kind [MRC-TSR-796] 11 p1731 N68-21473 SCHWARZ-CHRISTOFFEL TRANSFORMATION

Special functions to express nucleus of Schwarz for-mula for canonical regions [NASA-TT-F-11673] 13 p2093 N68-23475

SCHWARZSCHILD METRIC

Counterexample to Tangherlini argument leading to Schwarzschild metric without use of field equations [NASA-CR-95733] 17 p2922 N68-29559

SCIENCE Impact of modern science and technology on society 03 p0429 N68-12082

Soviet scientific and technological progress in 1966, and utilization of science for improved national econo-INASA-CR-92570) . 06 p0930 N68-15774 Federal supported academic research for education, economy, and public benefit [NASA-CR-85721] 14 p2377 N68-24924

TERMTRAN - programming system for engineering and scientific calculations via remote terminals. [K-1735] 15 p.2431 N68-25709 Institutional grants by Federal Government for science research programs and science education 16 p.2799 N68-27743

SCIENTIFIC SATELLITES
NT APPLICATIONS TECHNOLOGY SATEL-LITES

Reliability of network and circuit teletypewriter of Manned Flight Communications Network and Scien-tific Satellite Communications Network [NASA-TM-X-60571] 01 p0031 N68-10743

Satellite measurements analyses of daytime ozone profile latitude [TR-0158/3260-10/-2] 04 p0499 N68-13073

urements over equatorial regions TR-0158/3260-10/-1] 05 p0655 N68-14857

Airborne and spaceborne systems for earth resource (P-3753) 06 p0929 N68-15094

Conference papers on Swiss national space program including scientific satellite applications
06 p0929 N68-15226 OV-1 general purpose orbital vehicle for scientific experiments 07 p1079 N68-16380 υĺ

æ

3

o

2

ı

9

9

9

ø

g

3

iR

SUBJECT INDEX [AFCRL-67-0689] ron density research using satellites 08 p1170 N68-17858 Proportional counter solar X-ray spectrum du [TR-0158/9260-02/-1] d spectrometer analysis of satellite polar orbit 08 p1234 N68-18040 ed electrons at low and high al-illite and Explorer 26 satellite 08 p1234 N68-18182 titudes by 1963 38C sat [NASA-TM-X-63121] Design, and develope AFCRL-67-05611 09 p1302 N68-18396 Data collection and p (NASA-TN-D-4508) 12 p1846 N68-22510 Digital data quality mon data transmission system app [NASA-TM-X-61062] r for Nascom network 13 p2030 N68-24154 lems in Goddard scien-High voltage breakdown prob 15 p2442 N68-26877 Scanning celestial attit small scientific satellites [NASA-CR-95807] ination system for 18 p3112 N68-29763 Development of magne damper for scientific satelli [NASA-CR-94173] etic fluid viscous oscillation 18 p3180 N68-30485 Solar cell battery power system of satellite to demon-strate two and three axis gravity gradient stabilization using magnetic and hysteresis damping techniques [TG-978] 18 p3007 N68-30713 Electronic design of camera system for DODGE [TG-963] 18 p3079 N68-30820 Design of ESRO scientific satellite for gamma ray ex-erimentation and radiation spectra measuring instru-19 p3372 N68-31221 Instrument sets, signal conditioners, and field sup-port and integration of instrumentation for OVI-13 satellite [ASE-1929] 19 p3277 N68-31467 Scope and problems of readying extraterrestrial ological experiment for launch and flight and flight 19 p3212 N68-32137 Soviet and NASA space p terms of military and scientific [FTD-MT-24-121-67] ce program comparisons in bjectives 20 p3613 N68-32382 vanced instrumentation and data systems for data ition, processing, and reduction of satellite infor-20 p3479 N68-33177 Objectives of investig ciated with multiple experiment scientific [NASA-TN-D-4731] 21 p3797 N68-33682 Ringing irregularity [AFCRL-68-0263] 22 p3872 N68-35778 Method for corre (AFCRL-68-0195) e and gravimetric data 22 p3873 N68-35938 Computer programming for control of complex data processing operations involved in analysis and interpretation of large volumes of sensor data from scientific assembles. [NASA-CR-1107] 23 p4029 N68-37254 SCIENTISTS Regional distributions of federal research and evelopment funds compared with distributions of cientists engaged in R and D activities 06 p0929 N68-15482 Manned and unmanned cientists for space missions, and Apollo science programs ed space research, training ns, and role of man in Gemini 10 p1596 N68-20387

scientists engaged in [NASA-CR-91657] Labor market and salaries of engineers and scientists mployed by government, industry, and universities NASA-CR-93776] 10 p1617 N68-20483 employed by government, is [NASA-CR-93776]

Ideas on scientific experimentation and teaching of science [LA-3827] 11 p1807 N68-20990 Brief description of Marshall Space Flight Center ad interview with director and interview with din [NASA-TT-F-11480] 21 p3798 N68-34733 Role of engineering man cation requirements and his continuing edu-24 p4356 N68-37665 SCIMITAR AIRCRAFT

Unsteady wing root strain on solid Scimitar model measured to determine buffeting scale relations [ARC-CP-954] 12 p1814 N68-22655 SCINTILLATION

Project Twinkle - aerodynamics and bullistics of packe-Dart and Tomahawk-Dart rocket and

parachute systems used to study atmospheric causes to starlight scintillation /twinkling/ 04 p0584 N68-13598

s for desimetry of X radia-(REPT.-11-42-67) 05 p0706 N68-14123 aphere using VHF

radio signals from Early B [AFCRL-67-0655] 11 p1658 N68-20656 11 p1754 N68-21136 [UCRL-TRANS-10166]

low level turbulence 13 p2078 N68-23125 (CRREL-RR-225)

es of thin vacuum deposite Scintillation characteristics of layers of sodium iodide and cer

(UCRL-70773) 14 p2335 N68-25492 Relationship between high latitude radio star scintil-lation data and riometer ionospheric absorption [D1-82-0702] 16 p2657 N68-27908

Amplitude of radio electric field of satellite at orizon of receiving station 17 p2851 N68-29088

ations and spread-F de-ette I satellite 17 p2879 N68-29094 Auroral zone radio star scintillation measurements d interpretations

17 p2879 N68-29097

Simplified method for scaling ionospheric scintil tion index [AFCRL-68-0138] 18 p3068 N68-304 18 p3068 N68-30407 n investigation using automatic data processing (WRE-TN-APD-11)

18 p3068 N68-30408 lonoupheric electron den scintillations from Faraday satellite radio signals [AFCRL-68-0314] ty, slab thickness, and polarization of beacon

19 p3268 N68-31078 Coincidence detector for scintillations of gamma rays [INP-605/PL] beta radiation registering 20 p3483 N68-33495

Effect of heat currents on scintillation of liquid heli-

23 p4185 N68-36054 Scintillation of liquid helic m at various temperatures 23 p4108 N68-36708

SCINTILLATION COUNTERS

Organic scintillation dete tectors for measurement ity factor in mixed neutr INR-785/XIX/D) 01 p0102 N68-10166

Method of absolute ment using scintillatio [INR-799/XIX/NT] rces activity measurein fixed geometry 01 p0102 N68-10167

Energy scale for pulse height distributions from amma ray spectrometers based on inorganic scintillators IORNL-41181

01 p0103 N68-10235 Liquid scintill n counter for measuring alpha ac m 233 tivity in uranius 01 p0024 N68-10765

Relationship betw tion counter data an spark chamber exper [LNF-67/62]

01 p0036 N68-10998 ers for studying angular distribuions of protons in /e,e'p/ experi

02 p0214 N68-11795 Liquid scintillator metho neutrons produced in therm of uranium and plutonium is [AAEC/E-172] od for measuring prompt nal neutron induced fission 03 p0389 N68-12332

Neutron detector with electron synchrotron used to essure cross sections for neutron production from 03 p0395 N68-12626

Scintillation counter for measuring pulse height response of fast neutron detector in flight path of linear [EGG-1183-2100] 03 p0398 N68-12732

Balloon-borne scintillation counter and counter telescope for measuring X rays and solar ultraviolet radiation is stratosphere auroral zone [REPT.-10/1963] 04 p0303 N68-13623 04 p0503 N68-13623

nt for differential gamma spec-dide scintillator 05 p0624 N68-14533 tion counters based on electro [JINR-P13-3523] is for spectometric sciatilla-troluminescent diodes 07 p0994 N68-16131

of plastic scinimizations 07 p1045 N68-16587 IEGG-1183-21581 on Cen MeV/nucleon [NASA-CR-92991] 07.p1076 N68-16723

Pulse height and pulse sounding rocket flight of d [NASA-CR-92683] Fast neutron conter and p

[LGI-66/14] 08 p1178 N68-17648 liciency of sodium iodi ter for gamma rays of cess adiation geometry 170721 -thallium scintillation m. 137 and cobalt 60 in counter for g free radiation [NP-17072] 08 p1224 N68-17673

Temperature dependence of itude in CsI-TI and KI-TI cry 08 p1227 N68-17997

AE-3101 10 p1528 N68-19574

ory for a [SC-T-68-1502] 11 p1782 N68-21206

System for auto tillation chambers [RT/EL/67/13] rsis of photographs of scin 11 p1698 N68-21348

Intensity and time variectrons measured wi of primary counic ray lloon borne Cerenkov andwich detector 11 p1780 N68-21534 (NASA-TM-X-63162)

eponse for use in sc NASA-CR-942441 12 p1848 N68-22064

ente Carlo code for ci iting pulse height dis-neutrons incident on ORNL-4160] 12 p1929 N68-22543

Design and operat system for measuring [GA-8184]

12 p1878 N68-22834

monitor for continuo noble gases arous measurement nuclear faciliti (BNL-12154) 14 p2257 N68-25049

ct in resonances of neutron-gamma red with film-type scintillation counter 14 p2318 N68-25417 [IAE-1349] Tests of box

inters for slow neutrons [CNEA-206] 14 p2220 N68-25652 restions with Cereako

Atmospheric lun omic ray showers e analysis for detection of 15 p2555 N68-26594

Computer program for effect of optical parameters on scintillation detector properties
[UUIP-568] 15 p2470 N68-26758

BNWL-SA-1515] 15 p2470 N68-26790 Limitations of paired desolved gamma ray exp

[HDL-TM-68-1] 16 p2659 N68-27049

Scintillation counter and di study long range order in titanius n-iron 16 p2677 N68-27280

16 p2662 N68-27557 [155-67/40]

ryon non-conserving Decay rate and fragments foucieon decay testing law of h 17 p2923 N68-28388

igh altitude nuclea d rocket Orion 2 & tection of fast neutrons a [SC-T-66-1514] 17 p2876 N68-28394 or with scintillator and igh altitude balloon in

Cosmic gamma ray detects vidicon spark chamber in hi search for celestial gamma ray ([NASA-CR-95736] 17 p2964 N68-29434

Preparation of KUTV in operating scint gamma ray spectrometry [NP-17352] 18 p3075 N68-30328 rometer using scin

(NYO-3914-11 18 p3075 N68-30346

radiation detection system to measure neutron spectra [NYO-3914-2] 18 p3076 N68-30349 ution counters and design of scalers
18 p3076 N68-30421 n by resin paper ion cintillation counting 19 p3223 N68-31272 Plutonium 239 detern exchange separation and liquid so INDL-TR-971 High charge resolution scintillat in counter counic ray telescope [ADP-53] 19 p3279 N68-31696 Scintillation ga eter mounted in lunar ation of lunar rock 20 p3586 N68-32681 probe to investigate game NASA-TT-F-11895) FORTRAN 4 program for peak location and peak nergy measurement in scintillation spectrometry ion spectrometry 20 p3429 N68-33041 (AAEC/TM-437) OGO-A scintillation of er to detect 3 to 90 MeV protons in solar coamic rays [NASA-CR-96278] 20 p3591 N68-33302 Detection of supernovae telescope and atmospheric scin [NASA-TN-D-4732] pulse by gamma ray stillation method 20 p3582 N68-33370 Cosmic ray search for fast magnetic charges by com-aring scintillation pulse amplitudes 21 p3760 N68-33689 tage intensifier photography of simulated showers in large-area of plasti [NASA-CR-87752] 21 p3693 N68-34489 Spectrometric measurement of bremsstrahlung produced by thick gold-tungsten target during electron [CONF-680706-1] 22 p3935 N68-35838 Plasma dynamics, Mach-Zend bremastrahlung, fast scintillators, ar [SIT-2582-25] Mach-Zender interferometers, scintillators, and theta pinch 23 p4141 N68-36669 Effect of ionizing particles on photomultiplier [ESRO-SM-72] 23 p3995 N68-37035 SEGO, computer code for unfolding scintillation nalse height spectra to get incident energy spectra [NASA-CR-97254] 23 p4129 N68-37068 Experimental results on quenching of light flashes in liquid acintillators by decaying electric field [JINR-P13-3894] 24 p4303 N68-38029 Dynamic response of X ray fluorescence isotepic spectrometer with lithium-drifted silicon detector [USNRDL-TR-68-77] 24 p4260 N68-38482 SCINTILLATION SPECTROMETERS
U SPECTROMETERS SCINTILLATORS
U SCINTILLATION COUNTERS SCINTILLOMETERS
U SCINTILLATION COUNTERS CESSION U CLEAVAGE SCORPIO CONSTELLATION
U SCORPIUS CONSTELLATION SCORPIUS CONSTELLATION X ray survey of spectral em of Cygnus and Scorpio regions [NASA-CR-80280] n and X ray sources 07 p1075 N68-16118 SCOUT LAUNCH VEHICLE Feasibility study and capability evaluation of 44-inch first stage rocket motor for Scout vehicle [NASA-CR-66528] 04 p0568 N68-13839

Height, weight, payload, stages, thrust, engine type, propellant used, and type guidance systems for Scout, Delta, Thor-Agena, Atlas, Gemini, and Saturn launch [NASA FACTS 8-12-67] 06 p0915 N68-15240

Mission goals and general launching of solar Explorer B satellite [NASA NEWS RELEASE-68-36] 07 p1084 N68-16204 ion goals and general information on projected ing of solar Explorer B satellite

Trajectory optimization and linearized pitch com-puter program for Scout launch vehicle [NASA-CR-66515] 08 p1243 N68-18185 Dynamic structure and stress analysis of Scout launch vehicle with 44 inch ALGOL engine [NASA-CR-66545] 09 p1414 N68-18971

Vehicle instrumention and ground support equip-nient development to improve vertical and roll align-ment of Scout Issunch vehicle [NASA-CR-6609] 12 p1875 N68-22645

Error sources and their magnitudes in Scout launch vehicle data [NASA-CR-66596] 14 p2352 N68-25396 Electrostatic poten Scout vehicle S-131R (REPT-000TP001) sors for use on NASA 15 p2444 N68-26887

nition harness postflight analysis -ered using connector separation for 15 p2447 N68-26907

SCR [RECTIFIERS]

U SILICON CONTROLLED RECTIFIERS

SCRAMJET ENGINES
U SUPERSONIC COMBUSTION RAMJET EN-GINES SCRAMIETS

SUPERSONIC COMBUSTION RAMJET EN-

GINES SCREEN EFFECT

Effects of foreground ridge on antenna gain and pat-03 p0320 N68-11995 [AFCRL-67-0454] Effect of screening surface on instability of negative mass type [JINR-P9-3476-2]

07 p1036 N68-16776 Screening of high-density plasma from neutral gas enetration in closed and open-ended reactor systems raded reactor systems 12 p1947 N68-22189 REPT.-68-06]

Dielectric formulation for inhomogeneous electron gas, and Green function formalism for treating static dielectric acreening of point impurity in electron gas [NASA-TR-283] 13 p2140 N68-24273

Wicks covered with fine screen for capillary action in high performance heat pipes [LA-DC-9027] 16 p2797 N68-28025 SCREENS

Rigidized woven screen material study for gravity gradient boom and antenna [NASA-CR-92680] 07 p0967 N68-17090 SCREW DISLOCATIONS

Prismatic cross-slip of dislocations in vicinity of IS-TRANS-71] 05 p0698 N68-14132

Finite deformation of rotational and screw disloca-tions examined with nonlinear theory of elasticity 16 p2775 N68-26991 Hydrostatic pressure effects on screw dislocation velocities in single crystals of lithium fluoride at room

17 p2952 N68-28376 oretical investigation of screw and edge dislocana in binary system 18 p3151 N68-29878

Crystal growth, edge nucleation, and screw disloca-tions in in crystals grown from Pb [TR-0158/9230-03/-2]

18 p3156 N68-30846 Stress induced edge and screw dislocation velocities in zinc observed by etch pitting 19 p3290 N68-31002

SCREWS

Extrusion without external heating or cooling of extruders during operations [AD-656387] 01 p0068 N68-10156 Infrared thermometers for evaluating performance f extruder screw designs of extruder scre [AD-661401] 04 ±0515 N68-13300 Dynamic loosening effects on screwed mits, and ireaded boits 06 p0917 N68-15047

SCRUBBERS

Absorption of sulfur dioxide by ammonium sulfite-binuffite solution in spray-type venturi scrubber [TVA-P-4260] 19 p3228 N68-31643 Aerodynamic characteristics of ve of venturi scrubbers 19 p3195 N68-31653 [NPL-AERO-1235] Flow characteristics of gas scrubber at high flow velocity of helium [WRE-TN-DWD-12] 19 p3259 N68-31665 SCYLLA

Scylla experiments on controlled thermonuclear 11 p1753 N68-20948 [LA-3831]

SDP [COMPUTERS]
U SITE DATA PROCESSORS SEA LAUNCHING

Test facilities for determining hydrodynamic con-teristics of missile launching in water 07 p0986 N68-16795 ng hydrodynamic charac-

SEA WATER

Flame infrared sp ometer for detecting 01 p0065 N68-10690

Seawater corrosion measurements of emissively-coated Haynes 25 alloy using radioactive tracer techniques [USNRDL-TR-67-109] 02 p0221 N68-11359 ed freezing sea spray 03 p0383 N68-12118 icing of cylinders in simu (NRC-9782) Nuclear power systems applied to purification of sea [TRG-1536/R/] 04 p0466 N68-13062 Cerenkov detector for meson intensity measurement in deep sea [NOO-TRANS-378] 04 p0509 N68-13243 Sea water stress corrosion of tling constituents in titanium-al [NSRDC-2483] dependence on embrit-luminum alloys 04 p0521 N68-13250 on cracking of titanium-aluminum al-Stress corrosion crack bys in sea water environs 04 p0521 N68-13353 Hydrological charts of Black Sea during fishing NOO-TRANS-362] 06 p0841 N68-15842 Current flow and effect on water temperature in Sea of Japan (REPT.-358) 06 p0841 N68-15862 ion exchanger for extracting trace elements from sea [USNRDL-TR-67-129] 07 p0958 N68-16693 Sampled data and correlation methods for determining surface and bottom drifts of continental shelf water off Chesapeake Bight

Radioactive tracer analysis on erosion-corrosion resistance of cobalt alloys exposed to sea water
[USNRDL-TR-67-142] 08 p1188 N68-18200 Chemical reaction between ru [PG-819/W/] othenium and sea water 09 p1294 N68-18736

08 p1175 N68-18177

(1

10

100

de

ky

ten [N

Geological structure of ocean floor, wind profile stu-dies, sea water circulation, and other oceanographic research in U.S.S.R. 09 p1335 N68-19170

Heat transfer processes, and temperature fluctua-tions over Pacific Ocean surface [PB-176578] 10 p1551 N68-19518 Effects of variations in salinity and temperature on estuarine macroalgae

10 p1468 N68-20238

Vanadiums effect on hot corrosion of superalloys in marine environments [REPT.-4956-68R] 11 p1712 N68-20994

Determination of ruthenium, cerium, and zirconium dioactivity of sea water by carrying over and adsorp-on using manganese dioxide (CEA-R-3284) 11 p1689 N68-21264

New instrument /thermokosa/ for continuous, synchronous measurement of sea water temperature variations at different levels (JPRS-45050) 11 p1694 N68-21709

Oceanographic studies on sea water and wind mea-urements, test facilities and services, and instruments sed in Soviet Union 12 p1868 N68-22482

Inverted barometer effects and steric changes effects on hydrostatic response of ocean [NASA-CR-94354] 12 p1869 N68-22769

Effect of monomolecular surface films on production of condensation nuclei from bubbled sea water [NRL-6672] 13 p2099 N68-23753 Mineral resources of ocean, underwater research facilities and photography, and economic and other aspects of oceanography reported in Soviet-bloc literature

14 p2245 N68-24533 Radioactivity in atmospheric surface layer over northern part of Indian Ocean, isotopic composition of agrosols and sea water, and effects of rains on fallout and air activity

14 p2249 N68-24963 Seamless titanium tubing for flash evaporator used in sea water environments

15 p2482 N68-25971 Electrochemical corrosion rate measurements on galvanically coupled SNAP 21 materials in sea water [USNRDL-TR-68-26] 15 p2484 N68-26411

Oceanographic survey data on northeast Atlantic region, including velocity profiles, core physical properties, temperature-salinity, and bottom photographs [SP-95-2-6]

Separation of traces of metal ions from addium matrices such as sea water [ANL-7421] 16 p2614 N68-28160

Concentration of dissolved and nonliving particulate organic carbon in sea water [NYO-3862-7] 17 p2877 N68-28963

X

39

62

emt

43

is-

50

al-

53

ng

42

62

93

77

re-

er 36

70

18

on

38

in

64

us, ire

09

ea-nts

82

cts

69

on 53

rch

33

63

71

OH

111

re-

134

um

60

Oceanographic research in Soviet-bloc, including water temperature measurement, tidal map, and sea diffusion 18 p3069 N68-30544 Corrosion prevention of calcium-magnesium sings formed on iron and steel surfaces in sea water during cathodic protect [FTD-HT-67-233] 18 p3096 N68-30807 are, and salinity measured al stat 19 p3271 N68-31514 cal model for analysis ne effects on sea breeze of coast line [REPT.-15] 19 p3304 N68-31657 Developments in cases hermometers and oceanograph instruments for underwater ation of deep sea reversing ing instruments fo [NUWC-TP-27] 19 p3259 N68-31725 Biology and ecology of invertebrate and algae (PB-177767) 19 p3210 N68-31737 Effect of sulfate redi cing microorganisms on sea water corrosion of steels [NBS-9846] 19 p3294 N68-31753 Aerial color photography plar radiation incident and of oceanic surface and reflection measurements 20 p3478 N68-32722 ISERG-TR-021 Molecular compe of nitrogenous organic compounds in sea water NASA-CR-96378) 20 p3473 N68-33243 Sea water waves and wind stress effects on surface roughness at air sea interface [TR-231-18] 22 p3904 N68-35294 ge angular redistribution of radar surface, and applying method to air-ent of sea state Sensing average a return from sea surfa borne measuremer [NRL-MR-1884] 22 p3836 N68-35563 Improved inert-cathode/s hattery [NRL-6715] 23 p3993 N68-36435 Salinity of ocean water and sea ice and ice formation from sea water [NOO-TRANS-370] 24 p4250 N68-37757 SEALANTS SEALERS

Flexible urethane lacquer sealant for corrosion pro-tection of aircraft surfaces [AD-665683] 11 p1717 N68-20734

SEALING NT SELF SEALING

Window seals for ultrahigh vac (REPT.-67-C-165) 14 p2263 N68-24502 Peel adhesion and air stream tests of 3M Y-9050 tape for sealing openings at intertank to Y-ring joints [NASA-CR-61810] 15 p2475 N68-26806 Aging rate of coldweld se tors in single sideband units [ECOM-2946] aled quartz crystal resona-

18 p3046 N68-30071 Aeronautical engineering studies stability of degenerating conical shells, pressure sealing of hydraulic equipment, convective heat exchange of gas turbine disks, and vibrating profile flow [FTD.MT-24-131-67] 20 p3538 N68-33261

Pressure calculations for sealing groove of hydraulic 20 p3490 N68-33263

SEALS (STOPPERS) NT GASKETS

HERMETIC SEALS O RING SEALS

PACKINGS [SEALS] PUMP SEALS

Rall bearings and bellows face seals for supersonic transport lubrication systems [NASA-CR-54311] 04 p0516 N68-13547 Comparison of gas film mai contract seals for high tempe high pressure gas turbine appli [NASA-CR-72338] nshaft seals with rubbing trature, high speed, and

05 p0666 N68-14172 Performance of inerted lubrication system for high

[NASA-TM-X-61086] 13 p2073 N68-23409 Gold wice seals for ultrahigh [PB-177429] 13 p2074 N68-23583

Window seals for [REPT.-67-C-165] 14 p2263 N68-24502 stator, and vane pivot Development of co thing engines 17 p2895 N68-29320 Ball bearing and bellows face seals for Mach 3 air-craft turbine engine mainthafts tested using jet lubrica-tion and inert gas blanketing [NASA-CR-72424] 20 p3489 N68-33027

Flow and temperature fie alinger scal [NASA-CR-83016] eld analysis of a plane disk 21 p3697 N68-34280

on of seal design 23 p4067 N68-36254 Testing and evaluation [NASA-CR-97143]

Development of low leakage rate seals for advanced air breathing engines [NASA-CR-54628] 24 p4260 N68-37608 24 p4260 N68-37608

SEAPLANES

Rocket engine technol propelled gliders, and scap [NASA-TT-F-11430] ology, rocket planes, rocket - history 04 p0444 N68-13574 History of early lanes and associated

04 p0445 N68-13578 Nonlinear theory for heave, pitch, roll, and surge of cylindrical-float supported aircraft on water [TR-513-3] 15 p2387 N68-26747

tive data correlati on for seaplane water akeoff and landing design tech REPT.-7489-21 ology 21 p3622 N68-33675

SEARCH RADAR

Cost versus performance relationships for phased (RM-5380-PR) 08 p1148 N68-17916 chanical scanning system

16 p2626 N68-27940 Portable military charger to support ground surveil-lance radar zinc-silver oxide batteries [ECOM-2988] 22 p3809 N68-35948

Search time of periodic pulse sequence in pulse flux sing triggers 01 p0044 N68-10326

Computer search services for transfer of aerospace related technology to industry [NASA-CR-89992] 01 p0155 N68-10670

Photoelectric scanning and tracking using method [FTD-MT-67-68] ces of automatic search sonal element scanning 03 p0332 N68-12265 Optimal adaptive search

12 p1845 N68-22188

BALTIC SEA BERING SEA CARIBBEAN SEA MEDITERRANEAN SEA

Radiative heat transfer in surface layers above occums and seas [FTD-HT-67-415] 02 p0204 N68-11181

Water waves conditions forecasting techniques [WBTM-TDL-13] 04 p0533 N68-13296 Current effect on ice distri lation of water in Barents Sea [NOO-TRANS-349] ution and general circu-

06 p0839 N68-15718 Spatial geometry and dysomogeneities in seas ics of temperature in-

[JPRS-45104] 11 p1695 N68-21823 Marine climatic guide for NASA landing and recovery activities - meteorological charts depicting alr and sea surface temperature, visibility, winds, and superstructure icing [NASA-CR-950[4]]

15 p2498 N68-26844 Topographic effects on deep plication to north Atlantic [TR-25/ONR/] sea circulation with ap-19 p3273 N68-31751

Atmospheric pressure fields Gulf of Finland correlated polynomial series [NOO-TRANS-384] and ocean currents in through Chebyshev 20 p3473 N68-33232

Optical properties of wave churned sea surface, sergy spectrum and length of wind waves, and estimation of energy dissipation in surface layer of sea PPRS-46563] 22 p4054 N68-36413

ing optical properties of wave 23 p4055 N68-36416

SEASONAL VARIATIONS
U ANNUAL VARIATIONS

SEASONS NT SUMMER NT WINTER

Disturbances in large-scale processes during natural moptic seasons as means of forecasting weather M-7410] 22 p3904 N68-35255 M-74101

SEASPRITE NELICOPTER U UH- 2 HELICOPTER

NT BARANY CHAIR NT EJECTION SEATS

mented dummies [AVSER-66-20] 03 p0302 N68-12584

Airline seat tests to deter passengers head when subject proved safety design proposal [ARL/SM-319] 17 p2830 N68-29056

SECANTS
U TRIGONOMETRIC FUNCTIONS

SECONDARY AIR

SECONDARY COSMIC RAYS

Correlated magnetic micropulsations and electron recipitation data compared with auroral substorm 08 p1171 N68-17971

servations of atmospheric nulti-joule cosmic ray air 10 p1587 N68-19806

General formula for ca secondary consic ray p ing equilibrium spectra ns in galaxy and cosmic i NASA-TM-X-63187 12 p1963 N68-22925

ron dose equivalent 15 p2553 N68-26146

ce analysis for detection of 15 p2555 N68-26594

SECONDARY EMISSION

Azimuthal asymmetry of secondary particle emission in high energy interactions [INR-819/VI/] 04 pti547 N68-12996 04 p0547 N68-12996

Energy spectra of [AFCRL-67-06511 11 n1766 N68-20618

tus for secondary elec-High energy resolution on emission from tungs

Radiation effects in sol solids, secondary electron cation methods, and statist [AFCRL-68-0019] itomic displacement in sion from solids, perifi-nalysis of data 11 p1774 N68-21570

Models of peaks, m ries of secondary emiss [TH/68/13] and boundary trajecto-

Spectral characteristics and dose calculations for pri-mary and secondary particles that result from insterac-tion of solar and galactic cosmic rays with aluminum shields 15 p2551 N68-26133

Shot noise fluctuations in secondary electron emission of magnesium and aluminum oxides, and polycrystalline tungsten

15 n2541 N68-26595 Electron scattering, energy loss and distribution, in magnetic copper and nickel solid surfaces [ORO-2755-20] 15 p2542 N68-24688

Secondary emission tubes as digital memory devices 16 p2629 N68-27689 Surface ionization coefficient for fast secondary par-

ticles (FTD-HT-67-49) 18 p3135 N68-30524 Stabilization of high current secondary emis monitors [SLAC-PUB-405]

19 p3281 N68-31905 Faraday cup calibra by secondary emiss [CEAL-1043] 19 p3260 N68-31971

primary particles are ext [SLAC-TRANS-85] 21 p3739 N68-34303

cay secondary emission 21 p3740 N68-34328

n calculated for highly momentum 21 p3744 N68-34641 Successive particle ema excited nuclei with large as [JENR-P4-3814]

Azimuthal asymmetry in secondary particle emission in interactions of negative pions with senon nuclei [INR-P-819/VI] 23 p4121 N68-36777

Solid state detector for detection of secondary elec-

a ray spectrum from secon-metagalaxy 24 p4339 N68-37754 Calculated cosmic gamma r dary particle production in me [NASA-TM-X-63369]

on f

seium

Ac of de [ACI

Ex

BAR

tions, [NAS

[ACK

Con ture o [ACK

Ear

Terr dies in

The

and ear Struc

ACIC

Expa (P-411-

Sovie gy, and

Long

(ESD-T

Seism

REPT.

Sovie

Gole

SEISMO

SECONDARY FLOW

Electrically-induced secondary vortex flows in pipes detected by electrostatic probes [AROD-4942-7-E] 01 p0052 N68-10820 Addition of secondary shock capability and modifi-tions to three dimensional characteristics program FR-653] 02 p0197 N66-11187

Leakage and secondary flow effect on lift, outlet angles, induced drag and loss coefficient in rectilinear cascade of compressor blades [ARC-RaM-3483] 03 p0297 N68-12457

03 p0297 N68-12457

Hot thermistor anemometer for tenant cylinders econdary flow stability of fluids in rotating cylinders 15 p2468 N68-26533

ere rotating in viscoelastic spherical container 16 p2648 N68-27821 Secondary flow about sphere fluid inside coaxially rotating spi

tary flow mixing lengths on shrouded rotary exha (NAPTC-ATD-147) of turbojet engines 19 p3359 N68-31559 mic flow field effects on sonic

Second order supers boom intensity 22 p3803 N68-34919

Second order wave structure of aerodynamic body in supersunic flow 22 p3855 N68-34921

SECONDARY HARMONIC GENERATION U HARMONIC GENERATIONS

SECONDARY INJECTION

Staged vortex amplifier with integral gas generators for liquid rocket secondary injection thrust vector con-

04 p0567 N68-13762 [NASA-CR-72145] Thrust vector control methods for solid propellant

rocket engines 05 p0731 N68-14063

Performance characteristics of gaseous secondary in-jection thrust vector control in overexpanded primary nozzles under sea level conditions [NASA-CR-66333] 07 p1074 N68-17081

Vortex valve for hot gas flow modulation in secondary injection thrust vector control system
[NASA-CR-1091] 16 p2751 N68-28112

Predicting normal force induced in boundary layer separation immediately ahead of secondary injection [NOLTR-68-5] 18 p3039 N68-29773

SECONDARY RADAR

Digital data transmission from aircraft to ground sta-on using secondary radar system 17 p2854 N68-29199

SECONDARY WAVES

SECRETIONS NT HORMONES

INSULIN

Catecholamine effects on regulating ACTH secre-15 p2391 N68-25937 [NASA-TM-X-60534]

Mechanisms of secretion and absorption of en-dolymph 17 p2822 N68-29136

Effects of diet variation on secretory function of (RTS-4530) 20 p3406 N68-32764

Increased current pulse in linear electron accelerator by increased number of sections [SLAC-TRANS-76] 05 p0645 N68-14777

Current increase in multiple section linear electron accelerator by modified first acceleration section [SLAC-TRANS-77] 05 p0645 N68-14778

SECULAR PERTURBATION U LONG TERM EFFECTS

SECURITY

Radio wave measurement programs related to telecommunication systems required to support inter-nal security and counterinsurgency 02 p0183 N68-11713

cure information sharing file system for problem (REPT.-68-33) 20 p3444 N68-32992

SEDATIVES

Effects of hypnetic sedatives on quality of sleep, rousal characteristics, and psychophysiological per-permance of humans and effects on visual acuity test 14 p 2198 N68-24866

SEDIMENTARY ROCKS

NT COAL NT LIMESTONE NT SANDSTONES

Propagation velocities and quenching of elastic aves in sedimentary rocks

06 p0835 N68-15382 Aeromagnetic survey for determinin position of rocks of paleozic basement farities of anomalous magnetic field [ACIC-TC-1348] 15 p2459 N68-26059

Rare earth elements as trace elements in chronditic eteorites and terrestrial sedimentary rocks 16 p2656 N68-27812

SEDIMENTS

Oceanographic studies on bottom relief, sed arbulent mixing, and waves 06 p0832 N68-15029

Hydrochemical and magnemical characteristics at from ocean bottom sample [NOO-TRANS-346]

06 p0839 N68-15628 Lithogenesis of plastic clays [NOO-TRANS-355] timents in seas 06 p0841 N68-15820

Morphology, and sedir nents of Timor Sea 06 p0842 N68-16001 Band ultracentrifugation technique for analysis of

[ISS-67/33] 11 p1635 N68-21158 hods for determining sediment

Isotopic labeling mer deposits using gold 198 [CEA-R-3389] 12 p1931 N68-22604 Suspended matter and plan northwestern part of Indian Ocean lankton_distribution in

14 p2248 N68-24960

Soviet bloc oceanographic research activities on termal conductivity of waves, distribution of ocean idiments, and flow models 15 p2458 N68-25825

Chemical and spectral analyses on ferromagnetic sediments from Pacific Ocean floor [RTS-4463] 20 p3469 N68-32498

n of nitrogenous organic com sediments pounds in sea water a [NASA-CR-96378] er and sedin 20 p3473 N68-33243

Visual study of large-scale turbulence effect on dis-ibution of suspended sediments with respect to flow 23 p4094 N68-36428

SEEBECK EFFECT

Thermal conductivity Seebeck coefficient, and electrical resistivity of heavily phosphorus doped silicor from 313 deg K to 673 deg K [TR-23] 03 p0406 N68-12240 03 p0406 N68-12240

Electric effects in terphenyl including electrical conductivity and Soebeck effect measurements
[EUR-3631.F] 03 p0406 N68-12254

Thermal EMF of solid solutions of indium phosphide and gallium amenio (FTD-HT-66-771) 15 p2536 N68-26056

Thermoelectric cyclotron resonance viewed as Seebeck effect in semiconductors in microwave elec-tric field

16 p2745 N68-27670 Hall and Seebeck effect, electrical resistivity, and theroelectric power of graphite as function of tempera-ture and boron content

17 p2955 N68-28520 Thermodynamic equations on conduction processes in mixed biamuth in magnetic field to find electrical resistivity, Hall, Seebeck, and Nernst effects, and related

17 p2957 N68-28680

Electrical resistivity and Seebeck effect of thulium 20 p3571 N68-32888

Hall effect, Seebeck coefficient, and electrical con-ductivity of single crystal sodium vanadate 23 p4150 N68-36358

SEEDING [INOCULATION] U INOCULATION

SEEDS

Inorganic fluoride propellant oxidizers effects on seed germination and plant growth [AMRL-TR-66-187, V. 1] 13 p2140 N68-23685

Germ-free seeds, seedlings, plants, tissues, and cell nes for lunar receiving laboratory, including algal and [NASA-CR-92258] 21 p3638 N68-34779

U HOMING DEVICES

SEGREGATION U SEPARATION

NT LOVE WAVES

NT MICROSEISMS NT RAYLEIGH WAVES

Gravitational field of Black Sea depression and adjoining territory along deep seismic sounding profiles discussed with respect to earth crust [ACRC-TC-1224] 01 p0058 N68-10428

Seismic classification model (MTR-305) 01 p0061 N68-10885 Seismic techniques for detecting near surface cavi-

03 p0338 N68-12023 Mediterranean sea crust-mantle structure in terms of seismic wave phase velocity and travel time [AFOSR-67-2415] 05 p0651 N68-14327

Seismic spectra and high pass filtered seismograms, nucleur explosion detection in presence of natural events, and data processing in large aperture seismic array studies.

(ESD-TR-67-615) 05 p0653 N68-14650 Meteorological, acoustical, and seismic data ob-ained during SOTRAN TNT explosion tests in New fexico

05 p0653 N68-14678 Seismic wave modeling experiments involving etonation of radial explosive sources in plates of gland Plexiglas prestressed to various static prestressed.

levels (SRI-PGU-6099) 06 p0919 N68-15291 itude and velocity measurements Seismic wave amplitude and determine geological section

06 p0835 N68-15380 Progress results for studies in seismic phenomena and earthquakes and explosions [AD-663219]

Oceanography, seismic wave data on earth crust, and size distribution of ice floes 08 p1167 N68-17529

Seismic wave propagation used in prospecting for oil fields and minerals 08 p1169 N68-17607

ts on long period data Signal proce obtained by larg [TN-1967-50] 08 p1169 N68-17769

Large aperture seismic array studies dealing with masking underground nuclear tests with large earthquakes, effects on epicenter location, and pP phase of earthquakes
[ESD-TR-67-630] 09 p1332 N68-18363

Statistical correlation techniques for smoothing Fourier amplitude spectra in seismographic signal

NVO-1163-86) 10 p1518 N68-19512 FORTRAN 4 computer program for computing radi-and vertical displacement time functions for seismic site propagation in solid half space overlain by solid

[NVO-1163-105] 10 p1519 N68-19553 d worldwide earthquake data 10 p1522 N68-19989 (AD-665015)

Seismic discrimit (ESD-TR-67-597) 10 p1523 N68-20239

Soviet-bloc terrestrial earthquakes, mountain blas and seismic prospecting 12 p1868 N68-22483

IGY gravimetric inve ns in Kuril- Kamchatka IGY gravimetric investigations in Kuril- Kamchatka trench and northwest Pacific region [ACIC-TC-1274] 12 p1869 N68-22763

Amplification of seismic body waves by low velocity surface layers of alluvium [NVO-1163-130] 12 p1870 N68-22959 Love wave magnification in seismic signal strength

INVO-1163-801 13 p2058 N68-23286 Large aperture seismic arrays for detecting un-erground nuclear explosions and locating earthquake dergro [QTR-3] 13 p2061 N68-23772

ic explosion effects on ninum sheets 14 p2252 N68-25376 Dynamic model for seisn prestressed plexiglass and alu

Similarity of compress derground explosion ion surface waves during un-16 p2655 N68-27591

Hardware and software for seismic signal processing [ESD-TR-68-149] 19 p3270 N68-31412

Seismological station arrays, seismic waves, and ex-plosion source detection [REPT.-59] 22 p3870 N68-35431 SEISMOGRAMS

Seismic spectra and high pass filtered seismograms, nuclear explosion detection in presence of natural events, and data processing in large aperture seismic array studies. (ESD-TR-67-615) 05 p0653 N68-14650

SEISMOGRAPHS

¥

5

13

7

SE SE

1

88

0

a

8

9

á

n

-

a

2

3

q

3

3

2

e

2

Short period geomagnetic micropulsations recorded on flux-rate variographs and seismographs at five

[AROD-6135-4-P] 03 p0338 N68-12045 Local magnitude scale for south Australian carthquakes based on maximum trace amplitude along S waves recorded on vertical component Benioff usimographic.

04 p0504 N68-13749 Signal processing experiments on long period data obtained by large aperture seismic array [TN-1967-50] 08 pl 169 N68-17769

Aeromagnetic measurements along regional profiles of deep seiunic sounding in central Asia [ACIC-TC-1254] 09 p1332 N68-18491 n of Montana large aperture seismic array 13 p2065 N68-24202

Wave velocity and direction tables computed from seismic array time lag data [BARC-309] 21 p3685 N68-33980

Measurement and interpretation of ground vibra-tions, produced by assumic effect of aonic boom [NASA-CR-1137] 22 p3868 N68-35151

SEISMOLOGY Earth crust in Black Sea basin based on seismic data and gravitational a (ACIC-TC-1223) 01 p0055 N68-10147

Correlation of seismic and ture of earths crust in Black S [ACIC-TC-1222] nd gravimetric data on strucdepression 01 p0056 N68-10343

Gravity, tsunami, seizmology, longitude and latitude, and meteorology data collected by World Data Center 01 p0057 N68-10351

Mechanical analysis of earth surface deformation seen in repeated surveys of geodetic movements [AFCRL-67-0630] 05 p0651 N68-14332

Earth planetary structure, seismology, petroopy, comagnetic and graviational fields, and prospecting O6 p08.52 N68-15303

Seismic investigations of margin of Russian platform tectonic of southwestern 06 p0836 N68-15396

Seismology, geomagnetic and earth planetary structure and gravitational fields,

08 p1167 N68-17530

mology, magnetometry, gravimetry, and telluric it and thermal energy measurements 08 pl168 N68-17603

and predictions, and 08 p1168 N68-17605

Exploratory geology and use of seismology in etroleum industry 08 p1168 N68-17606

Terrestrial physics research and seismological sudies in U.S.S.R. and Soviet-bloc nations 09 p1336 N68-19171

Theoretical and model seint [AFCRL-67-0600] 10 p1523 N68-20253 Soviet-bloc research on terrestrial geophysics, vol-canology, seismology, and gravimetry

10 p1526 N68-20533 Seismological research on earth crust and mantle and earthquake source mechanisms [5-2]

Structure of earth crust in arctic regions based on seismic, aeromagnetic, and bathymetric observations [ACIC-TC-1283] 13 p2057 N68-23221

World Data Center A tables on gravitation, tsunami, rismology, longitude, latitude, and meteorology data 13 p2060 N68-23618

Expansion of Montana large aperture seismic array [P-41]-24] 13 p2065 N68-24202

Golem A computer system, eismic flow, tidal equations, as satics activities numerical solution of sd other applied mathe-14 p2297 N68-24698

Soviet bloc research in geodesy, cartography, geolo-

15 p2458 N68-25826 Seisomology, geomagnetism, petrology, and earth

17 p2882 N68-29454 Long period noise s and propagation at large aperture seismic array /LASA/ (ESD-TR-68-176) 20 p3471 N68-32774

Seismological station arrays, seismic waves, and ex-22 p3870 N68-35431

ent in scie ic research equipment 22 p3877 N68-35453 Soviet developme (ATD-68-16-75-11

ry earthquake phases from Australian stations for August 27 through September seismograph str 23 p4358 N68-37348

ry earthquake phases from Australian stations for September 2 through 9, 1968 -23 p4358 N68-37349

ses from Australian ber 9 through 15, 1968

23 p4358 N68-37350 tidal measurement riet bloc investigation 24 p4252 N68-38039

SEISMOMETERS U SEISMOGRAPHS

NT PERSONNEL SELECTION NT PILOT SELECTION

Nuclear fuel materials 01 p0095 N68-10806

Selection and ranking procedures [AD-659073] 01 p0086 N68-10992

Decentralized review process for selection of private firms for major NASA contracts [NASA-CR-65934] 07 p1101 N68-16336 Computerized item selection and regression analysis

SRM-68-11] 08 p1136 N68-17788 on, and ranking proce f probability distribution Selection, a families of prof [AD-664474] ares for restricted 09 p1359 N68-18538

Generalized goal in fixed sample ranking and selec-tion problems 10 p1545 N68-19659

Component reliability including selection, specifica-tion, verification, review process, parts data sources [NASA-CR-1130] 19 p3286 N68-31980 Guidelines for selection of low no

noise transistors 22 p3846 N68-35121 old elements in selection and discrim

process of pattern recognition FTD-HT-23-1044-67 24 p4208 N68-38337 SELECTIVE DISSEMINATION OF INFORMATION

Quarterly operations summary of center for selective issemination of biomedical information within

Technology Utilization progr [NASA-CR-94586] 13 p2000 N68-23455 e, and NASA program Technology utilization pro-for transferring technology a tion on product development [NASA-CR-83192]

17 p2990 N68-28964 tatistics on NASA program of disseminating educa-nal monographs and visual briefs to industries and

universities [NASA-CR-95696] 17 p2990 N68-29027 ovide low cost computer files to university gradu-Experimental program to pre-carches of NASA information

INASA-CR-957241 17 s2990 N68-29038 Statistical data on e onal monographs and iversities and industries for technology utilization ev INASA-CR-972291

23 p4191 N68-36643 Operation of NASA techn sology utilization regional INASA-CR-971931 23 n4191 N68-36682

Organizational plan, operational procedures, and anagement and technical services of regional dissemination center (NASA-CR-97258) 23 p4191 N68-36683

SELECTIVE FADING

Frequency selective fading effects on binary digital [NASA-CR-91078] 03 p0319 N68-11921

Frequency selective fading, as munication, phase lock loop syst bit timing, and other studies on tive binary communication [NASA-CR-91526] analog and digital com-ystem, source encoding, on suboptimal self-adap-04 p0488 N68-13311

dulators for a tion over slowly fading channels 19 p3239 N68-31417

SELECTIVITY

of spectrally selective photocathodes for ultravio NASA-TM-X-632151 14 p2330 N68-24731 behavior by aluminum Cosmic ray muon scatte ad muon selection technic

15 p2550 N68-26111

Binary vapor-liquid equilibrium determination, and selectivity of hydrocarbons at infinite dilution 20 p3414 N68-32239

SELECTORS

Computer program with algorithm selection from syntactic table for machine translations [FTD-MT-67-76] 15 p2432 N68-26286

Mass selector for producing ion beams in hot [DOUGLAS PAPER-5047]

24 p4303 N68-37957

NT CADMIUM SELENIDES
NT COPPER SELENIDES
NT ZINC SELENIDES

PbTe-PbSe and PbTe-GeTe materials for thermoelectric power generators [NYO-3886-1] 16 p2683 N68-28090

SELENIUM

Reflection spectra of optical phonons in hexagonal mixed crystals of cadmium suffice and selenium 04 p0558 N68-13465

Data tables on thermodynamic and physical proper-ties of sulfur, selenium, tellurium, polonium, and their compounds, based on comprehensive literature survey [PB-175628] O6 p0791 N68-15754

cuum evaporated films of tel-Optical properties of va-lurium and amorphous sele [ORNL-TM-2023] 09 p1408 N68-18941

SELENIUM COMPOUNDS

NT CADMIUM SELENIDES

NT COPPER SELENIDES

NT SELENIDES

NT ZINC SELENIDES

Selenium and hydrogen effects on tensile properties of zirconium and Zircaloy
[AERE-R-5639] 13 p2083 N68-23697

Inotopic effects in crystal symmetry and nature of phase transitions in ferroelectric selenium compounds [NIJS-R-522] 13 p2137 N68-23910

Potential applications of group 2 to group 6 com-

13 p2138 N68-23942 Oxidation properties of sele-

18 p3018 N68-29678

Properties of pulsed liquid lasers with selenium ox-hioride or phosphorus oxychloride matrices (R-68-826.4) 21 p3700 N68-34566 ychloride or phosp TR-68-826.41

SELENOGRAPHY

Lunar highlands compountle for evolution of terre ion compared to earl [NASA-TM-X-63141] 09 p1428 N68-19437

Relative heights of pl [AFCRL-68-0073] ic features of moon 11 p1783 N68-21410

INASA-CR-92078] 12 p1966 N68-22332 Stratigraphy and structure of Cleomedes quadrangle of more

22 p3866 N68-34862

Abstracts on astrophysics, selenology, and planetology from Soviet literature 23 p4163 N68-36551

SELF ABSORPTION

Self absorption resorption harmonics by se on on Penning discharge spectra at electro ary plasma superimpos tion on Penr (IPP-3/60) 02 p0252 N68-11157

ifer and self absorption effect on transfer behind reflected shock 14 p2369 N68-24545

SELF ADAPTIVE CONTROL SYSTEMS

tistical analysis of self-adjusting network sys 01 p0043 N68-10321

Extremal self-adjusting system hase shift to system of higher the m based on measuring nan second order 01 p0043 N65-10322

ametric curve of self- ad-Quasistatic condition of parasting system using spectral a

01 p0043 N68-10323 ficiency evaluation of self-adjusting automatic rol systems with respect to input signal - criticism response to calculation interpretation 01 p0044 N69-10327

matic control systems FTD-HT-66-2521

SUBJE

SELSYN U SI SEMAN

Effe

CS-7 Syn line 4 (ILLL)

Sym

TM-

ductio

And in line [NAS

Ani and s

NAS

Phy semic celera [NAS

Syst

Contion f

(AMI

SEMIC

Ele

film s

Ele system memi [ISS-4

Gre

(NAS The ble of room

Hig

FIL

Grechron tors,

Ek

amor semic [NAS

Profilms depo and C

Histon (

Ek

SEMICI

SELF ALIGNMENT Frequency selective fading, analog and digital com-munication, phase lock loop system, source encoding, bit timing, and other studies on suboptimal self-adap-tive binary communication [NASA-CR-91526] 04 p0488 N68-13311 Training algorithms for pattern recognition machines 06 p0819 N68-15583 Classifications for self adjusting systems in automatic 06 p0820 N68-15592 High speed extremal self-adaptive digital regulator for optimization of objects with many parameters [FTD-MT-24-94-67] 06 p0820 N68-15625 Automatic single-channel minimax controllers and neumatic isodromic controller with broad throttling range [FTD-HT-66-773] 07 p0980 N68-17163 ic controller with broad throttling Pneumatic isodromic con range - self learning systems 07 p0980 N68-17164 Multiple integration within moving interval for deter-mining characteristics of complex dynamic systems [NASA-TT-F-11220] 08 pl 155 N68-17611 Development of adapti ve pattern recognition reshold logic for c 08 pl 152 N68-18038 [AFOSR-68-0037] Adaptive computer program for synthesis of threshold logic networks [AFOSR-68-0039] 08 p1152 N68-18051 Self test, automatic self calibrate and integrity moni-tor for airborne or ground based performance checks on avionic equipment on avionic equipme [AD-664385] 09 p1340 N68-18369 Computer analyses of retrodirective, and self adap-tive antenna phase control techniques for Mars probe [NASA-CR-977] 09 p1371 N68-18484 Statistically self adjusting system for stabilization of basic control system circuits

09 p1318 N68-18594 Airborne computer for self adaptive pitch rate con-trol systems using difference equations for parameter [GA/EE/67-2] 10 p1458 N68-20082 Adaptive control systems design for time variable (TR-41) 10 p1510 N68-20130

Self adjusting and self correcting features of human tracking systems compared with those of mechanical systems [FTD-HT-66-543] 11 p1640 N68-21330

Three variable self adaptive flight control system with discrete interval binary noise perturbation signals 12 p1851 N68-21931 Redundancy effects and self adaptive control for in-creased reliability of telemetry systems [FTD-MT-24-149-67] 12 p1852 N68-22142

Self corrective error detection code for interference control of communication channel

12 p1852 N68-22144

Three parameter self adaptive right shadow ing discrete interval binary noise perturbation 12 p1853 N68-22335 Asymptotically optimal discriminant functions for

pattern recognition [AFOSR-68-0381] 13 p2093 N68-23383 Laboratory model of experiment for demonstrating applicability of adaptive multimode systems concept to scientific spacecraft instrumentation scientific spacecraft [NASA-CR-86065]

17 p2974 N68-29547 Synthesis of nonlinear self adaptive spacecraft control system [FTD-MT-24-132-67] 18 p3052 N68-30105

Automatic thruster and vacuum apparatus control for ion engine durability tests [NASA-TM-X-52427] 21 p3758 N68-33995

Adaptive pattern recognition considered in frame of general systems theory [SRC-68-7] 21 p3666 N68-34758 Optimum linear adaptive design of dominant type systems with large parameter variations [NASA-CR-97312] 24 p4224 N68-37727

SELF ALIGNMENT

Material and design studies of self-aligning bearings for use in flight control actuators [FSN-AD5-05-68-4] 23 p4067 N68-36243 23 p4067 N68-36243

SELF BIAS

SELF CONSISTENT FIELDS

Self consistent fields of molecular crystals used as or-03 p0407 N68-12396 Solution of equations of self consistent field for atomic ground and excited states utilizing BESM-2M 06 p0887 N68-15954

Self comment chaster treatment of kinetic and mag-netic effects in narrow energy bands (TR-6) 07 p1065 N68-16258

Equilibrium configurations of plasmas and self con-stent field with axisymmetry 07 p1058 N68-16443

Hard shell repulsion with separable interactions in helium isotope energy potential [INR-831/VII/PL] 09 p1389 N68-18622

Molecular orbital method based on atomic self con-atent field functions and applicable where pi electron strictions not fulfilled [NASA-CR-83496] 14 p2320 N68-25580

Low energy pion wave resonances in meson-meson 15 p2523 N68-26560

Hartree approximation for electron densities and Slater orbitals of atoms and metals in self consistent fields

17 p2954 N68-28490 Splitting atomic energy level of N ion allowed with ock self-consistent field orbitals [-L-13] 18 p3128 N68-29760

[T-L-13] Total energy estimation of beryllium hydride if consistent fields, and molecule by using orbital, self cons correlation energies

18 p3129 N68-29904 Spin-spin and spin-orbit coupling, molecular wave inctions, and Hartree approximation for self con-stent fields in zero field aplitting in Nh 18 p3022 N68-30063

Multiconfiguration approximation for atomic species of helium type - Fock self consistent field equations [T-R-472] 18 p3139 N68-30812

Hartree self consistent field molecular wave func-ons and orbitals, and scattering cross sections for

19 p3321 N68-30952 Hartree-Fock molecular orbital self consistent ap-proximation for nickel fluoride cluster luster 19 p3326 N68-31154

Non-perturbative self consistent field theory of gas

20 p3493 N68-32652

Galactic plasma and its dynamics determined by self onsistent field kinetic equations 21 p3749 N68-34216 Self consistent approach to effective nuclear force of ralistic nucleon-nucleon potential

23 p4128 N68-37030 C-68-52] Atomic energy levels of helium 24 p4317 N68-37989

SELF DEPLOYING SPACE STATIONS
U SPACE STATIONS

SELF DIFFUSION

SELF ERECTING ANTENNAS

U ANTENNAS

SELF ERECTING DEVICES

Materials development for 425 foot diameter passive ommunications satellite with self erecting properties NASA-CR-93423] 09 p1431 N68-18704 [NASA-CR-93423]

SELF EXCITATION

Excitation of vibrational levels of even-even nuclei in 05 p0713 N68-14438

[IAE-1286]
Excitation of parametric oscillators, amplitude of oscillations under steady-state operating conditions, and power relationships in parametrons
06 p0817 N68-15259

Experimental investigation of self excitation of inductor generator with capacitive excitation [RTS-4439] 20 p3402 N68-32768

Self-excited vibrations of enclosed laminar diffusion ames under forced convection 22 p3977 N68-35008

Klystron oscillator designed for reduced excitation power use at nanosecond pulse rate [FTD-HT-23-974-67] 24 p4237 N68-38318

Linear pinched argon plasma for guiding self focus-ing relativistic electron beam [RR-TR-67-16] 09 p1400 N68-18390 Stokes radiation, stimulated Raman spectra, and self focusing studied [TR-6] 18 p3023 N68-30113 Self focusing in high current, relativistic, electron beams extracted from electrode space of pulsed X ray

19 p3339 N68-31274

SELF INDUCED VIBRATION

NT PANEL FLUTTER
NT SUBSONIC FLUTTER
NT SUPERSONIC FLUTTER

Modified point transformation method for analysis of self vibration of second order nonlinear pulse systems [FTD-HT-67-244] 02 p0192 N68-11411

SELF LUBRICATING MATERIALS

Conference proceedings on friction theory, wear, and lubrication action and materials [FTD-HT-23-500-67] 02 p0215 N68-11232

Friction torque of ball bearings in vacuum to deter-tine lubricating capability of polytetrafluoroethylene-tomposition retainer materials composition retainer ([NASA-TN-D-4355] 07 p1002 N68-16468

Friction and wear in cryogenic liquids for phenolic and polytetrafluorocthylene composites of various particle sizes and concentrations [NASA-TN-D-4565] 13 p2077 N68-24142

Lubrication, design, and material requirements of ball bearings in liquid hydrogen turbopumps [NASA-TM-X-52476] 20 p3488 N68-32934 SELF LUBRICATION

Lubricating mechanism, cage design, and heat generation of ball bearings for liquid hydrogen tur-bopumps, and design factors of contact seals for liquid fluorine pumps [NASA-TM-X-52415] 08 p1183 N68-18124

SELF ORGANIZING SYSTEMS

Algorithm for perceptron system with input correlator for pattern recognit [FTD-HT-23-582-67] 06 p0821 N68-15874

Mathematical model studies for self organizing (RADC-TR-67-556) 07 p0971 N68-17025

Adaptive mechanisms in automata theory, learning machines, formal systems, and recursive function [RADC-TR-67-521, V. 1]

09 p1317 N68-18540

Synthesis of logical net of digital perceptron based on optimum coding and linear programming methods [FTD-MT-24-203-67] 18 p3039 N68-29966

Logical and metaphysical foundations of organismic theory for artificial intelligence [TRACOR-68-252-U] 18 p3016 N68-30708

SELF OSCILLATION

Analytical study and computer simulation of synchronous quenching of soft, self-sustained oscilla-05 p0640 N68-14937 [AFCRL-67-0453] Computed spherical oscillation tables for earth [NASA-CR-92717] Nonlinear combined system stability and suppression of self oscillations [FTD-MT-24-102-67] 18 p3051 N68-30099

Self oscillation analyses for nonlinear cubic regulato-18 p3053 N68-30550

Self-sustained oscillations in heated two phase flow in relation to nuclear reactors [C.E.-TRANS-4820] 22 p3863 N68-35631

Reponse in dynamic nonlinear system represented by Markov process 23 p4037 N68-36678

SELF PROPAGATION Diffusion of plutonium isotopes in anion exchange ystems at chemical and physical equilibrium LA-3534] 03 p0311 N68-12140

[LA-3534] SELF REGULATING
U AUTOMATIC CONTROL

SELF REPAIRING DEVICES

Self-repair, fault detection, and automatic reconfiguration for spaceborne computer systems featuring multiprocessors and microminiaturized circuits 06 p0808 N68-15442

Self-testing and repairing computer systems with potential application to multiprocessor spaceborne configurations 06 p0809 N68-15444

Basic principles of constructing self adjusting and emplex automatic control systems [FTD-MT-65-433] 07 p0980 N68-17160

SELF SEALING

Self sealant methods for protecting spacecraft and spandable structures against hazards of meteoroid 16 p2785 N68-27932

A-1106

SELSYNS [TRADEMARK]
U SERVOMOTORS ray GEMANTICS. 274 Effects of natural language input on interviewing

EX

411

232

ter-

468

olic

142

of

eat ur-uid

24

74

ng

25

ng

40

66

ác

αf

th

13

10

0

09 p1312 N68-19485 Syntax and seman cations for high level IIfilLUAC-4-1581 13 p2037 N68-24261

tics of LISP 2 for IBM \$/360 com-Syntax and sema TM-3417/200/00] 17 p2859 N68-28826 tic information and in-(P-3921) 24 p4208 N68-38436

SEMICIRCULAR CANALS

cular response to rotation [NASA-CR-93544] 09 p1283 N68-18951 Animal studies of stimulud semicircular canals, as as effects on otolith organs and reflex time of rotation

nystagmus in man (NASA-TT-F-11489) 10 p1462 N68-19823 Physical properties semicircular canal responseleration and thermal st [NASA-CR-94779] byrinthine fluids and angular and linear ac-14 p2202 N68-25143

Systematic analysis of teristics in vestibular nuclei neural response charac-17 p2822 N68-29139

ar canals in cats, and slow ts of otoliths in cats 17 p2824 N68-29150 Fast tilt test of a

Control theory applied to a tion for obtaining mathematic tion for obtaining mar canals and osolith orga [AMRL-TR-66-209] 17 p2825 N68-29152 thine fluids, and caloric

17 p2825 N68-29157

Postrotational sensation an of semicircular canal function on and nystagmus as indicants 17 p2825 N68-29158

SEMICONDUCTING FILMS

Electrical and optical properties of amorphous thin film semiconductors [NASA-CR-89982] 01 p0123 N68-10300 Elementary physical printers, semiconductors, ciples of transport of ioni and electrophysiologics

[ISS-67/19] 02 p0171 N68-11623 Growth and analysis of thin film piezoelectric trans ucers in study of electron phonon interactions in

(NASA-CR-90540) 02 p0259 N68-11809

Thermal detector based on thin film capacitors capa-ble of approaching theoretical maximum detectivity at room temperature 03 p0329 N68-12312

nt generator for parameter High frequency three-point measurements on thin semico [FTD-HT-66-414] octing films 04 p0508 N68-13224

Growth kinetics, and electric properties of silicon chromium, and zirconium oxide films on semiconduc-tors, and metals 07 p1069 N68-16962

Electron microscopy of electron beam irradiated amorphous silicon, germanium, and cadmium sulfide semiconductor films [NASA-TN-D-4522] 10 p1580 N68-20295

tacts centered on thin cir-licular magnetic fields for lensity and mobility in thin Square array of point of cular samples with perpendetermining charge carrier semiconducting layers

12 p1952 N68-21914 Localized electronic co tion behavior of anodic oxide films on zircon (AECL-3082) 13 p2134 N68-23558

Bibliographical survey on preparation, properties, pplications, and theory of semiconducting thin films NOLC-745] 14 p2328 N68-24349 NOLC-745)

Preparation and optical properties of epitaxial thin ims of semiconductor compounds, and effects of eposition parameters on electron diffraction of CdTe and CdSe [HP-22]

18 p3154 N68-30427 ss plasmatron for produc-19 p3285 N68-31792

Electrical characteristics of various thick semiconducting films used in integrated circuits
[TN-1968-13] 19 p3254 N68-31869

nductor films 21 p3752 N68-33714

ration and use in

DEMOCRABLE OF TRANSPORT OF TRAN

PHOTODIODES
PHOTOTRANSISTORS
PHOTOVOLTAIC CELLS
SILICON TRANSISTORS
THERMISTORS

NT THYRISTORS
NT TRANSISTOR AMPLIFIERS
NT TRANSISTORS
NT VARACTOR DIODES

Impurities and interface states of edicon dioxide /si-icon system studied to improve microcircuit reliability [NASA-CR-90046] 01 p0121 N68-10098 Automated Hall effect an udying electrical transport ct and resistivity apparatus for sport properties of semiconduc-

[NASA-TM-X-1464] 01 p0004 N68-10103 Computer program for predicting transient and per-tanent radiation damage in semiconductor junction

01 p0037 N68-10276 iring apparatus for ger-Semiconductor III manium radiation de [BNL-11645] 01 p0123 N68-10468

02 p0258 N68-11405 ctors and in solid state elopment 02 p0259 N68-11603

dying nuclear reaction gas [NASA-CR-90545] 02 p0213 N68-11787 Low noise ultrahigh frequen [FTD-HT-67-375] cy cryogenic mixers 03 p0332 N68-12232

Corpuscular ra energy converters [REPT.-67] ge of photovoltaic solar 03 p0389 N68-12279

for measuring conversion on in gold isotope decay 03 p0390 N68-12430 electrons and gar (UCRL-16969) calibrating semiconductor Reference sources for ipha spectrometers

03 p0392 N68-12504 ervey of radiophysical in sephere, research trends i as on semiconductors and p investigations of auroral in Soviet aviation, and

lymers 03 p0340 N68-12622

semiconducting detect 03 p0385 N68-12728 aturized electronic

04 p0486 N68-13096 tor devices, and applica-Handbook on sem

[FTD-HT-66-686] 04 p0486 N68-13242 nd color analyzer used semiconductor crystal Spatial intensity distrib-with spectrography for sci-target plates for imaging d [ARL-67-0180]

04 p0510 N68-13430 d physics and electronics Fourteen papers on applied electronics instrumentation de [BNWL-481, V. 2, PT. 4]

05 #0614 N68-14326 Computerized radiation load s ductor device exposed to pro-radiation belt [BMWF-FB-W-67-08] imulation for semicon-06 p0814 N68-15215 tic switch for space alter-

Breadboard three-pha nating current power sys (NASA-TM-X-1495) 06 p0815 N68-15649 ng semicondu Two-dimensional po charged particle detecto (AERE-R-5393)

06 p0846 N68-15660 g effects between i tegrated circuit ele [IBM-47-521-10] 06 p0816 N68-15896

nductors - Hall gages, riodes, photoresistors, [FTD-HT-65-146] 07 p1066 N68-16489 of polar somiconductors 07 p1069 N68-16963

n of lithium-drifted sur-(MLM-1351) own in sem

(NBS-TN-431) 08 p1153 N68-17627

(CERTS-NT-02-5) onized particles 08 p1 178 N68-17628 Electrolumines ton loss measurem (MSC-839)

09 p1349 N68-18268 09 p1343 N68-18963

ide laser diode with sil-solution switch 09 p1316 N68-19395 iopment of g [NASA-CR-93668]

(NASA-TT-F-11556) 09 p1412 N68-19492

iconductor tests sets 10 p1527 N68-19560 Calibration procedure (NAVAIR-17-20AY-24) **External visual inspecti** [NASA-TM-X-60946]

10 p1505 N68-19589 citance of abrupt p-n

semiconductor device for use as altimeter or altitude stabilizer in aircraft flight control [CEA-R-3281]

Design and perfe idth radio freques REPT.-2011-1 11 p1673 N68-21022

Chemical vapor donto single crystals of producing high temp tronic devices [NASA-CR-86043] 11 p1771 N68-21026

Operation of Gunn devices in series dc bias configu [RADC-TR-67-646, V. 2] 11 p1773 N68-21496

Coupled, first order par volving particle current de calculating high frequence

12 p1952 N68-21957 ne signal registration 12 p1850 N68-22630 KFK-617

Air moni (RFP-1046) 12 p1878 N68-22853

Physical characted devices, and thin file [AFCRL-68-0091] of electronic materials, 13 p2137 N68-23849 for time measurements etectors 13 p2069 N68-23925 Time-to-amplitud

IBJ-847/IA/PL) Long term sem

SRDE-67006 13 p2138 N68-23982 meity of low frequency

Estimating power of 14 p2297 N68-24544

ents requirements, and endector detectors 14 p2254 N68-24611 Physics and n

chnique of radiation moustor devices 14 p2230 N68-24797 BMWF-FB-W-68-17) n and ele

bipolar transistors [BMWF-FB-W-68-16] 14 p2230 N68-24805 ors for X ray spectra 14 p2258 N68-25254

[NYO-3246-TA-1] 14 p2258 N68-25266

nproving temperature nductor strain gages 14 p2260 N68-25414

SUBJ

Cal

recon

electr [USC

Reamd h

icon [NAS

Ele

Rai (CER

AFC

Hig

Qua

Con

[ASR

ARI

Cu juncti NAS

Hig

Cr

magn tures [REP

(SU-

Co

TR-

Ele semic cond

JPR

NAS

X yield [JPR:

Ele

lns

Dy

Ele ITR-

devic [AFC

Mi

on p semic line s [AD-

No ducto [AD-

Di

Ph

Ele

SEMICONDUCTOR JUNCTIONS Gain, impedance, frequency response, noise, junction parameters, and materials for semiconductor devices and solid state devices
[APCRL 47-0685]

15 p2436 N68-26260 Development of semicor and microminiaturization fuctor devices, transistors. 16 p2633 N68-27303 mmaries of solid state semiconductor devices research (ESD-TR-68-171 16 p2743 N68-27393 Differential equations for static behavior of p-n junction devices 16 p2632 N68-27654 Conductance in tunnel metal insulator semiconduc-16 p2745 N68-27830 Fabrication of lithium compensated p-i-n type and surface barrier type silicon semiconductor detectors [CEA-R-3419] 16 p2664 N68-28029 Technical findings on ceramic dielectrics, p-n junctions, semicanductor devices, and radiation studies [SR-1] 18 p3044 N68-29639 Using phase shift between voltage across diode and current through it to measure short service lives in semiconductors [FTD-HT-66-608] 18 p3153 N68-30102 High vacuum flow reactor for studying catalytic activity and surface chemical composition of semiconductors [AD-669691] 18 p3028 N68-30456 Transport theory and computer calculations for sta-tionary phenomena in semiconductor devices [DISS. NR. 4030] 18 p3155 N68-30481 Frenkel effect in germanium and silicon semiconducfor diodes [APL-TG-230-T550] 18 p3049 N68-30692 Semiconductor devices for studying fission in high energy proton beam at CERN proto [P-885/IA, 2/PH] oton synchrotron 18 p3138 N68-30780 Calculating single-phase and two-phase asymmetric regimes in asynchronous electric motors with con-trolled semiconductor commutators [RTS-4377] 20 p3447 N68-32315 Hall effect gages using thin layers of indium antimode with applications to magnetic field measurements TD-HT-23-996-67] 20 p3562 N68-32324 nide with applications [FTD-HT-23-996-67] Physical properties of three term amplifying device 20 p3448 N68-32328

Absorption coefficients and surface reflection of two ngle crystal semiconducting plates 20 p3564 N68-32626 [RTS-4511] Diffusion welding of large area silicon wafers without tering electrical properties of semiconductor devices 20 p3487 N68-32663 [NASA-CR-96283] Surface properties of internal conducting semiconactors with thicknesses below Debye length [TS-4689] 20 p3566 N68-32796 ductors with [RTS-4689] Development of microelectronic FSK receivers and evaluation of nemiconductor devices, integrated circuits, and microeminiaturized electronic equipment [AD-671797] 20 p3452 N68-32958 Nuclear radiation effects on electrical properties of metal oxide-allicon surfaces of semiconductor devices 21 p3753 N68-33971

Inherent statistical provens in salation detectors signals from semiconductor radiation detectors 22 p3915 N68-35119 Fabrication and development of annular lithium drifted germanium detector for studying nuclear reaction gamma rays [NASA-CR-1138] 22 p3875 N68-35152 Use of solid state or semiconductor strain gages to increase accuracy, range, and/or stiffness of wind tunnel balances and pressure transducers
[BRL-MR-1928] 22 p3876 N68-35247 22 p3876 N68-35247 Fast neutron radiation effects in semiconductor

(TI-03-68-39) 22 p3848 N68-35574 Mathematical simulation of effects of ionizing radia-[AFCRL-68-0246] ctors 22 p3952 N68-35866

senide-phosphide injector lasers 1) 23 p4072 N68-36475 IAD-6733181 Balloon-borne all staining semiconductor 23 p4065 N68-37201 ICEA-R-35161

Compilation of papers on developments and progress semiconductor technology, electro-optics, electronic quipment, and microelectronics PTD-MT-24-135-67] 23 p4032 N68-37299 equipment, and microel (FTD-MT-24-135-67)

Photoelectric function converters for conversion of electrical and optical signals 23 p4039 N68-37300

Technological procedures of thermal evaporation for deposition of thin films of cadmium sulfide um sulfide 23 p4158 N68-37301

Investigation of nonlinear miconductor thyratrons base ear negative resistances of based on dielectric films 23 p4158 N68-37307

System of pulse parameters for semiconductor diode ontaining p-n junction 23 p4033 N68-37310

ector diagrams and formulas for calculation of real and imaginary parts of impedance of semiconductor devices at high frequencies 23 p4033 N68-37317

Quality control method of technological operations in process manufacture of sen onductors 23 p4159 N68-37320

Electronic system for measuring electrical properties of nonlinear devices [ARPA-E58] 24 p4258 N68-38098 Diffusion welding silicon wafers to heat sink materi-

[NASA-CR-97417] 24 p4262 N68-38101 Measurement of carrier lifetime in semiconductor rvices - annotated bibliography NBS-TN-465] 24 p4333 N68-38148 [NBS-TN-465]

Electrophysical properties of semiconductor materials, and physical processes and reliability of semicon-(FTD-HT-67-194) 24 p4333 N68-38158

SEMICONDUCTOR JUNCTIONS NT JOSEPHSON JUNCTIONS

NT N-N JUNCTIONS NT N-P-N JUNCTIONS NT P-I-N JUNCTIONS P-N JUNCTIONS

P-N-P JUNCTIONS NT NT SILICON JUNCTIONS

Magnesium copper sulfide junctions used as [NASA-TT-F-11450] 05 p0635 N68-14279 Nondestructive analysis of stress environments in im-crystal interfaces film-crystal interfac [AFCRL-67-0564]

08 p1225 N68-17939 Mechanisms of photovoltaic effects in heterojunc-tions in group 2 to 6 compounds with metallic or quasimetallic barrier layers quassmetallic barrier layers [NASA-CR-94131] 11 p1633 N68-21821

Mechanism for photovoltai tions in group 2 to 6 comp quasimetallic barrier layers otovoltaic effects in heterojunc-6 compounds with metallic or rrier layers [NASA-CR-94136] 11 p1633 N68-21831

Germanium junction detectors for nuclear radiation (CEA-R-3251) 12 p1879 N68-22986

Electron gas model of metal semiconductor junction, and influence of exchange correlation energy and lattice potential [REPT.-67-C-209] 14 p2330 N68-24976

Gain, impedance, frequency response, noise, junc-tion parameters, and materials for semiconductor devices and solid state devices [AFCRL-67-0683] 15 p2436 N68-26260 15 p2436 N68-26260

Energy bands of semiconductor junctions of gallium reenides and phosphides and silicon gallium phos-18 p3044 N68-29777 RADC-TR-68-701

Semiconductor junction p nction properties as influenced by crystal defects and [IBM-TR-22-613] 18 p3047 N68-30320

Summary information on various studies to determine metallurgical, electrical, and optical properties of gallium phosphides [NASA-CR-95950] 19 p3354 N68-31416

Vacuum deposition of copper sulfide and cadmium slifide thin films to produce heterojunctions RTS-4278] 20 p3562 N68-32314 [RTS-4278]

subsequently regrown heterojunctions studied with GaSb single crystals [2] Accommodation of lattice mi

New concepts and feasibility study of application of electro-optics, lasers, and semiconductor junctions to

NASA-CR-96717] 21 p3695 N68-34734

Summary data on study of tensometric properties of liform and needle-shaped single crystals of silicon rown through crystallization 23 p4158 N68-37309 Performance data on ingradient resistance and voltage characteristics of SNAP 27 n- and p-type therage characteristic legs [MMM-8406-1757, V. 1, PT. 2] 24 p4293 N68-37481

hermoelastic properties, quality control, variance lysis, and description of test specimens of SNAP n-p-type thermoelastic less and p-type thermoelastic legs [MMM-8406-1757, V. 1, PT. 1] 24 p4293 N68-37527

SEMICONDUCTOR LASERS
NT GALLIUM ARSENIDE LASERS

Laser detector utilizing photodielectric effect in colled semiconductors applied in communication [AFOSR-67-2138] 02 p0257 N68-11127

AFOSR-67-2136 J Principles and applications of lasers 09 p1350 N68-18860 om arsenide laser di sion technique and

Ettingshausen laser the [BMWF-FB-W-67-30] 11 p1709 N68-21197 onic ger and two photon absorp-ductor devices. 15 p2542 N68-26664 tion theory for extrinsic [FTD-MT-24-178-67]

Photon loss in gallium arsenide semiconductor elec-on beam pumped laser by electromagnetic absorption

20 p3492 N68-32263

SEMICONDUCTORS [MATERIALS]
NT ACCEPTOR MATERIALS
NT DONOR MATERIALS
NT METAL OXIDE SEMICONDUCTORS
NT N-TYPE SEMICONDUCTORS
NT P-TYPE SEMICONDUCTORS
NT P-TYPE SEMICONDUCTORS
NT P-TYPE SEMICONDUCTORS

Theory of excitonic insulator in presence of semicon-01 p0122 N68-10105 Hall effect measurement in metal free phthaloe crystal

[TR-9] 01 p0124 N68-10536 Thermal conductivity me nts of europium nd across Curie point

[TR-22] 01 p0125 N68-10715 Single vapor phase growth system for preparing miconductor materials [NASA-CR-90110] 01 p0126 N68-10932

Crossed field microwave amplifier design, electron gun studies, acoustic wave interactions and electromagnetic waves in semiconductors [REPT.-16] 01 p0040 N68-10964

Energy and power relations in semiconductor aterials with drifting majority carriers [AE-4, PT. 2] 02 p0258 N68-11335

[AE-a, F1. 2] Irradiated and heat treated poly/vinyl acetate/ semiconducting polymer development and flare warn-ing system based on monitoring of solar X rays for en-suring astromaut asfety 02 arc202 N68-11449

02 p0292 N68-11449 Semiconducting polymer development - irradiated and heat treated poly/vinyl acetate/

02 p0225 N68-11450 Materials, techniques and problems in application of ceramic thin films to semiconductors, dielectrics, and (AFML-TR-67-226)

03 p0328 N68-12093 Molionic lattices in organic semic [AFCRL-67-0554] 03 miconductor materials 03 p0405 N68-12156

Surface crystalline orientation a pendence of semiconductor interm [AFCRL-67-0530] ation and temperature de-ntermetallic cathodes 03 p0406 N68-12293 Self consistent fields of molecular crystals used as organic semiconductors [AFCRL-67-0517] 03 p0407 N68-12396

Progress report in solid state physics research [AERE-PR/SSP-10] 04 p0556 N68-13120 Hot electrons, bound by charge carrier concentra-tion, in semiconductors at very low temperatures 04 p0557 N68-13249

Conductivity theory developed for intrinsic indium antimonides in high electric fields [RADC-TR-67-607] 04 p0557 N68-13253

Shock compression effects on catalytic activities of oxide semiconductor catalysts 04 p0474 N68-13799

Magnetoconductance of nonquilibrium plasmas in 06 p0894 N68-15600 Semiconductor material and device fabrication, and electrical and acoustic properties

06 p0895 N68-15986

Laser and germanium infrared detector used as diagnostic tool to determine electron-hole plasma density [D1-82-0624] 06 p0892 N68-16092

DEX

voit-

7481

VP :

7527

t in

1127

8860

and

197

orp-

664

lec-

263

105

536

715

ing

132

35

ed

50

of

nd

93

13

20

19

Cathodoluminescence microscopy, diffusion and recombination of excess carriers in gallium amenide, electron microprobe instrumentation, and quantitative electron probe an icroanslysis (USCE: 23) Recombination luminescence of irradiated silicon, nd hole-optical phonon interaction in degenerate sil-NASA-CR-931511 08 p1222 N68-17349 Electron paramag (CERTS-NT-02-4) nce in semiconductors 08 p1223 N68-17644 Radiation effects on sili (CERTS-NT-02-1) miconductors 08 p1223 N68-17649 Semiconducting propert behavior of cuprous oxide [AFOSR-68-0030] and high temperature 08 p1224 N68-17767 High temperature m tric energy conversion 08 p1123 N68-17820 Quantum efficiency of radiant energy photons in semiconductors for converting radiant energy solar, nuclear, or fossil fuels to electric energy energy 08 p1225 N68-17827 Conversion efficiency of photovoltaic cells for converting luminous into electrical energy 08 p1124 N68-17829 ernal noise reduction in infrared detectors -21 09 p1406 N68-18400 Free carriers and interband Faraday rotation in [ARL-67-0284] 09 p1408 N68-18740 Current-voltage characteristics of tunneling p-n junctions in semiconductors [NASA-TN-D-4403] 09 p1315 N68-19062 Electron and nuclear spin-phonon interactions in metals and semiconductors [AFOSR-68-0262] 10 p1579 N68-20179 High density electron-hole gas in semiconductors [APL-TG-230-T540] 11 p1771 N68-20920 Cryostat for measuring resistivity, Hall effect, and asgnetoresistance on semiconductors at low tempera-REPT.-313] 11 p1698 N68-21255 lon implanting techniques for introducing impurities into semiconductors for selective doping of materials [SU-SEL-67-015] 11 p1773 N68-21483 Contribution of valence electrons to nonlinear opti-al susceptibilities in semiconductors (TR-550) 11 p1775 N68-21632 Electrical and photoelectrical properties of organic armiconducting polymers with electronic, but not ionic conductivity modes [JPRS-43040] 11 p1776 N68-21822 Metallurgical, electrical, and optical properties of gallium phosphide crystals [NASA-CR-94308] 12 p1953 N68-22111 X ray irradiation effects on germanium quantum yield and photoconductivity [JPRS-45278] 12 p1929 N68-22534 Electronic component of thermal conductivity in semiconductors (ECOM-2932) 13 p2132 N68-23306 Insulated gate field effect transistors using cadmius elenide or telluride as piezoelectric semiconducto material [NASA-CR-94541] 13 p2067 N68-23447 Angular correlation between emitted photon pairs ad annihilated positrons in solid and liquid metals and miconductors 13 p2134 N68-23600 Dynamic properties of molecular semiconductors nder high pressures 13 p2135 N68-23627 ctrochemical processes on nickel oxide 3] 13 p2015 N68-23687 [TR-3] of electronic materials, devices, and thin films [AFCRL-68-0091] 13 p2137 N68-23849 Management report on university research projects on properties of metallic and nonmetallic materials, semiconductors, inorganic compounds, and noncrystal-Nonradiative recombination processes in semicon-13 p2138 N68-24021 [AD-667743] Dielectric function of semiconductor with inverted band structure of grey tin [TR-53] 13 p2139 N68-24160 13 p2139 N68-24160 Measured electron drift mobilities and life times in lithium-doped zinc oxide crystal [AD-667469] 14 p2328 N68-24347

Electron beam-plauma interactions, cyclotron har-monic instabilities, paramagnetic and semiconductor materials, and harmonic current generation [NASA-CR-94680] 14 p2327 N68-25551 allium arsenide laser modulator, attenuation coeffi its, and semiconductors for optical communication 15 p2507 N68-25868 NASA-TN-D-46081 Gain, impedance, frequency response, noise, junction parameters, and materials for semiconductor devices and solid state devices
[AFCRL 67-0685]

15 p2436 N68-26260 Mobility, Hall effect, and magnetoresistance in miconductors with non-uniform concentration of harged ions TG-230-T5431 15 p2540 N68-26529 Electro-acoustic and electro-optic interaction effects in piezoelectric cadmium sulfide and zinc oxide aemiconductors [E-113] 15 p2541 N68-26572 ques for application to Bulk se phased array microwave equip [RADC-TR-68-210] 16 p2741 N68-27082 Band structure and optical properties of semicon-ductors and insulators 16 p2741 N68-27123 Electrical and metallurgical properties of defects in several compound semiconductors [SU-SEL-68-020] 16 p2742 N68-27318 Transient electroacou mena in cadmium 17 p2955 N68-28549 Mathematical models for an annealing reaction kinetics [NASA-CR-95677] salyzing irradiation and 17 p2960 N68-29561 Superconductivity in sys electron density such as sen [AROD-5171-5-P] s of varying conduction ductors 18 p3149 N68-29609 Traveling electric field and current instabilities in excelectric semiconductor CdS from sound wave and large carrier interactions 18 p3149 N68-29691 Semiconducting diamond production by alloying with lithium and boron by ion bombardment [T-R-632] 18 p3150 N68-29778 Effects of impurities on electrical properties of or-ganic semiconductors and photoconductivity [MRB2031F] 18 p3153 N68-30149 Literature survey of diffusion data for binary com-ound semiconductors ECOM-2942] 18 p3049 N68-30680 ECOM-29421 Pulsed nuclear magnetic resonance studies of relaxa-tion time and internal motions in liquid and solid kryp-ton and neon, ionic crystals, and semiconducting (AFOSR-68-1154) 18 p3031 N68-30742 High pressure syntheses of tungsten compounds and ressure effects on structure of organic semiconductors [AROD-3783-4-C] 19 p3223 N68-31125 Amorphous semic of electronic systems [PA-TR-3698] ctors in radiation hardening Electrical and photoelectrical properties of molecular crystals determined from ionization energies of molecules, and polarization energy of charges [AFOSR.64.1344] 19 p3229 N68-31795 Effect of hydrostatic pres ture on semiconductor pro-Perties [HP-23] 19 p3356 N68-31856 Superconductivity in degenerate semiconducting tin 20 p3561 N68-32306 Stability requirements for linear solid state dis-tributed amplifiers, and semiconductor materials pro-perty data 20 p3453 N68-32415 Traveling wave amplification by drifting carriers in ECOM-29581 20 p3449 N68-32434 Electrochemical properties of nickel oxide com-20 p3420 N68-32586 oring intensity of dose of X ray or gamma rays or both using si [NASA-TT-F-11906] peductor material 20 p3411 N68-32747 Bibliography on meth ds for measuring in-[RADC-TR-68-96] 20 p3566 N68-32798 Determination of resistivity and Hall coefficient of semiconductor materials [NASA-TM-X-53763] 20 p3572 N68-33020

Effects of impurities on activation energy for super cooled, liquid orthophenanthroline 20 p3572 N68-33051 Measurement and interp silicon and germanium [NBS-9807] etation of carrier lifetime in 20 p3574 N68-33313 Optical absorption coefficients in thin semiconduc-tor films 21 m3752 N68-33619 Optical detection and cathodic emission in sensicon-ductor Schottky barriers [AFCRL-68-0302] 21 p3755 N68-34561 injection of minority carrie [MSC-934] illium arsenide by tunnel 21 p3756 N68-34606 Optical properties of electrons in alkali metals [FA-R-1889] 21 p3756 N68-34703 Pulse amplitude and transient response of semicon-uctor radiation detectors to fusion fragments 22 p3949 Nas-35074 Monthly review of selected foreign scientific and (AD-672814) 22 p3950 N68-35364 Radiation effects on se (AFCRL-68-0250) fuctor materials 22 p3824 N68-35366 Semiconductor quantum generator with external (JPRS-46504) 22 p3886 N68-35566 Q switched ruby laser reflectance enhancement of single and polycrystalline semiconductors [SAMSO-TR-68-283] 22 p3952 N68-35955 Wave propagation and instabilities in semimetals and miconductors in presence of electric and magnetic 23 p4145 N68-36022 Foreign literature on mill unik 10 measurements, tern uctor materials, nuclear cher meter band resonators, iry systems for semicon-istry, and Venus probes 23 p4107 N66-36352 Electron physics research electron emission contaminat garnets, and ion bombardment [RT/EL/67/15] on helium 3 counters, ion, iron and gedolinium t of semiconductors 23 p4150 N68-36462 Effect of ion impact on single crystals of silicon 23 p4150 N68-36463 nal conductivity of magnesium stannide 23 p4154 N68-36847 IIS-17121 ited cadmium sulfide thin ide semiconductors for of electron, phonon in-Preparation of vapor depos lms on indium antimoni coustic propagation studies INASA-CR-98005) 23 p4155 N68-36956 Theory of vortices in type II se 23 p4157 N68-37261 ers on developments and progress nology, electro-optics, electronic electronics Compilation of papers on de in semiconductor technology, equipment, and microelectron [FTD-MT-24-135-67] 23 p4032 N68-37299 pedance of channel rity charge carriers 23 p4033 N68-37315 Stabilization of input insistors by extraction of m rization of selected metals, stors, and organic com-properties 24 p4218 N68-38103 pounds based on electronic pr [AFCRL-68-0151] Progress report for electronic sciences laboratory [SAPR-7] 24 p4335 N68-38480 EMIEMPIRICAL EQUATIONS Simple semiempirical correlation by ne (ANL-TRANS-548) tion for angular seutrons 09 p1393 N68-19054 Semiempirical equal thermophysical proper flows of various fluids (FTD-MT-24-L15-67) r incorporating variable 18 p3187 N68-30[43 Semi-empirical quantum mechanical calculations of olecular electronic structure of organic molecules 22 p3823 N68-35169 SEMIMETALS U METALLOIDS Secret Sold Late beauty NDERS U TRANSMITTERS U PERCEPTION SE ORGANS COCHLEA CORNEA CORTI ORGAN U EAR
U EARDRUMS
U EYE [ANATOMY]
U GRAVIRECEPTORS
U LABYRINTH Constitution of the section of the s

discourse de spiritaged o 14 MENTE AND ADDRESS OF

SENSES MIDDLE EAR OTOLITH ORGANS PROPRIOCEPTORS PUPILS RETINA SEMICIRCULAR CANALS VESTIBULES U SENSORY PERCEPTION U SENSITIVITY SENSING U DETECTION SENSITIVITY
NT IMPACT RESISTANCE
NT LIGHT ADAPTATION
NT NOTCH SENSITIVITY
NT PAIN SENSITIVITY NT PHOTOSENSITIVITY
NT PHOTOTROPISM
NT PROPELLANT SENSITIVITY
NT RADIATION TOLERANCE Optical effects in semiconductors [R67SD64] 02 02 p0258 N68-11405 Sensitivity testing - Methods, statistical considera-ns, and selection rules 02 p0230 N68-11720 Effect of contamination of flowing media on turbine flowmeter semitivity [DLR-MITT.-67-19] 07 p0995 N68-16186 Control system synthesis to minir 11 p1676 N68-20676 Absolute stability notion extended to include parameter variations of linear part of system [NASA-CR-73218] 12 p1853 N68-22440 Sensitivity of silicon detectors to fluorescence X rays (UCID-15277) . 12 p1875 N68-22644 Zonal sensitivity of large area pyroelectric radiation (RRE-TRANS-172) 12 p1876 N68-22693 iques for linear systems sitivity of optimal con-Analysis and synthe [NASA-CR-93731] amations 13 p2044 N68-23561 Trajectory sensitivity of optin nal control system 13 p2044 N68-23562 itivity of turbulent flow to changes in Mach and Reynolds numbe [NPL-AERO-1057] 14 p2240 N68-24729 Extensiometer calibrating rig with high sensitivity [AID-METRO/12] 14 p2256 N68-24903 dratic sensitivity terms in linear as means of minimizing trajectory sensitivity {RE-320J} 14 p2232 N68-24998 One ionization counter relability, sensitivity and energy levels, calculated by computer program [CEA-R-3190] 14 p2314 N68-25162 Precautions for decreasing puto interference around nuclear r [CEA-R-3333] lse amplifier sensitivity 14 p2293 N68-25163 Calibrated reference blocks for ultrasonic non-estructive materials testing 15 p2472 N68-25811 Algorithmic method of generating sensitivity func-ons for analysis of single input, linear, time invariant introl system 15 p2439 N68-25993 Sensitivity functions defined in frequency domain ad state space represention of linear time invariant mamic systems 16 p2634 N68-27714 tive detectors for ch charged particles 16 p2664 N68-28019 (CEA-BIB-102) Solid surface study by er n of excelectrons after X ray irradiation (UCRL-TRANS-10225) 17 p2959 N68-29118 Vector flow graph sensitive on thesis of transfer functions tivity analysis and optimum 18 p3101 N68-29766 Dynamic response and se repiratory control system sitivity of the human

18 p3009 N68-30074

21 p3673 N68-34386

Increasing sensitivity of spectrographic determina-tion of trace elements [TG-230-T548] 18 p3029 N68-30540

Sensitivity design characteristics for feedback op-

Transfer function approach to sensitivity analysis by [NASA-TM-X-61193] Use of companion transform timization and adaptive control [R-386] Germanium-lithium gamma ray spectrometers for high resolution and sensitivity spectral analysis of SENSORS

radionuclides (UCRL-50437) 22 p3879 N68-35677 Dynamic response of X ray fluorescence isotopic spectrometer with lithium-drifted silicon detector [USNRDL-TR-68-77] 24 p4260 N68-38482 SENSITIZING Sensitizing effect of liquid organic nitrates on high safety ammonium nitrate explosives 02 p0177 N68-11463 ENSOR-AIRBORNE TERRAIN ANALYSIS U TERRAIN ANALYSIS ORIMOTOR PERFORMANCE PSYCHOMOTOR PERFORMANCE Ability of man to orient himself and move about in reduced gravity of luna [NASA-TM-X-57241] 09 p1289 N68-19011 Stimulus duration and inter-sti tion effect on motion perception dus interval varia-15 p2400 N68-26041 Heat stress and prolonged activity effects on human perceptual motor performance [NASA-CR-1153] 19 p3216 N68-31480 Compensation for displaced vision and intersensory onflict as factor in adaptation 20 p3409 N68-32259 Factors and procedures influencing statistical relia-lity of agricultural data from earth orbiting sensor [NASA-CR-90211] 02 p0293 N68-11810 Design and operator of solar observator n of triaxial magnetometer facility of solar observatory (TR-0158/9220-02/-5) 13 p2046 N68-23047 Calibration curves for high pressure piezoelectric [T-17/67] 18 p3047 N68-30390 Calibration and align niques for inertial sensing unit [NASA-CR-86077] 18 p3113 N68-30571 Parametric and procedural tradeoffs for alignment and calibration of inertial sensing unit [NASA-CR-86078] 18 p3171 N68-30572 SENSORY DEPRIVATION Argus project research on psychological effects of icial isolation and sensory deprivation 01 p0010 N68-10410 (REPT.-31) tion, and sensory rear-auditory, and somesthetic stial orientation Isolation, sensory depri-rangement effects on visual sensation, perception, a [NASA-CR-90498] 02 p0167 N68-11837 an space flight 04 p0453 N68-13182 in of sensory deprivation ring manned space flight 04 p0455 N68-13196 ects of solitude exposure dur-ory deprivation tests 09 p1283 N68-18923 Psychophysiological effects of soliti g prolonged human sensory deprivat Isolation effects on se perception and its Physiological correlates [NADC-MR-6718] 10 p1469 N68-20457 Work capacity, and mental and physical per-formance of male charing prolonged confinement in small chamber aggravated by social isolation and sen-sory deprivation 17 p2819 N68-28512 SENSORY DISCRIMINATION
NT BRIGHTNESS DISCRIMINATION
NT TACTILE DISCRIMINATION
NT VISUAL DISCRIMINATION ory, burning, chemical and infrared spectro-tests for identification of plastics -67-83] 04 p0524 N68-12806 (GE/K-67-83) Sensory signal brightness flight by acoustic intensity ma luminance, and duration [AM-67-16] 06 p0777 N68-15346 Signal to noise ratios and frequency effects on auditory frequency discrimination by humans
16 p2603 N68-27222

Electrophysiological study of sound localization and auditory discrimination in monkeys [NASA-CR-82338] [6 p2597 N68-27436

Preferred listening levels related to levels of max-num speech discrimination ability 24 p4205 N68-37461 termine unisensory and aditory discrimination 24 p4206 N68-37641 uman experiments to determ mory practice effects on audito SENSORY FEEDBACK

Interrelationships between relay thalamic nucleus ad projection optic region of cortex
15 p2396 N68-26269 ORY PERCEPTION

ENSORY PERCEPTION
NT AUTOKINESIS
NT CONSCIOUSNESS
NT CRITICAL FLICKER FUSION
NT EXTRASENSORY PERCEPTION
NT PROPRIOCETION
NT SPACE PERCEPTION
NT SACE PERCEPTION
NT VEXTICAL PERCEPTION
NT VISUAL DISCRIMINATION
NT VISUAL DISCRIMINATION
NT VISUAL PERCEPTION

21 p3674 N68-34423

tion in parameter op-

22 p3851 N68-35273

Analysis of neural shift register networks, and sychophysiological sensory color receptor model 04 p0456 N68-13475

Correlation between sensation time and reaction time based on physiological tests patterned on astronomic observations of star transients. [NASA-TT-F-11350] 08 p1133 N68-18009 an depth perception of television displays in and nonatereo presentations

09 p1289 N68-19145 (NASA-CR-61630) in vigilance task per-Sense mode and couplin formance in terms of time on [USAMRL-753] 10 p1476 N68-20263

Flight experience and sensory perception as qualifi-tion criteria in manned space flight 10 p1471 N68-20553

Plant perception of gravitational and centrifugal forces and light stimuli [ANL-TRANS-545] 11 p1636 N68-21387 11 p1636 N68-21387

Experimental study of time perception during information processing with short intervals
[IZF-1968-10] 20 p3409 N68-32407 of lateral signal percep-

Experimental dete tion against continuo [IZF-[968-13] noise 20 p3435 N68-32410 Laboratory studies on seni ory perception of X rays

by rats [NYO-3698-1] 22 p3812 N68-35658 SENSORY STIMULATION

Self and electrode controlled stimulation of brain to etermine biophysics of intercranial self stimulation in (ARL-TR-67-25) 05 p0610 N68-14359

Photic stimulation and electroencephalograms as creening techniques to study flicker in helicopter 08 p1128 N68-17581

Correlation between sensation time and reaction ime based on physiological tests patterned on as-ronomic observations of star transients [NASA-TT-F-11350] 08 p1133 N68-18009

Human response to time-vary using systems analysis approach [TDCK-49194] se-varying sensory stimul 08 p1137 N68-18218

Animal studies of stimulus effects on otolith organs ad semicircular canals, and reflex time of rotation

nystagmus in man (NASA-TT-F-11489) 10 p1462 N68-19823 Plant perception of gravitational and centrifugal forces and light stimuli [ANL-TRANS-545] 11 p1636 N68-21387

Eyeball counterroll measurement for determining namic responses of primate vestibular system to 13 p1998 N68-23244 GE/EE/678-7)

X ray irradiation visual cell stimulation in rabbit [ORO-3599-1] 16 p2600 N68-28053

uirrel electrophysiological arying in brightness and hue Rat and ground sponse to light stim-sing electroretinogra 17 p2828 N68-28398

Subject orientation effects of vestibular stimulation task performance and involuntary eye motion
17 p2831 N68-29132

d semation and nystagmus as indican 17 p2825 N68-29158

Proposed neural excitation by interaction of ul-tranonic and electromagnetic energy [AFOSR-68-0879] 24 p4296 N68-37770 U WORDS [LANGUAGE]

A-1110

timal controls [NASA-CR-96820]

SEPARAT Visco AS-67 Turb REPT. Fluid AAEC Anal stream Inter ARL-6

Flow

configu (RE-31

Lami

TAE-7

SUBJE

Flow tion wit ARC-I Separ NASA TAE-7 Analitex sept MIT-T Syme INASA

> Boun Hype separat isothers [HS-1] Mixi TAE-Effec

Dye periodi disturbe [TG-94

Static

with she

tion zor Num in local INASA Mod on seco

Sepa effects (ONE) Brea NASA Turb (MD-1

and hig surface

of max--37461 ry and mon -37641 nucleus

NDEX

-26269

and 13475 action on as-18009 ays in 19145 per-20263

20553 ifugal 1387 infor-2407 rcep-2410

ualif.

rays 5658 in to on in 4359 s as

legal 387 ning 244

823

053 398 tion 132 ants

158

SEPARATED FLOW NT BOUNDARY LAYER SEPARATION

Viscous separated flow fields downstream of backward facing step in laminar supersonic flow calculated by means of integral relations (AS-67-9) 02 p0198 N68-11331

Turbulent boundary layer experiments near separa-tion slong circular cylinder with flow in axial direction [REPT.-91] 02 p0202 N68-11763

Fluid flow distribution at exit from right cylindrical, randomly packed bed of spheres
[AAEC/TM-354] 03 p0369 N68-12051

Analysis of separated, nonuniform, axisymmetric up-stream flow in propulsion nozzles [ONERA-TP-506] 03 p0335 N68-12132

Interdependence of flow fields of two surfaces of fin-blusted flat plate model at hypersonic speeds [ARL-67-0188] 04 p0432 N68-13009

Flow separation effects on serodynamic control characteristics studied on hypersonic delta wing-body configuration at Mach 8 [RE-312] 04 p0437 N68-13632 04 p0437 N68-13632

Laminar heat transfer to two dimensional blunt flat nosed body in transonic and supersonic flow [TAE-75] 04 p0597 N68-13654

Flow produced by turbulent boundary layer interac-tion with normal shock wave of sufficient strength to cause separation (ARC-R&M-3502)

... 04 p0438 N68-13904 Separation theories for subsonic, and supersonic flows [NASA-CR-61433]

05 p0648 N68-14731 Laminar and transitional heat transfer in two dimen-onal separated flow behind sharp protruding leading Ige step model edge step s 06 p0925 N68-15451

Analytical model and wind tunnel tests to study vor-x separation on slender bodies of elliptic cross section

06 p0763 N68-15685 Symmetrical and unsymmetrical flow separation in mpersonic nozzles [NASA-CR-92587] 06 p0830 N68-15974

Dye and neutral density particle tracers in parallel eriodic boundary layer flow over flat plates with

07 p0988 N68-16921 TG-9441 Static pressure and flow field for flat plate model with short trailing-edge flap [NASA-TN-D-4308] 08 p1160 N68-17376

Boundary layer separation applied to thrust vector outrol

08 pl 160 N68-17422

Hypersonic, laminar, axisymmetric compression-separation with significant transverse curvature on nothermal, but slightly cooled wall 08 p1162 N68-17856

Mixing function for integral analysis on separated oundary layer flow TAE-77 08 p1165 N68-18204

tion zones of multistage compressors on separated zone rotation speeds

09 p1266 N68-18688 Numerical analysis to determine interference effects in local wind flow about Saturn 5 launcher umbilical

11 p1789 N68-21298 [NASA-CR-61198] Model studies compared for on secondary recovery operation red for effect of interstrata flow

12 p1858 N68-22079 Separated turbulent flows and initial boundary layer effects - theory and applications [ONERA-TP-320] 12 p1860 N68-22165

Breakaway flow in stage characteristics of axial com-pressors with large hub diameters [NASA-TT-F-1 [583] 12 p1810 N68-22251

Turbulent separation phenor dimensional fully stalled diffuser [MD-19] senon studied in two 13 p2051 N68-23337

Boundary layer characteristics for two phase /gas-liquid spray/ flow over circular cylinder 14 p2242 N68-25110

Integral methods for predicting afterbody heat transfer to blunt two dimensional configuration sub-jected to separated flow [NASA-TN-D-4443] 16 p2650 N68-28282 ASA-TN-D-1-1-3; Steady separated flow past bluff bodies 17 p2871 N68-28599

Cascade wind tunnel study of turbulence effects on compressor efficiency loss at small Reynolds number and high altitude from laminar separated flow on blade [K-TRANS-31] 17 p2803 N68-29054 Subsonic wind tunnel studies of vortices on slender rotating bodies and effects on aerodynamic opefficients

[ISL-10/66] 17 p2804 N68-29391 Laminar flow separation on flat plate induced by deflected trailing-edge flap at hypersonic speed [NASA-TN-D-4671] 17 p2804 N68-29405

Optical observation of separated flow around oscillating aerofoil at high mean attack angles
[NAL-TR-148] 17 p2804 N68-29427

Inert particle effects on particle to fluid mass transfer om single sphere at low Reynolds and high Peclet umber flow 18 p3062 N68-30036

Pressure distribution on conical and cylindrical flared body at Mach 14 with flow separation [ARL-68-0032] 18 p2997 N68-30112

Study of viscous effects in separated compressible 19 p3263 N68-31224

undary layer approximations for analysis of ar viscous-invisced interactions in supersonic flow

20 p3462 N68-32900 [AFOSR-68-1569] Aeronautical engineering studies - stability of degenerating conical shells, pressure sealing of hydrau-lic equipment, convective heat exchange of gas turbine disks, and vibrating grofile flow [FTD-MT-24-131-67] 20 p3538 N68-33261

and boundary layers, and flow models 20 p3466 N68-33308 Turbulent separated flows wake mechanisms, shear layers, [VKI-CN-668] Lines of separation of three dimensional boundary layer on curvilinear surface [FTD-MT-67-36] 23 p4046 N68-36340

Surface roughne hypersonic speeds [VKI-TN-41] ess effect on flared ogive cylinder at 24 p4248 N68-38449 SEPARATION

for separated-turn Design [ORNL-4175] 10 p1512 N68-19905

inless steel alloys 19 p3294 N68-31706 Boron segregati [KAPL-M-6731]

AIR FILTERS CLASSIFIERS DIVIDERS

DIVIDERS
DRYING APPARATUS
DUST COLLECTORS
ELECTROSTATIC PRECIPITATORS
EVAPORATORS
FLUID FILTERS

NT SIEVES NT SIZING SCREENS

Separator materials evaluation for use in high rate, non-reserve zinc-silver oxide batteries to operate up to 165 deg F [DAC-59852-S1] 01 p0005 N68-10578

Properties of electrolytes, separators, electrodes, and deposits in silver-tinc cells [NASA-CR-90232] 01 p0006 N68-10970 01 p0006 N68-10970

Ligand-containing polymers for use as separator materials in sterilizable silver-zinc batteries [NASA-CR-90329] 02 p0161 N68-11134 Continuous coating a eratus for heat sterilizable

battery separators [NASA-CR-90330] 02 p0162 N68-11225 Thermally sterilized nickel cadmium battery

[NASA-CR-90501] 02 p0163 N68-11804 Centrifugal separators for steam flow regulation in boiling water reactors [EURAEC-1898] 05 p0694 N68-14430

Ethylene/methyl acrylate copolymer synthesis for silver-zinc battery separators [NASA-CR-92551] 06 p0770 N68-15889 Air separators for air breathing engines in spacecraft

boosters [DLR-FB-67-79] 07 p1072 N68-16184 Radial vane steam separator for KRB reactor, equa-tions of flow and pressure drop, and large steam [GEAP-5524] 07 p1027 N68-16308

Electrode design, inorganic separators, and per-formance tests of multiplate five ampere-hour silver-zinc battery cell [NASA-CR-965] 07 p0937 N68-16321

Steam separators for boiling water reactors [EURAEC-1900] 07 p1029 N68-16566 Physical and chemical stability, transport properties, and battery performance in simplified cell design for al-laine silver battery apparator materials (NASA-CR-92806) 07 20940, NAS-14914

Ligand containing polymers for use as heat sterifiza-ble separators for silver zinc battery [NASA-CR-93176] 06 p1118 N68-17232

Zirconium oxide loadings and coating methods aried to improve separators for heat sterilizable bat-(NASA-CR-93194) 08 pl119 N68-17493

Analysis and separation of boron isotopes [CEA-R-3230] 09 p1296 N68-18932 Performance of centrifugal miner-settler in reprocessing of nucleur fuel [DP-MS-67-71] 09 p1348 N68-19027

Design, fabrication, and testing of vented recharges ble silver-cadmium [ECOM-03359-F]

10 p1460 N68-19805 Evaluation of separating membrane materials for zinc silver oxide batteries [DAC-59852-F] 11 p1628 N68-20939

Copolymeric separator (sterilizable battery [NASA-CR-94322] film preparation for heat

12 p1818 N68-22211 Electron radiation effects on cellophane separator in silves zinc cells [NASA-TM-X-63170] 12 p1819 N68-22226

Silver zinc battery separator material development

and production [NASA-CR-94785] 14 p2192 N68-25011 Dip coating method for manufacturing sterilin hattery tape separators [NASA-CR-94766] 14 p2193 N68-25

14 p2193 N68-25105 Manufacturing processes and electrical, chemical, and mechanical properties of ion exchange inorganic

17 p2811 N68-28724

Tensile strength, electrolyte retention, electric re-stance, and dimensional stability tests to acreen parator materials for eliver zinc batteries 17 p2811 N68-28725

Ion-optical system for increasing yield of ion source for electromagnetic separator [FTD-MT-24-231-67] 18 p3145 N68-30618 18 p3145 N68-30618 pe separator producing high

CEA-R-34441 19 p3258 N68-31232 Manufacturing pasted silver electrodes and premod cadmium electrodes and separator system for sealed rechargeable silver cadmium batteries [ECOM-03358-2] 21 p3628 N68-34463

Ethylene/acrylic acid separators for silver zinc bat-[NASA-CR-97226] 23 p4009 N68-36585

Centrifugal mixer settler performance for phase [DP-1140] 24 p4293 N68-37563

Katial vane steam separator [GEAP-5636] 24 p4295 N68-37822

amic characteristics of separating channel 24 p4320 N68-38194 Design concepts and dyr proton accelerator waveguide SEPTUM

Solution of finite length septum problem by scatter-ing matrix techniques with application to periodic mode suppressors 11 p1676 N68-20631

SEQUENCING

Search time of periodic pulse sequence in pulse flux using triggers 01 p0044 N68-16326

Priority model concept for flight operations planning of manned spacecraft [MTR-256] 03 p0414 N68-12227

Advanced radar traffic control system with computer assistance in sequencing and spacing of arrival aircraft [RD-67-2] 05 p0686 N68-13946

Synchronization process by which maximum length, near, and pseudorandom sequence is cross correlated ith small sample of itself with small (R-67-16) 08 p1147 N68-17875

Zero-one linear progra problems with limited reso [RM-5561-PR] g model for scheduling 09 p1357 N68-18347

Fundamental theorems for ur conditional bases 11 p1723 N6E-20668

Inverse theorem on b of complex variables [APL-TG-230-T539] on of fu 11 p1725 N68-20771

Mathemati scheduling pr [P-3790] 13 p2093 N68-23376

m using forecasting and 14 p2377 N68-25125

SUB

INA

SERV

D

Fi and man mod [NA

U

SERVE

U

U

So divik (WR

SERVO

Di

devic [UCI

An

SETVO

Extrol a

AFC

Ser of ske [CAL

Ser flow i

Soi divik (WRI

Fat trol di (NAS

Der trol us [NAS

Ser and a trocke (NAS

Co

SERVE

0

Sequencing cuntrol methods to relate detectable rallelism in computer programs to machine organiza-15 p2433 N68-26527 [ECOM-02463-6] SEQUENTIAL ANALYSIS Sequential delay sampling time analyzer [NSJ-TR-79] 01 p0065 N68-10713 Comparison and categorization of facts sequences for from 3 to 17 two-level facto [ARL-67-0141] 03 p0350 m of factorial replicate 03 p0358 N68-11969 Telescoping of block s for searching techniques [NASA-TM-X-52374] ces in factorial models 05 p0682 N68-13988 (PB-175925) Optimization, based on backward programming, of finite sequential pattern recognition [TR-EE67-9] 07 p0981 N68-17167 07 p0981 N68-17167 Permutations, and a problems related to Eulerin [FOA-P-B-8001-11, V. 1] alternative sequences for rian numbers 09 p1366 N68-19477 Sequence of numbers related to exponential function 10 p1545 N68-19670 Information theory in sequential analysis [ORNL-4208] 11 p1730 N68-21209 Sequential procedures for discriminating between fixed sample size design and linear versus quadratic model [AROD-5506-8-M] 13 p2092 N68-23352 Formulation of problems in a criments defined and general equential analysis formulation ems in sequential design of ex-generalized as conventional 13 p2094 N68-23492 Algorithmic solutions for solving sequential Boolean equations [AFOSR-68-0651] 13 p2095 N68-23802 Search problems involving moving targets solved by using Markov decision models [NASA-CR-94611] 13 p2095 N68-23927 13 p2095 N68-23927 Sequential state and pa linear systems and applicat [TR-0138/3306/-1] rter estimation in nonon to reactor control 15 p2441 N68-26385 Sequential Monte Carlo sampling method for linear systems of equations [MRC-TSR-816] 15 p2493 N68-26415 Finite stopping rules and nonparametric methods in ature-ordered sequential pattern recognition system used on multistage decision process 16 p2635 N68-27816 Statistical gamma distribution sequence applied to sequential analys [TR-60] on and Martingale 18 p3101 N68-29569 Dynamic thermoelasticity problems of plates and shells in presence of radiation - sequential analysis ap-proach to heat conduction and thermoelasticity equa-tions [RM-5689-PR] 18 p3178 N68-30224 Stopping rules which assure lower confidence limits on finite lot reliability under rectifying type inspection [TR-135] 18 p3 [05 N68-30406 Sequence of considering advection, modification and diurnal variation in forecasting surface temper [M-543] 20 p3522 N68-32777 t elastic structures 21 p3783 N68-33787 Sequential design of redunda SEQUENTIAL COMPUTERS Simulated sequential decoder program in Fortran for solar mission simulat [NASA-CR-73174] 06 p0802 N68-16048 [AD-652492] Algebraic test syntheses for computers with diagnos-07 p0978 N68-16968 (INP-566/PL1 Theory of parallel acting auto 10 p1510 N68-20283 Regular expressions and checking experiments for presentation of state behavior of sequential machines 12 p1854 N68-23041 [PIBMRI-1378-67] ne problem for lambda red machines 13 p2096 N68-24192 Unsolvability of eq [AFCRL-68-0012] Parallel operating cor ter storage simulator based on sequential computer ope [FTD-HT-67-2]

18 p3043 N68-30739

22 p3840 N68-35005

22 p3841 N68-35202

us for finite sequential

al relay circuit with predeter-21 p3663 N68-33966

Maximal memory binary input/binary output sequential machines

Decoder analysis for convolutional codes by tochastic sequential machine model stochastic sequential [NASA-CR-97101] 22 p3839 N68-35912 SEQUENTIAL CONTROL mming used to find sequence which rocessing time for parts on three is - optimal scheduling Dynamic programming uninimizes total processing 01 p0042 N68-10312 ntial decoding techni ns grout 04 p0477 N68-13214 Tape programmed atmospheric particle sequential 07 p0995 N68-16310 Core sequential decoding program for advanced [NASA-CR-73175] 07 p0968 N68-16375 Random tree code review, horseback analysis of con-catenation schemes, and simulations in sequential cod-ing system design for advanced solar missions [NASA-CR-73176] 07 p0968 N68-16388 Sequential detection, and control for feedback com-junications 07 p0965 N68-16976 Binary low redundancy block codes for correcting from patterns caused by additive noise, or synchroniza-[AFCRL-67-0591] 09 p1302 N68-18387 Asynchronous finite state common stems such as spacecraft attitude cont 15 p24 ous finite state controllers for dynamic de controllers 15 p2440 N68-26006 Sequential coding with feedback for class of time-varying channels 16 p2622 N68-27405 Conversion of sequential s with savings in logical elemen [NASA-CR-95880] chine into periodic one, 18 p3041 N68-30280 Shift registers employed in sequential control computer design techniques 22 p3839 N68-34814 Multichannel iterative principles and quality indices for automatic control [JPRS-46523] 23 p4036 N68-36439 Construction and equalization of multichannel itera-tive networks regarding reference input variables 23 p4036 N68-36441 Stochastic sequential machine figures of merit calculated for performance and task complexity
23 p4026 N68-36673 Program generator deck for documentation of pro-23 p4027 N68-36714 ERM: 5083-FR | SERIES [MATHEMATICS]

NT ASYMPTOTIC SERIES

NT FOURIER SERIES

NT MACLAURIN SERIES

NT PADE APPROXIMATION

NT POWER SERIES

NT PRONY SERIES NT TAYLOR SERIES Self consistent treatment of collective vibrations in 01 p0102 N68-10129 Computer methods for series solution of diffusion problems and resultant tables
[UCRL-17608] 01 p0085 N68-10657 Convergence rate in renewal functions and Markov cesses ____ 03 p0358 N68-11955 Sum rules for inelastic electron scattering from 03 p0389 N68-12373 Formula for expanding higher order derivatives of function tanh z in powers of tanh z and A-numbers [NASA-TN-D-4296] . 05 p0683 N68-14077 Characteristic function with certain satisfied condi-ons used fur theorem proof for lattice expansions of finitely divisible lattices 06 p0865 N68-15606 Approximation theory for shells of rotation using half-lurn method and expansion of unknown values into series of Legendres polynomials [FTD-HT-66-530] 06 p0922 N68-15677

Series expansions used in solutions for transunic flow in throat region of two dimensional nozale with arbitra-

Boundary value problems for spherically isotropic elastic media solved in terms of infinite series [NASA-CR-92555] 06 p0922 N68-15771

06 p0829 N68-15759

ve odd integers 06 p0866 N68-15772

semiconductors [FTD-HT-66-608]

18 p3153 N68-30102

(ARC-R&M-3481)

Sums of squares of cor [P-3744]

Double sums connected with zeros of Dirichlet L-se-09 p1362 N68-18639 Functional equation method for estimating conver-gence interval and truncation error for periodic series [TR-538] 11 p1730 N68-21375 Nonlinear transformations for expansion and evalua-tion of infinite series and first kind integrals [G3681.21.01B] 14 p2280 N68-24587 Use of inertia as perturbation parameter for develop-ing series solutions for response of system to harmonic excitation, and expansion of series solutions as con-tinued fractions 14 p2358 N68-25087 Chebyshev type inequality for sums of independent random variables [AD-668978] 16 p2693 N68-27192 Applying series of real variables to solving doubly triodic biharmonic problems of elasticity theory 18 p3174 N68-29649 Series expansion method for distinguishing far field from near field measurements of coherent and partially coherent underwater sound fields [SR-1] 21 p3662 N68-34626 Series expansion in reproducing Hilbert space for random processes of information theory [RR-68-3] 22 p3898 N68-35108 Numerical evaluation of the series expansion method r prediction of far field intensity from near field (REPT.-0424-SR-2) 22 p3917 N68-35368 SERPENTINE Hydrothermal synthesis of fibrous serpentine from magnesium oxide and silica gel [RTS-4305] 20 p3418 N68-32500 SERT (ROCKET TESTS)
U SPACE ELECTRIC ROCKET TESTS SERUMS X ray irradiation effects on plasmatic fibrinogen and (CEA-R-3012) 22 p3813 N68-35779 SERVICE LIFE Performance and service life tests conducted with 300-mWX band triode oscillators [ECOM-01795-6] 02 p0187 N68-11121 Simulated service life of strain gage pressure transdu-[NASA-CR-91117] 03 p0341 N68-11963 n cells subjected to life cycle as secondary spacecraft cells 04 p0448 N68-13061 Sealed nickel cade test to evaluate their [NASA-CR-91289] eir use as secor Targets with long lifes for sealed miniature ion accelerators for neutron production
[KN-67-655/R/]
05 p0644 N68-14575 Comparision of foreign manufactured S-12 silver-zinc cells with domestic cells [ECOM-2884] 06 p0768 N68-15275 age effects on useful life of ectors operated in geomag-Low energy proton dan licon surface barrier det netically trapped radiat NASA-TM-X-63082] 06 p0844 N68-15364 Fatigue life tests of polyester film tape recorder belts [NASA-CR-92519] 06 p0850 N68-15504 Unconditional time to fair om stochastic hazard function re distribution derived 09 p1357 N68-18357 Nonparametric techniques for probability distribu-on, probability density, and hazard function estimates [NASA-CR-93483] 09 p1359 N68-18499 Performance and life capabilities of standard oxide cathode, pore-dispenser, and coated particle cathodes [NASA-CR-93672] 09 p1316 N68-19363 Improved service life discharges in copper oxide [NASA-TN-D-4306] through reduction of self e-magnesium thermal cells 10 p1460 N68-20344 Life cycle design stages, systems levels, tasks in mintenance, and maintainability factors in systems en-10 p1617 N68-20521 Assessing F-9J aircraft service life and replacement by A-4 aircraft in advanced jet pilot training program [INS-RC-23] 13 p1993 N68-24022 Service life of aged and used nylon parachutes [TR-68-45-CM] 16 p2689 N68-27394 d carbon steel cutting tool 16 p2681 N68-27785 Using phase shift between current through it to mean voltage across diode and are short service lives in

Asynchronous sequent mined reliability [FTD-HT-67-32]

EX

1639

375

dua-

587

087

iont

192

ubly

Seld.

626

for

108

368

NO.

779

121

du-

575

ver-

275

164

lts 504

ved

157

bu-les

199

144

i in

121

22

94

185

02

(BMWF-FILW-68-34)

SERVOMECHANISMS NT SERVOAMPLIFIERS

21 p3722 N68-34162

Qualitative prediction methods for reliability, wear, and service life of machine tools with fatigue as life [FTD-HT-67-22] 18 p3081 N68-30446 Influence of thickness of lubricant layer on service life on autifriction bearings [FTD-MT-24-198-67] 18 p3082 N68-30773 Cycle life test progra trochemical cells [NASA-CR-96645] tary spacecraft elec-21 m3628 N68-34752 Very high burnup ver for long life nuclear rea [NASA-TN-D-4860] sport fuel pin concept 23 p4104 N68-37209 24 p4200 N68-38001 Operational and service plasma generator [IPP-4/65] life experience with laar 1 24 p4328 N68-38500 SERVICE MODULES Susceptibility of Apollo service module to mechanical shock transmitted from pyrotechnic separation line 14 p2365 N68-25527 Development and verification of vibration test requirements for Apollo 16 p2787 N68-27995 Fabrication of scale model of Apollo service module and lunar module cone extension, fairing between com-mand and service modules, and modified command module base plate and sting module base plate as (NASA-CR-92239) 20 p3595 N68-33517 U MEDICAL SERVICES
U METEOROLOGICAL SERVICES U FEEDBACK CONTROL
U SERVOCONTROL U ACTUATORS
U SERVOMOTORS SERVOAMPLIFIERS ower amplifier for Jin-ang control systems 18 p3002 N68-30249 Solid state saturat divik aircraft aileron a (WRE-TM-ISD-121) Laboratory measure nt on servo loops of inertial platform system BMWF-FB-W-68-371 21 p3722 N68-34095 SERVOCONTROL. Distinguishability threshold state stabilization for entrolling industrial processes 01 p0041 N68-10302 Pneumatic actuator servo loop system and fluidic devices for SPR-6 reactor control [UCID-15204] 03 p0380 N68-12705 Analog computer simulation st servo system to control experime n study of precise hybrid rimental optical tracking 04 p0489 N68-13807 INASA-TM-X-630681 Impedance measureme for calculating alleron stal of servocontrol systems 05 p0749 N68-14565 ls in linear optimal con-aircraft control system 05 p0640 N68-14915 Explicit mathem trol applied to variable ([CAL-IM-1836-F-1] Mathematical analysi lunar probe pointing tel [AFCRL-67-0647] rvo electronic system for control 11 p1676 N68-20747 ple shaker tests 14 p2364 N68-25510 Servocontrol exoskeleton for of skeletal muscle forces and be [CAL-VO-2401-E-1] nic measurement er dynas 15 p2402 N68-26602 Servocontrolled gas in system for regulation of flow into vacuum cali [AEDC-TR-68-100] 8 p3080 N68-29752 rvo power amplifier for Jin-ang bang control systems 18 p3002 N68-30249 Solid state saturating divik aircraft sileron i Fabrication and test of flueric position servo for con-trol drum of nuclear rocket engine [NASA-CR-72423] 19 p3203 N68-31116 Design schematics and systems analysis of servo con-trol unit used on endless loop magnetic tape recorder [NASA-CR-95952] 19 p3252 N68-31461 Servocontroller for programming atomic emission of tample vaporization in direct current are spec-ochemical analysis trochemical analysis [NASA-TN-D-4769] 19 p3232 N68-31948 rvo loops with gas bearing

NT SERVOMOTORS ary info utomatic control system ontrol systems, comput systems and teleme [FTD-HT-66-356] 03 p0331 N68-12090 n for optimal inter-Performance para ference control in lis (DLR-FB-67-32) 04 p0489 N68-13451 m, and opera aircraft flight control 04 p0446 N68-13846 mous, and dis-(FTD-MT-63-516) 05 p0639 N68-14634 n chart as design ele-05 p0687 N68-14825 ed servo system for decod-NASA-TM-X-630971 07 p0967 N68-17010 Intentional nonlin systems for gain inse [NASA-CR-93412] state variable feedback 09 p1316 N68-18350 Generalization of sliceserve systems g duplication in branched 09 p1361 N68-18585 Design and application potentials of general purpose exterous, cybernetic machines for human augments [NASA-SP-5047] 09 p1289 N68-18870 Precision tilt and (NASA-TR-R-281) ation system design 10 p1528 N68-19642 Design of self bala ment systems with fo [AFCRL-67-0586] owave power measure-trol mechanism 10 p1499 N68-20128 10 p1531 N68-20411 [PB-1768771 raulic actuator system ockets High efficiency pneumatic for fin direction control of m [BMWF-FB-W-67-36] rockets 11 p1632 N68-21712 tability of force reflect al transmission time del servomechanisms with 21 p3656 N68-33711 Investigation of four-element position sensitive diodes to be photoelectrical servosystems germanium and silion used as sensors for 23 p4033 N68-37305 SERVOMOTORS control servedrive for FTD-MT-66-1221 01 p0066 N68-10826 irol of servomotor with 05 p0639 N68-14203 UCRL-176171 Performance test results Saturn S-1C thrust vector conti [MR-1182] on potentiometers for rol servoactustor 12 p1871 N68-22047 Performance test results o Saturn S-1C thrust vector contro [MR-1183] ults on potentiometers for control servoactuator 12 p1871 N68-22048 Performance, random its of alternate potentio ration, and temperature or sources for Saturn 1B 12 p1874 N68-22464 Performance and immersion tests of alternate poten-ometer sources for Saturn 2 and Saturn 5-4B thrust ector control servoactuator 12 p1874 N68-22465 Test program for evaluating alternate potentiomete surces for Saturn S-IC thrust vector control servose MR-1196] 12 p1875 N68-22469 tracking servo systems roving accuracy 15 p2422 N68-25786 ce and response of two Dynamic control, perform 17 p2864 N68-28676 design aid in selecting and r large moments of inertin 18 p3005 N68-30424 uning angular serv ns analysis of servo con-agnetic tape recorder 19 p3252 N68-31461 Digital control equipment is thrust piston motors and rotary in [NEL-TT-1906] et for impulse-controlled try motors 20 p3454 N68-32962 U SERVOMOTORS SERVOSTABILITY CONTROL
U SERVOCONTROL

NT EQUIVALENCE chartic Liapunov functions and invariant set con-[NASA-CR-90093] iral sets with linear pro-ORC-67-29 01 p0085 N68-10590 Selection and ranking pre [AD-659073] 01 p0086 N68-10992 extinuation problems relation and sum of two indestributed random variables [TR-130] d to geometric distribu-ulent nonidentically dis-03 p0360 N68-12291 ness, derivation ORNL-TM-1952] 03 p0361 N68-12609 Set of observers as [TR-2] th relativity principle 04 p0543 N68-13163 t elements for positive 04 n0531 N68-13614 [NASA-CR-61402] 04 p0484 N68-13742 for convex sets 06 p0860 N68-15125 [RM-5354-PK] Fundamental theorems forms of numerical functi transforms of abstract set fi [TG-230-T529] ning Fourier truns-eralized for Fourier 06 p0860 N68-15150 inimizing amouth con-lanach space 06 p0864 N68-15602 necessrable function -06 p0865 N68-15609 matical programming 06 p0866 N68-15736 Space filling curv [TR-67-115] shaped domains (MRC-TSR-787) 06 p0866 N68-15819 regions 06 p0866 N68-16028 al partition of abstract 06 p0867 N68-16041 sion problem relate sidered ordered col mions are whole sets d to compositions, which ections of disjoint subsets TH/229] 06 p0867 N68-16084 ing two sets of points in a [TR-67-116] approximately separat-rement space 06 p0821 N68-16090 algorithms and applica-tern classification 07 p0977 N68-16717 n functions for bounded rem proof checking in set theory 09 p1309 N68-18753 Automatic theo (SC-RR-67-525) Generalized goal in fixed a mple ranking and selec-10 p1545 N68-19659 Convex kernels of star-shaped sets in real linear 10 p1545 N68-19685 minimal topological Co-topology applicati 10 p1546 N68-19736 Totally bounde [MRC-TSR-789] 11 p1721 N68-20587 [SR-3] 11 p1732 N68-21571 as of tr 12 p1898 N68-22241 properties into helicity ticle systems 12 p1933 N66-22664 Introduction of permutation eigenfunctions for identical p [LYCEN-6734] Theorems for constructi (LA-DC-9167) inded polyhedron 12 n1399 N68-22695 natics of set theory 12 p1899 N68-22948 matrices dealing with Model theory and m Theorems derived for /0,1/-ma combinatorial configurations [AD-667468] 14 p2279 N68-24393 15 p2435 N66-26925

SUL

SHE

SHE

(N

fie (R

FRI D

fle

SHE

10

tn

Algebraic equations for statistical distribution func-es having similar zones 16 p2694 N68-27246 Asymptotic methods for estimating least mean amber of necessary comparisons for complete order-16 p2716 N68-27770 Basis for theory of two player quantitative games [CEA-R-3475/1/] 18 p3101 N68-29653 Group extensions and repres ntations of sets 18 p3104 N68-30091 Limit set for dynam [NASA-CR-95868] on Banach space 18 p3104 N68-30151 Existence theorem and subset analysis [RM-5676-PR] es and transversals in set theory 19 p3301 N68-31185 Relation between problems equivalence of programs and ab properties of well ordered sets and [AFOSR-68-1302] ms of termination ar tract programs, and nd graph theory 19 p3249 N68-31776 Hypothesis of commutative superselection rules by assuming linear hull of physically realizable vector set is dense in Hilbert space [JINR-E2-3799] 20 p3546 N68-33011 799] bility in a two level system 21 p3713 N68-34453 (SRC-68-3) Quark model - properties, type [PUC-937-324] 21 p3743 N68-34488 Measure and integration in non-Archimedian much spaces 22 p3898 N68-35035 Set theory applied to viodynamics and measuremen rious phases of thernt systems 22 p3978 N68-35397 modynamics at [P-3907] Checking automata an (SDC-TM-738/045/00) way stack languages 22 p3844 N68-35582 Non-manifold factors of Euclidi dian spaces 24 p4276 N68-37729

Post maturity effect of ova on sex ratio of frogs and butterflies [NASA-TT-F-11683] 12 p1826 N68-22848 Heredity and cytology of sex as exam [NASA-TT-F-11685] 14 p2 s examined in frogs 14 p2196 N68-24719 Overmaturity effect on sex ratio and cytoplasm of frog eggs [NASA-TT-F-11782] 18 p3010 N68-30338 Biological developm Dinophilus apatris, dapl [NASA-TT-F-11780] of genital organisms in s, and Rana temporaria 18 p3011 N68-30530 Sexual differentation of dap [NASA-TT-F-11779] rids and frogs 18 p3012 N68-30765 Sex determining factors affecting egg development of Rana esculenta, Rana temporaria, and frogs [NASA-TT-F-11781] 18 p3012 N68-30832 Effects of late fertilization on of eggs of frogs on sex rutio [NASA-TT-F-11784] 18 p3012 N68-30833 Experimental determination circadian rhythm in humi n of effects of age and sex

Factors affecting design and use of photographic sextant for space navigat [NASA-TN-D-4285] 02 p0236 N68-11902 Navigator performance nce using hand held sextant to a moving flashing light and simulated star - space navigation [NASA-TN-D-4174] 04 p0535 N68-13558 Astronaut performance using manually hand-held extants for midcourse navigation phases of manned space flight (NASA-TN-D-4449) 11 p1737 N68-21123 Mechanical, optical, and electrical characteristics of hand-held sextant for space flight [NASA-TN-D-4585] 14 p2286 N68-24512 Telescope objective lens aize, aperture size, and mag-ification effects on operator performance using [NASA-TN-D-4781] 20 p3527 N68-33006 Effects of irradiation and star magnitude on sextant sighting performance [NASA-TN-D-4780] 20 p3529 N68-33456 SFERICS U ATMOSPHERICS 9GR [NUCLEAR REACTORS]
U SODIUM GRAPHITE REACTORS

22 p3812 N68-35567

SHADOWGRAPH PHOTOGRAPHY NT SCHLIEREN PHOTOGRAPHY

Electromagnetically produced nonstationary shock aves examined by means of shadowgraphs, interfero-

grams, microwave interferograms, and probe measure-01 p0118 N68-10650 [IPP-3/58] Shadowgraph of sound field from cold supersonic NASA-CR-91337] 04 p0545 N68-13394

Single lens camera shadow photogrammetric ethods for determining topography of opaque sur-ces subject to steady, quasi-steady and/or transient faces subject to steady, qui 10 p1528 N68-19626

ic system capable of e and liquid jet studies 13 p2071 N68-24200 1,000,000 frames/sec for bubble a [REPT.-07738-7-T] Shock wave parameters stud botography using high speed m died with shadowgraph

otion picture camera 14 p2266 N68-25597 Characteristic solution for flow distribution of two imensional underexpanded jet flow using shadowensional underexpanded shic and interferometric dat

16 p2649 N68-27895 raph technique for calibration of aircraft water content instrument system 18 p3074 N68-30154 cloud liquid (REPT.-14)

High speed spark photography with rates to 40,000 [FTD-MT-24-370-67] 24 p4259 N68-38198

SHADOWGRAPHS
U SHADOWGRAPH PHOTOGRAPHY

SHADOWS

NT LUNAR SHADOW

NT PENUMBRAS

Iterative solution of equation for intersections of satellite orbit with earth shadow [RAE-LIB-TRANS-1253]

07 p1083 N68-17147 tic scattering in multi-Regge exchange model [INR-880/VI/PH] 15 p2521 N68-26519

SHAPTS [MACHINE ELEMENTS]
NT TURBOSHAFTS Motion equations for whirling mass rotor on damped satic shaft [NASA-CR-89961] 01 p0071 N68-10952 Grooved-shaft viscoseals designed for laminar and turbulent regions [NASA-CR-90309] 02 p0214 N68-11025

Comparison of gas film mainshaft seals with rubbit contract seals for high temperature, high speed, as high pressure gas turbine applications [NASA-CR-72338] 05 p0666 N68-1417 05 p0666 N68-14172

Design criteria and performance characteristics of multistage centrifugal pumps with sodium lubricated, hydrodynamic shaft bearings and oil lubricated mechanical face seals 11 p1705 N68-21207 [LA-3782]

Rotary stability of the three dimensional motion of a rotating disk-shaft system considering nonequilibrium [AA&ES-68-3] 17 n2982 N68-29034

Elastomer O ring seals for piston ring and shaft seal operation in dry helium atmosphere [ORNL-TM-1661] 20 p3488 N68-32955 20 p3488 N68-32955 Deflection and vibration at critical speeds of shaft-bearing systems using Newton-Raphson method in computer program

SHAKERS

Internal vibration of electron equipment resulting from acoustic and shaker induced excitation d excitation 14 p2362 N68-25500

20 p3607 N68-33566

Control stabilization for mult iple shaker tests 14 p2364 N68-25510

SHALLOW SHELL EQUATIONS

Closed solution for responses of unintruce, management of unitruce, management of unintruce, management of unitruce, management of u REPT.-61 Large elastic deformati low doubly curved shells s and snap through of shal-

11 p1792 N68-20637 Free vibrations of shallow circular cylindrical shells 12 p1977 N68-22417

Bubnov-Galerkin method using shallow shell non-ear equations to determine snapping of clastic cylin-ical panel subjected to weak acoustic pressure shock

12 p1978 N68-22525 Derivation of Vlasov sh w shell equations and shells 13 p2163 N68-24122 their application to a [NASA-CR-94591]

U JOINTS (JUNCTIONS)

SHANNON INFORMATION THEORY
U INFORMATION THEORY SHAPED CHARGES

Safety factors and fu sive devices, delay circuits, and al [NASA-TM-X-60363] shaped charges 15 p2390 N68-26120

Pyrotechnic shaped charge aerospace vehicle stage nd shroud separation systems development NASA-TM-X-1607] 17 p2976 N68-28869 and shroud separation [NASA-TM-X-1607] Meteoritic simulator using shaped charge techniques

19 p3258 N68-31223 [NASA-CR-66615] ds of explosive forming of uire shaping 21 p3697 N68-33853 Advantages and methods of a large metal objects that require sh

SHAPES

NT CONVEXITY NT ELLIPTICITY NT LINE SHAPE NT OGEE SHAPE NT T SHAPE

Shapes and stresses calculated for ascending bal-[NCAR-TN-25] 03 p0419 N68-11950

tor properties of visual shape 04 p0461 N68-13200 Contour descript [SRRC-CR-67-43] Shape classification neteor echoes, and

recording of radar da (NASA-CR-92667) 07 p1083 N68-17074 Surfaces for cos [MAC-TR-41] sign of space forms 08 p1253 N68-17735

Structural formation [NASA-TT-F-11523] on noctifucent clouds 09 p1339 N68-19491 Shapes of liquid drops resting on flat surfaces deter-nined by Runge-Kutta solution of Laplace capillary

[NASA-TN-D-4779] 20 p3465 N68-33165 hape and velocity of single air bubbles rising in ill diameter tubes in stagnant and flowing liquids 23 p4043 N68-36053

Nose shape and fin go ty of sounding rocket me [NASA-TM-X-1661] ry effects on static stabilisupersonic wind tunnel 23 p3985 N68-36509

Computation of shape factor for spacecraft applica-tions using digital computer program for radiative heat exchange between two surfaces [ESRO-TM-114/ESTEC/]

23 p4029 N68-37014 Hot extrusion of solid and hollow shapes from struc-tural and alloy steels without residue [FTD-HT-67-413] 24 p4263 N68-38206

COORDINATION

SHARP LEADING EDGES

Heat transfer and static pressure measurements on flat upper surfaces of sharp edged delta wings in free flight [ARC-R&M-3469] 04 p0436 N68-13550

Theoretical research on aerodynamic gas flows around hypervelocity bodies - supersonic and hyperselective bodies - supersonic and hyperselective species of revolution, sharp edges, and flat plates

[DLR.-MITT.-67-13]

05 p0601 N68-13908 05 p0601 N68-13908

Aerodynamic measurements for analysis of flow field near leading edge of flat plate in hypersonic flow 05 p0602 N68-13914

Laminar and transitional heat transfer in two dimen-onal separated flow behind sharp protruding leading edge step model [TAE-71] 06 p0925 N68-15451

impact pressure surveys for flow fields of sharp lead-ing edge delta wing at hypersonic speed [AEDC-TR-68-58] 19 p3196 N68-31864

Sharp edge delta wing drag prediction by application of leading edge suction analogy of vortex lift [NASA-TN-D-4739] 19 p3196 N68-31990

Flow field near sharp leading edge of cooled flat plate in hypervelocity low density flow [NASA-TT-F-11717] 19 p3267 N68-31998

Interference effects of leading edge eddies on lifting erformance of slender Delta wings 23 p3985 N68-36982

Numerical solutions for axisymmetric flow equations over alender sharp nose cones at zero angle of attack [PIBAL-68-17] 24 p4194 N68-38027

Principles and applications of Moire, Twyman-Green, Fizeau, and multipass dual interferometers -fringe pattern sharpening techniques 07 p1001 N68-17207

SHATTERING U FRAGMENTATION

on circadian [DVL-783]

SEXTANTS

SHEAR DISTURBANCES U. S. WAVES SHEAR FLOW

re applied to Navier-Stokes Asymptotic procedule equations in study of a trailing edge of flat plate [DAC-60862] 02 p0199 N68-11373 roff scalin eddies and inertial

subrange in turbulent (NPL-AERO-1220) 03 p0334 N68-11925 Stability of shear flow with density gradient and

INASA-CR-9581 06 p0827 N68-15530 city similarity laws of

Frictional resi drag reducing di [NSRDC-2502] utions 07 p0989 N68-17107 Second order st function for determining lift, of airful in nonuniform shear

flow [TR-117-ME-F] 09 p1265 N68-18338 Turbulent she

turbulent intensities of idary layer 11 p1682 N68-20752 viscous region of turb (CER67-68HWT21) 11 p1793 N68-20779

lent shear flow 12 p1859 N68-22126 Negative entrainm (NPL-AERO-1249) ed with turbulent shear

Local pressure fie flow in jets [ARC-CP-989] 13 p2051 N68-23174

Shortened analysis of possible similarity solutions for ow in turbulent boundary layer after change in surface roughness [NPL-AERO-1242] 13 p2054 N68-24005 hed asymptotic expan-

Lifting line theory from one for wings in subsonic [FFA-114] 15 n2379 N68-25739 Boundary layer condi-icing on drag forces wi and tree number an rest canopies in turbs

lent shear flow (CER67-68GH-JHN50) 15 p2455 N68-26715 shear flow 17 p2870 N68-28441

Linear superposition of shear flows upon fields of thermal convection cells in mathematical model of Langmuir circulation

17 p2984 N68-28478

Mathematical prediction of var field in turbulent shear flows of va [RM-5549-ARPA] variable density velocity f variable density 18 p3060 N68-29807

Viscosity and velocity of two dimensional quasi-parallel turbulent shear flow 19 p3262 N68-31030

Microrheological study of flow behavior of thix-ropic suspensions, assuming spheroidal aggregates in 19 p3263 N68-31196

Mean velocity and shear patt rations for jet aircraft noise reds [D6-15071, V. 1] erns on nozzle configu 20 p3396 N68-32196 ear flows, acor Particle fluid mecha

20 p3458 N68-32337 Wind slick generation w near water surface ted to turbulent shear

21 p3678 N68-33703 ity applied to planetary Spiral boundary layer in

NASA-CR-867141 21 p3770 N68-34264 nce in unidirectional hree dimension n shear flow - the nideration 21 p3718 N68-34296

re, time on shear flex-fiber laminates 21 p3708 N68-34299 Effect of temperature [NASA-TM-X-61212]

Effect of incomplete lation on the slip coefficient [TR-0158/3240-20/-12]

22 p3862 N68-35570

SHEAR LAYERS

ical parameters, and ef-urbulent flow 06 p0826 N68-15458 Analogy between fect of streamline fect of streamline curvi INPL-AERO-12311 sure field under super-

Analysis of turb sonic shear layers [NASA-CR-888] 12 p1859 N68-22087 heric motion and abor-rgy gas dynamics, ar s-summaries of research

16 p2647 N68-27679 nal V-shaped notches in ent flow 18 µ2996 N68-29991 Drag forces of two di ransonic and supersonic

erosol particles 24 p4280 N68-38037

(ONR-TR-7) 04 p0526 N68-13499

Young modulus and si graphites of various pore TTR-0158/3250-10/-131 adulus for bulk isotrop at room temperature

10 p1541 N68-19779 oder torsional im pact loading [TR-0158/3250-40/-3]

10 p1539 N68-19999 dal plasmas, and shear properties of field lines in m [NP-TR-1621]

tic coils 14 p2324 N68-24912 lus, and internal fric-ity of transformation

16 p2677 N68-27273 liquids studied with ilk shear elasticity of piezoelectric quartz re [RTS-4292] 20 p3457 N68-32234

Elastic properties of system of alloys FTD-HT-67-130) n vanadium chrom 20 p3506 N68-33473 SHEAR STRAIN

Longitudinal shear crack in infinitely narrow plastic 02 p0273 N68-11028

strain effects on we ransfer using two poi from Navier-Stokes as lysis of shear and n ence and turbulent stion equations obta INASA-TN-D-42731

02 p0283 N68-11491 dy on low cycle

12 p1885 N68-21855 viscoelastic spec and torsional of of LX-04-1 exp t circular cylinds ed to forced, sin complex shear s

[UCRL-50357] 16 p2672 N68-28139 ion a nickel chromium [DAC-60787] 17 p2982 N68-29060

iational meth is of dynamic ion of elastic s

18 p3176 N68-29928 induced reversal of martensite to nickel carbon alloys 22 p3889 N68-35091

rength of epoi ns as function of tem-C.E.-TRANS-4773] 22 p3894 N68-35211

SHEAR STRENGTH Shear, tensile, and time properties of di ta conducted to deter-ided titanium alloys 02 p0216 N68-11374 mine propert [AI-67-137]

hydraulic apparatus for h during pull, and pres-Design, and o (ISL-T-6/67) 06 p0821 N68-15222

Shear strength of twell high pressures and tempe [AFCRL-67-0475] ly deformed metals at 06 p0856 N68-15707

yield strength of bolte Effect of boit tightening or onnections under shear loads 09 p1442 N68-18690

ond line thickness, a ser effects on lap she etchant, and adherent gth of polywrethane ad [NASA-CR-61808] 15 p2488 N68-26291

nt for mech High shear worki stability of eight gree [RIA-68-654] 16 p2666 N68-27012

Correlating lunar sivity with its poro materials thermal conduc-d shear strength in high

18 p3067 N68-29927 ender camphor and wind tunnel ablation

ARPAI 23 p4186 N68-36394

NT TORSIONAL STRESS

01 p0141 N68-10207

01 p0076 N68-10560 crystals with defects electron and neutron radiated aborning 03 p0352 N68-12415

ies of polyester and FFL-751 03 p0357 N68-12516

ts on stagnation poi shear, and heat transfer (TR-0158/3240-10/-2)

04 p0494 N68-13226 fiber reinforced plastic (DLR-FB-67-65)

04 p0526 N68-13453 d for measuring wall chear around circular cylinder at 05 p0648 N68-14626

for plywood box b 08 p1252 N68-17693 [VP-X-31]

Statistical model für brittle defi-08 p1252 N68-17714

tic buckling in corrugated plates under she

11 p1791 N68-20636 Turbulent shear str viscous region of turb (CER67-68HWT21) dary layer 11 p1682 N68-20732

Computer program learing stresses, gros emputing, center of gravity, git, and bending moments

(NWL-T-19/67) 11 p1793 N68-20863 measurements in all

[NASA-CR-61584] 12 p1885 N68-21875 horizontal bending mo

Measurement of verti-ments and shear forces a [REPT.-1005] 12 p1985 N68-21989

Liquid layer effects 12 p1860 N68-22148

endence of extinction angle es in tetrahromethane cour 13 p2020 N68-24064

Polymer viscosity as fu (RLT-105) on of shear rate 13 p2090 N68-24246 in thin shells of revolu Transverse si

14 p2357 N68-24956

Design of minimum raints of stress and de ame for inequality con-14 p2357 N68-24997

s of alloy by precipita tion of stressed of [IS-TRANS-75] 15 p2484 N68-26315

for shear stress and a in rotating cylinders 15 p2468 N68-26533

of stress and buckling 17 p2980 N68-28681 olution used in fractu actic bar under lessio

dinal shear stress (ARL/SM-318) 17 p2982 N68-29067

plate, and stress con-18 p3173 N68-29618

to study fatigue crack alternating she [D1-82-0708] 18 p3175 N68-29710

(AD-671946) ial stress-torsion test 20 p3601 N68-32621 20 p360J N68-33120

21 p3621 N68-33649

T

OR

F

[W]

Si

H

SI

A

E

LIL

NT NT

NT

252222222222

R

ics and [Al

tisp

Sis o

(N/

19 p3351 N68-31063

19 p3376 N68-31191

SHEL

Approximation theory for shells of rotation using half-turn method and expansion of unknown values into series of Legendres polynomials [FTD-HT-66-530] 06 p0922 N68-15677 Influence of stiffener geometry and spacing on buck-ling of axially compressed cylindrical and conical shells Determination of yield stress in parallel plate plastic ERDE-14/R/67] 21 p3757 N68-33979 Local shear stresses and drag for free molecular flow along concave cylindrical surface oriented at arbitrary angles of attack. [TR-0158/3305/-6] 22 p3861 N68-35440 13 p2157 N68-23307 Dynamic stability of thin walled elastic shells and ap-plications to space vehicle control problems [NASA-CR-949] 13 p2159 N68-23453 Moment theory used for solving dynamic loading problem for flat large radius spherical shell 07 p1089 N68-16303 Numerical calculations of axisymmetric dynamic nap-through of elastic clamped shallow spherical hells Membrane shell theory and digital computer program for determining impedance characteristics of thin conical shells under axial excitations [NASA-CR-92989] 07 p1089 N68-16339 Wind-wave tunnel experiments to determine ratio of wave-supported shear stress to total shear stress on water surface 07 p1089 N68-16339 [TR-37] 22 p3870 N68-35561 [AFOSR-68-0469] 13 p2161 N68-23857 Stability calculation procedure for thin walled circular cylinders in post-buckling region
[DLR-FB-67-70] 14 p2355 N68-24684 Shear stress variation and laminar boundary layer ef-Impact stresses and deformations in spherical elastic fects series-60 ship model [JIHR-108] 23 p4045 N68-36200 [NASA-CR-92976] 07 p1090 N68-16670 Fourier series linear homogeneous partial dif-rential equations for cylindrical shell stability 15 p2567 N68-25900 Three dimensional elasticity theory for solving two-layer cylindrical glass fiber shell problem 08 p1246 N68-17482 Effect of shear stress on solid state phase transforma-[AROD-4953-4-MC] 23 p4075 N68-36456 Soviet research on thin plate and shell theories for aircraft and engine design applications

08 p1251 N68-17683 Shearing stress effects on soldered joint strength and ampling plan for visual inspection of defective joints REPT.-40-56] 23 p4070 N68-37270 Initial postbuckling behavior of stiffened cylindrical [LMSC-6-77-67-52] 15 (REPT.-40-56) 15 p2567 N68-25992 Hard shell repulsion with separable interactions in helium isotope energy potential [INR-831/VII/PL] 09 p1389 N68-18622 Basal plane shear stress-strain behavior of anisotrop-ic annealed graphite crystals [DOUGLAS PAPER-5139] Law of plane sections applied to determine erodynamic forces acting on oscillating shells 15 p2382 N68-26588 (FTD-HT-66-763) Many body states of nuclear shell model with definite angular momentum and isobaric spin with mixed single particle orbits (AECL-3007) 09 p1390 N68-18854 24 p4272 N68-37997 Buckling on stability of finned cylindrical shells under axial compression, and high temperature research conference on material strength [FTD-HT-66-783] 15 p2572 N68-26746 SHEAR WAVES U S WAVES SHEARING STRESS Numerical solution of combined hydrodynamic and shell equations for hydroclastic response of flexible shells Singular solutions of linear partial differential equa-tions for loaded shallow shells with stress measure-ments and displacement data given 17 p2980 N68-28759 U SHEAR STRESS SHEATRS U ION SHEATHS U PLASMA SHEATHS [NASA-CR-92023] 10 p1603 N68-19699 Numerical analysis of static, and dynamic shell response to water impact loads [NASA-CR-92024] 10 p1604 N68-19867 SHEDDING Free vibrations and stability of orthotropic cylindri-cal shells loaded by axial compressive forces Leakage of microorganisms from pressurized Gemini 18 p3176 N68-29846 10 p1604 N68-19867 Stress analysis of cylindrical and conical elements of offset wall tank using thin shell membrane and bending theories. space suit into ambient temperature microbiotank [NASA-CR-91468] 04 p0462 N68-13436 Theory and design of thin walled shells, including ability of shells and plates stability of shells an [FTD-HT-66-571] 18 p3180 N68-30362 METAL SHEETS 10 p1608 N68-20236 Equilibrium and stability equations for grid rein-forced truncated conical shell Analytical method for obtaining shape and thickness of thin rotational shell of minimum weight 11 p1795 N68-21056 SHELL STABILITY Stability concepts for solutions of problems in shell theory using differential and integral equations and functional analysis [FTD-HT-66-377] 03 p0420 N68-12135 19 p3376 N68-31269 Basic formulas for determining buckling load of cylindrical sandwich shells with finite transverse shear Stability analysis for thin closed cylindrical glass [FTD-HT-67-387] 19 p3377 N68-31308 stiffness [BMWF-FB-W-67-25] Stability of shells of revolution with arbitrary generatrix curvature and stress concentration around circular hole in orthotropic cylindrical shell 11 p1799 N68-21713 Stability of bending stress state of elastic shallow circular cylindrical shell Calculation tables for matrix elements of atomic quantity operators of partially filled shells [ANL-TRANS-563] 12 p1935 N68-22729 [FTD-HT-66-786] 19 p3380 N68-31756 04 p0586 N68-13001 Aeronautical engineering atudies stability of degenerating conical shells, pressure sealing of hydrau-lic equipment, convective heat exchange of gas turbine Stability of shells of revolution with arbitrary Experimental verification of limit analysis for short ylindrical shells ment, convective h 04 p0586 N68-13002 (REPT.-4) 12 p1979 N68-22806 Modified substituti substitution method to study nonlinear sta-nd-bottom oblate spheroidal shell 6-42] 04 p0587 N68-13123 disks, and vibrating pro [FTD-MT-24-131-67] 20 p3538 N68-33261 Matrix displacement method for deflection analysis on shells of revolution under load [NASA-CR-94510] 12 p1979 N68-22919 Algorithm for determining eigenvalues of conical nells of revolution with degenerated poles and variable (FTD-HT-66-42) shells of revolution with degeneral rigidity and geometric parameters Linear equations for analyzing buckling of circular-cylindrical anisotropic shell subjected to axial compres-sion loads Dual and mixed formulations of thin shell equations 20 p3605 N68-33262 Liapunov method used to obtain sufficient condi-tions for buckling stability of long cylindrical shells with random imperfections [NASA-CR-1161] 20 p3606 N68-33410 using displacements and stress functions [NASA-CR-94592] 13 p2161 N68-23548 04 p0591 N68-13848 Vibration and stability of composite triple layered conical shells consisting of two isotropic coaxial smooth layers rigidly joined by corrugated middle Approximation method for calculating heavy ion in-ractions with M-shell electrons 13 p2117 N68-23613 Stability equations for axisymmetrically loaded orthotropic shells of revolution Relation between nucleon clustering and quantum number of shell model wave function 06 p0918 N68-15178 (FTD-HT-23-554-67) 13 p2121 N68-24060 22 p3972 N68-35359 Stability of cylindrical and spherical shells under Flugge theory dynamic response of cylindrical shells subject to transverse shear deformations and rotatory inertia Instability of circular cylindrical s [FTD-HT-66-787] 07 p1088 N68-16301 23 p4178 N68-36043 Cylindrical shell stability computed for axisymmetric ring loads Stability of cylindrical shell made from nonlinearly deforming material and acted upon by axial forces ap-plied at faces 15 p2567 N68-25925 23 p4180 N68-36301 Stability calculations for superheavy nuclei from deformation energies and shell of 07 p1089 N68-16302 Evaluation of theories for elastic shell stability under 15 p2520 N68-26467 ematical analysis of load capacity of hollow WTHD-81 Linear shell theory elastic constant instability condi-tions for symmetrically loaded shells of revolution [NASA-CR-95143] 16 p2783 N68-27893 apherical shell reinforced at edge (FTD-HT-66-584) 09 p1439 N68-18331 23 p4183 N68-36945 SHELL THEORY Parametric oscillations of liquid filled, circular cylindrical shells experiescing forced longitudinal excitation Nonlinear thermodynamic theories of rods, plates, Shell theory of nuclear intermediate structure relating proton inelastic scattering to deuteron-proton and shells [AM-67-8] 01 p0145 N68-10833 09 p1444 N68-19040 Dynamic response and stability of shallow thin elastic spherical shells subjected to time dependent loading [LA-DC-8192] · 17 p2922 N68-28356 General nonlinear operator equation for flat shell Wave functions and correlation effects in shell model of nuclear structure [COO-1051-18] 17 p2939 N68-29236 oscillations [FTD-HT-66-745] 02 p0274 N68-11171 10 p1602 N68-19647 Users manual on static and dynamic computer pams on linear elastic thin shell theory - Apollo of Atomic orbitals, nuclear structions of interacting particle shells [T-R-644] Numerical and structural analysis of flight stability of liquid filled shells
[BRL-MR-1892] 10 p1609 N68-20470 clear structure, and wave funcr impact [NASA-CR-65863] 03 p0418 N68-11939 18 p3127 N68-29733 Stability of finitely deformed elastic shell 10 p1609 N68-20539 re in nuclear shell mod Nonlinear equations of thin shell theory constructed on basis of Kirchhoff-Love hypothesis in quadratic ap-[COO-1573-13] 03 p0389 N68-12386 Aeronautical engineering articles on Soviet studies pertaining to systems analyses, flight control techniques, shell theory, and turbine operation and Structural strength problems of spacecraft and 18 p3178 N68-30237 [SUDAAR-328] Charge exchange model of alkali halides compared to shell model of ionic crystals

10 p1610 N68-20544

lement 12 p1976 N68-22240

(FTD-HT-66-260)

Linear theory of thin shell [NASA-TT-F-11562]

04 p0568 N68-13841

06 m0920 N68-15319

Theory of nonetar (ONERA-TP-573)

Finite element analysis of thin shell, convergence of pproximations obtained, and stiffness matrix expres-ons for triangular curved shell element

EX 677 ding 303 339 stic 670 wo-482 for 683 in 522 154 ind 99 ell of 36 258 56 of ar 13 vic 29 urt 9 18

3

0

NT

NT

NT

NT

SAME STATE OF SHIPS Emittance measurements of space suit face shi and test chip [NASA-CR-92198] 18 n3013 N68-294 Linearized shell theory equations and general formu-las for correlation functions of thin elastic shell sub-critical deformations Thermoplastic strains and stresses in variable thickness shell with middle surface formed by rotation of arbitrary shallow curve around X axis 18 p3013 N68-29984 19 p3378 N68-31709 18 p3173 N68-29611 Design and perform explosive exit in aircri [PA-TM-1821] of protective shielding for n equilibrium formula used to is in shell theory Theorem based on eq develop stress functions in ([FTD-HT-23-783-67] dastic deform 21 p3621 N68-33662 18 p3173 N68-29630 neory 19 p3382 N68-32032 HIFT REGISTERS ns of plates and ential analysis ap schemes, nuclear reac-opy, and shell models 20 p3540 N68-32250 Nuclear research on decay schoon, metal carbonyl spectroscopy, matical model of synchronous automa ce of radio 01 p0042 N68-10311 [ORO-2434-4] Integral equation solution problems in shell theory [FTD-HT-67-249] with shift register 04 p0482 N68-13218 for boundary value 18 p3178 N68-30224 [FTD-HT-67-157] Beta and gamma ray spectra 2s-1d shell of sh rt lived isotopes in register networks, and color receptor model 04 p0456 N68-13475 20 p3602 N68-32939 Analysis of neural at psychophysiological senso Muon capture in nuclear shell mo 19 p3324 N68-31061 21 p3734 N68-33745 lar shell submerged Formulation of general equations of linear thin shell theory in terms of complex combinations of dependent variables Elastic response analysis for cells Feedback shift register and binary cascade cour to obtain 11-bit Barker code generator [ESRO-TN-7] 05 p0629 N68-13 [TM-619.3111-07] 19 p3375 N68-31103 05 p0629 N68-13997 Elastic buckling o buckling of plates and [NASA-TN-D-4706] for calculating plastic fer biaxial loading 19 p3382 N68-31946 processor functions in [REPT.-253] (NASA-CR-89179) 21 p3788 N68-34036 rative array of parallel data Mass law based on liquid drop model and tabulated atomic binding energies [LA-3751] 22 p3929 N68-35474 12 p1847 N68-22905 rium formula used to Theorem based on eq develop stress functions in [FTD-HT-23-783-67] Shift register based on fl current coupled field effect [FTD-HT-23-706-67] Phope consisting of direct resistors 13 p2035 N68-23803 19 p3382 N68-32032 Foundations and basic equat ons of shell theory 22 p3975 N68-35817 [WTHD-5] Variational method for limit analysis of rotationally immetric sandwich shells tent approach to effective maclear force of con-nucleon potential Analyses of low pass fit gisters for data transmis Self cons 20 p3599 N68-32258 18 p3053 N68-30480 tic analysis of shells of loading 21 p3783 N68-33789 [IC-68-52] 23 p4128 N68-37030 Computer programs for el revolution under axisymmetri by application of shift re-8-52] rtree-Fock calculations for light nuclei 23 p4130 N68-37112 Synthesis of digital syste aisters in secondary sta [AFOSR-68-1300] (IC-68-30) 19 p3257 N68-31823 version with programmed of [RISO-172] Static and dynamic elasticit laminated and sandwich plate [NASA-CR-96738] and viscous damping of shells, and beams 21 p3789 N68-34285 er for parallel to serial con-Shell model wave function structure for low states of even-even nuclei [ANL-7439] 24 p4305 N68-37483 21 p3664 N68-34047 Vibrations of shells in co essible and incompressi Shift registers employed in sequential control com-ster design techniques Atomic energy levels of helic 24 p4317 N68-37989 (FTD-HT-23-1003-67) 24 p4350 N68-38163 22 p3839 N68-34814 Experimental and theoretical papers on meson absorption in chemical compounds
[JINR-P4-3860] 24 p4317 N68-38004 SHELTERS SHILLELAGH MISSILES Human physiological responses to simulated shelter Missile Isunch shock test facility for Shillelagh an-tank missile components SHELLS [STRUCTURAL FORMS] 01 p0011 N68-10558 REPT.-21 14 p2238 N68-25537 ANISOTROPIC SHELLS CIRCULAR SHELLS Fuel and equipment deterioration in storage and mintenance requirements of auxiliary power systems or fallout shelters U COMPENSATORS CONICAL SHELLS CYLINDRICAL SHELL SHIP HULLS AD-6622661 06 p0770 N68-15838 DOMES [STRUCTURAL FORMS] ELASTIC SHELLS Cold brittleness and maximum plasticity of low car-bon and low alloy steels used in shipbuilding [NIC-TRANS-2436] 01 p0075 N68-10431 HEMISPHERICAL SHELLS (AD-6635701 LIQUID FILLED SHELLS METAL SHELLS Water slamming pressure on rigid two dimensional circular cylinder in ship loads prediction study [TAR-TR-6701] 01 p0144 N68-10735 Construction materials, fabrication, and structural sign of plastic foam shelter for satellite geophysics ORTHOTROPIC SHELLS RADOMES observation statio Design and construction sandwich hull model for und [NSRDC-2412] stiffened titani 13 p2076 N68-23963 REINFORCED SHELLS SPHERICAL CAPS and equipment for military oz p0275 N68-11311 Medical facilities rrospace operations SPHERICAL SHELLS
THIN WALLED SHELLS
TOROIDAL SHELLS Ultrasonic impection of L and T welds in CCN-012 -Mario D'Almeida ship [TN-6702.284] 02 p0218 N68-11822 14 p2205 N68-24880 Lightweight portable shelters for Tacocas and bare base /remote site/ applications 16 p2786 N68-27943 Recapitulation of results obtained in study of dynamics and vibration of homogeneous and layered plates and shells including sandwich constructions [APOSR-67-2368] 04 g0589 N68-13384 Ship hull geometry, n ezle design, and Voith-ovement 04 p0585 N68-12807 Schneider proper [REPT.-2469] ta for portable shelter 16 p2786 N68-27945 americal computations for near thory of ben ng and buckling of Love-Expandable shelter/container for bare base applica-Kirchhoff plates and [TR-0158/3305/-3] d shells ships (MTB-010054) 06 p0918 N68-15145 05 p0751 N68-14769 16 p2787 N68-27947 Green function used in an esistance due to transom ster TR-117-11] alysis of waves and wave Stiffness matrices derived for triangular shell ele-tents associated with polyhedral deflection distribu-New rapid site construction methods for support cilities - sprayable reinforced plastic padding, molten alghur techniques, and fast cure cements for fabricat-gload surfaces 09 p1324 N68-18260 [NASA-CR-93206] High strength steel eva struction of deep submers [NRL-MEMO-1843] 08 p1245 N68-17384 for pressure hull con-16 p2638 N68-27948 Shell displacement, defor-ents in sandwich type shells tion, stresses, and mo-10 p1539 N68-20068 SHIELDING

NT ELECTROMAGNETIC SHIELDING
NT ELECTROSTATIC SHIELDING
NT HEAT SHIELDING
NT MAGNETIC SHIELDING
NT RADIATION SHIELDING
NT RADIATION SHIELDING
NT REENTRY SHIELDING
NT SOLAR RADIATION SHIELDING
NT SPACECRAFT SHIELDING 09 p1441 N68-18672 Hull mobility effects or carrier subjected to blast sic behavior of aircraft Membrane and bending theo tispan hyperbolic paraboloid shel ory of single and mul-14 p2366 N68-25541 on pressure generated er surface 15 p2455 N68-26539 09 p1444 N68-19179 Air compressibility effect on impact of ship hall on a Finite element method applied to static urcan finite and elastic edge stiffening [0 p1605 N68-19894] us of shallow sh [AD-664822] [REPT.-2] on ships 19 p3267 N68-32178 Computer program for analysis of shells of revolu-tion with axisymmetric loading [NASA-CR-[051] 13 p2158 N68-23355 Shear stress variation as facts series-60 ship model [IIHR-108] nar boundary layer ef-Packaging, shipping, and shielding procedures for ectroexplosive devices Vessel and shell fabrication, prototype thermal, and structural models, and cryogenic vessel thermal/thermodynamic design and management [NASA-CR-921]8] 13 p2074 N68-23440 23 p4045 N68-36200 [NASA-CR-66523] 04 p0449 N68-13435 Wave excitation force on ship hull INASA-TT-F-118321 24 p4243 N68-37549 Solid and air-borne acoustic pressure waves mea-ared to determine noise reduction qualities of shielded HIP PROPULSION

U MARINE PROPULSION 06 p0880 N68-15549 Numerical results of buckling of shells of revolution equivalent rates in lateral on Physics Facility 07 p1046 N68-16612 NT AIRCRAFT CARRIERS
NT CARGO SHIPS
NT NUCLEAR POWERED SHIPS
NT SATELLITE COMMUNICATIONS SHIPS
NT SUBMARINES [NASA-CR-[049] Neutron fluxes and dose-s shielding of Los Alamos Meso [HASL-188] 14 p2354 N68-24481 Analysis of elastic-plastic large deflection response of shell structures to blast loads using finite difference method ce tests on steam turbine blade, and 08 pl185 N68-17626 14 p2366 N68-25544 Experimental technique for determining fixed-buse-sonant frequencies of cantilever beams on fram Nonlinear boundary conditions for shells of revolu-tion with ring of arbitrary cross section attached 16 p2782 N68-27827 ding space depen-(KFK-633)

10 p1554 N68-19554

01 p0144 N68-10602

01 p0147 N68-10112

SUB

8

pari ope cha (N/

bre

stru tras scai [Al

L

me tras [IR

turn mai and [Al

SHO

sur low (Di

SHO

Reliability, repairability, and operation of icromodules for shipboard radio electronic equip-[JPRS-43274] Design and perfer mount for shipboar [NSRDC-2383] mped, resilient shock Equations for determini efficiency of pump-type pre [JPRS-43721] Hydrometeorological condit sent of shipboard ice accretion [T-486-R] Feasibility of satellite [TN-200] (JPRS-44025) Antenna installation for shipboard applicat cation equipment of Okean, marine radar Critical evaluation of literat frequency-dependent propert aeronautical radar in 3 cm to 8 re and bibliography on es of maritime and on band range 07 p0964 N68-16771 [DLR-FB-67-81] ling, and navigation for ding in ships 07 p1023 N68-17001 Radar equipment, ran offision avoidance and p [FTD-MT-66-56] Training manual on elect and shipborne radar stations [FTD-MT-64-352] tion of airborne 08 p1147 N68-17842 Equations for deter ane motion of ship wind velocity effects on Structural analysis of ship tegrity of container for shippin [ORNL-TM-2064] oard irradiator and inng radioactive materials 09 p1375 N68-18877 thod for ducted ship propellers 09 p1415 N68-19148 Frequency tabulations and characteristic wind and wave observations based on data from light vessels in southern North Sea [REPT-90] 10 p1521 N68-19888 n analysis by finite element technique 12 p1974 N68-21988 Ship vibration [REPT.-1078] Measurement of vertical and horizontal bending mo-ents and shear forces amidships [REPT.-1005] 12 p1985 N68-21989 Change of waveform for head seas travelling along horizontal cylinder [MRC-TSR-811] 13 p2050 N68-23045 Electrical and electronic as remote control on ships - anno [TDCK-49991] nic aspects of automation and red bibliography 13 p2046 N68-23930 Two-circuit underwatemote control from ship ter relay system operated by 14 p2249 N68-24962 Energy absorbing the control of the rbing steering column for protecting sonnel against underwater explosion

04 p0516 N68-13433 ns favoring develop-05 p0686 N68-14902 gation for ocean going 06 p0871 N68-15665 and marine radar set 06 p0817 N68-16012 06 p0802 N68-16013 nger ships 06 p0802 N68-16014 14 p2365 N68-25532 Heavy weight shock test facilities for Naval ship-ard equipment 14 p2238 N68-25533 Derivation and implications of Navy shock analysis 14 p2366 N68-25534 Dusign and performance machine for testing new mic container concept to extrem underwater explosion shocks erformance of dual mode shock ag new missile shipping and storage to extremes of simulated shipboard 14 p2239 N68-25540 Dynamic behavior of shipboard antenna masts to st generated overpressures 14 p2366 N68-25542

Effects of red and white light on visual adaption and sefulness of red light for ship concealment

Boundary layers of ships studied with sucking disks, flow visualization applied to wake of ship, and turbu-

17 p2832 N68-29244

19 p3265 N6R-31489

ques for inertial naviga-

23 p4098 N68-36384

n systems for manned

01 p0146 N68-11001

01 p0039 N68-10695 03 p0420 N68-12208 nic characteristics and

Design and performan e of damped, resilient shock mount for shipbe (NSRDC-2383) 03 p0420 N68-12208 Unidirectional lightweight energy absorbing net couch restraint system for Apollo spacecraft [NASA-CR-65939] 07 p0949 N68-16626 Unidirectional lightwe Shock absorption devices on elastic rods in bending vibration under kinematic, harmonic displacement onic displacement 09 p1441 N68-18674 Comparative study of optionshock and vibration isolators [AFOSR-68-0242] 13 p2158 N68-23336 Shock absorber test for testing road spring vibration 15 p2472 N68-25798 Dynamic vibra reduce trunsient v [NOLTR-67-60] orber principle applied to nic vibra 15 p2570 N68-26444 SHOCK DIFFUSERS U DIFFUSERS HOCK DISCONTINUITY Effects of dielectric-metal dis omagnetic communications over tal discontinuity on elec-ns over ground, soil, and sea 14 p2224 N68-25190 Mathematical analysis and analogies of shock wave teractions with reflecting wall and membrane and membrane 21 p3682 N68-34332 [REPT.-189] ed by shock wave interactions with y in turbulent flows 23 p4052 N68-37232 Disturbances caus entropy discontinuity in turb [NASA-CR-98035] Blast wave energy determ breakdown [IPP-3/67] ed for laser-induced gas 24 p4326 N68-38351 SHOCK FRONTS Approximation method for gas parameters behind took wave front using sulfur bexaft (SCL-DR-67-88) Shock front m shock tubes using different [IPP-3/57] Atom-atom and electr shock front structure in me [REPT.-34] Luminescence front proj shock tubes

Shock front irregularities in cold gas

Shock front irregularities in cold gas

Of p0647 N68-14344

Of p0647 N68-14344 n argon-filled membrane nterferometer 05 p0665 N68-14907 m collisional ionizing

nic gases 07 p1061 N68-16823 tion in electromagnetic 07 p1061 N68-16848

New density values for flow parameters of carbon dioxide behind shock front in shock tube 07 p1062 N68-16839 na investigated during n initiation to stable [AFOSR-68-0129] 09 p1448 N68-18597

Energy addition at surfaces sonic flow using three front co [RAE-LIB-TRANS-1260] ces of discontinuity in super-09 p1267 N68-19058

quilibrium domain 12 p1861 N68-22255 Radiation of n gas behind strong shock tional transistions into

12 p1861 N68-22256

Thick quartz transducers for ty shock pulses in shock tube to [SC-DC-67-3204] ers for measuring high intensi-12 p1880 N68-23012 Theoretical approximization shock front [AFOSR-68-0749] structure of nonlin

13 p2128 N68-24046 Detached shock calcula by second order finite 17 p2979 N68-28643

rmal shock problem 18 p2993 N68-29920 [NASA-TM-X-52471] dyzing shape of shock ant body of revolution

18 p2997 N68-30229 on behind shock fronts tics of shock formation discharge tubes 18 p3146 N68-30656

20 p3557 N68-33108

of supersonic turbulent 23 p3983 N68-36038

ck production in gases by Magnetohydrodynamic she current sheets in pinch tubes 23 p4138 N68-36251

Pneumatic and electro ic devices for shock wave AFOSR-68-1772) 23 p4047 N68-36396 stitutive measurements

Theoretical analysis and qu of shock tube precurser effects [NASA-CR-97190] 23 p4140 N68-36549 Blast wave energy determined for laser-induced gas 24 p4326 N68-38351

SHOCK HEATING Mass spectrometric studies of impurity ionization in lock-heated argon

eratures of shocked plates 03 p0425 N68-12201

ock formation of tektites during meteor impact on [NASA-TM-X-60922] 09 p1335 N68-19138

Shock tube experiments on expansion and recombination of high temperature gases
[AASU-272] 09 p1451 N68-19201

Electronic relaxation of shock heated nonequilibri-12 p1946 N68-22104

Structure of laminar boundary layers in high density shock heated argon plasma flows 12 p1946 N68-22173

rators in msec range for fast compression experin (IPP-4/57) 20 p3552 N68-32280

Microwave m et of ionization rate in shock heated gases using lecher wire tech [IPP-3/70] 20 p3554 N68-32370 Shock imp cts on blunt bodies and blunt

[FFA-115] 21 p3792 N68-33668

SHOCK LAYERS Integer relations method of determining inviscid shock layer flow and pressure distributions over blunt hodies

[NASA-TN-D-4397] 06 p0765 N68-15778

Differential approximations used to determine effects of nongray gas behavior and nonequilibrium ionization in radiating hypersonic shock layers [NASA-CR-92990] 07 p0983 N68-16368 Entropy layer surn

ng three dimensional blunt rmined in wind tunnel tests 13 p1988 N68-23391 body at angle of attac [NASA-CR-94481] Coupling radiative and convocraonic blunt body reentry nd convective heat transfer in

INASA-CR-61224] 15 p2573 N68-25806

Fluid flow analysis on viacous merged shock layer with nonequilibrium chemical reactions in stagnation region of reentry vehicle [TR-0158/3240-10/-8] 15 p2454 N68-26412

ruend mechanics of atmospheric motion and shock and shear layers, high energy gas dynamics, and mechanics of low density flows - summaries of research activities and bibliography

as hypersonic flo characteristics in shock at bodies using simplified layers of axisymm Navier-Stokes equi [TR-178] 18 p2993 N68-29749

Numerical solutions of integrodifferential equations escribing viscous, heat conducting gas flow between ing viscous, heat co yers and blunt bodie 21 p3794 N68-34111

Time dependent computat layers for two dimensional sy n of blunt body shock metric and axisymmetric flows (PIBAL-68-15) 21 p3683 N68-34608

Spatial distribution of radiant heat in reentry vehicle hypersonic shock layers at angle of attack [NASA-TM-X-61224] 22 p3976 N68-34873 Stagnation region of shock layer in high velocity flow

en over blunt b of hydrogen-oxyge [MICH-8-PU] 23 p4186 N68-36344 NT BLAST LOADS

Variation of shock overpres plosively driven shock tube [ORNL-TM-1966] are with distance in ex-03 p0337 N68-12671 Shock load effects on high density steel reinforced 06 p0918 N68-15221

[REPT.-1]

Statistical s

tion system of ships (NASA-CR-97104)

SHOCK ARSORBERS

Landing impact atte

Diagram for optimal design of shock system in ax-symmetric supersonic diffusers with external compres-IRAE-LIB-TRANS-12591 07 p0989 N68-17155 conducted with Shock response experime clamped circular mild steel plat [SU-DMS-67-36] 09 m1445 N68-19224 Flight test of 30 foot parachute to measure shock stability characteristics [NASA-TM-X-1542] ominal diameter cross ads, drag efficiency, and 11 p1790 N68-21778 12 p1976 N68-22237 rount test of IO-foot nominal-diameter disk-gap band parachate to determine deployment and inflation, opening shock loads, drag efficiency, and stability characteristics (NASA-TM-X-1575) 13 p1993 N68-24245 c explosion effects on inum sheets 14 p2252 N68-25376 Dynamic model for seis restressed plexiglass and alt Environmental shock and vibration data - dynamic structural analyses on cargo handling, ship loading transportation methods, flight vehicle responses, and scale model wind tunnel acoustics [AD-667230] 14 p2360 N68-25477 14 p2360 N68-25477 Shock and vibration environmenter mounted on surface vehicle ent data for weapon 14 p2361 N68-25480 Lagrange equations for impact shock prediction dur-ing ship loading of Polaris A3 missile 14 p2361 N68-25481 mic models for Bernoulli-Euler beams based on ical impedance to represent response to nical impedance to represe nt loading due to ground shock 16 p2777 N68-27431 [IR-7] rface waves during un-16 p2655 N68-27591 Shock and vibration damping in helicopters - struc-tural vibrations and serodynamic shock loads, mathe-matical models for prediction and control of vibrations and vibration isolators. [AD-668328] 16 p2779 N68-27704 Hugoniot equation of state motone, basalt, limestone, pumice measurements for sand ice, quartz, and polycarbonate resin [NASA-CR-73230] 17 p2877 N68-28631 Shock and restart control systems with bypass doors and pressure transducers for mixed compression inlets [NASA-TM-X-52439] 21 p3759 N68-34355 X ray measurements of shock induced stacking faults in copper and brasses 24 p4266 N68-37531 SHOCK MEASURING INSTRUMENTS Shock front measurements in argon-filled mer ock tubes using differential interferometer os po665 N68-14907 Electromagnetic momentur and components of shock mea [PB-176290] m of convection currents, ring system 10 pl519 N68-19546 Pyroteclinic shock tests for Mariner Venus 67 flight acceptance INASA-CR-941521 11 p1790 N68-21760 measurement instrumentation cer calibration, lasers, shock ration tests, dynamic phase stu-Shock and vibration me nd analyses - transducer nalyzers, structural vibrati ies, and underwater acoust (AD-667227) 14 p2367 N68-25561 ock and high impact effects on transducer output signal 14 p2262 N68-25566 Development, construction, and functioning of pres-are transducer with strain wires for high sensitivity, DLR-FB-68-53] 23 p4061 N68-36506 NT IMPACT RESISTANCE

Impact specification bilities for high energy [NASA-CR-94404]

Vibration, accelera fects on functions of vi [NASA-TT-F-11503]

Calculated impact to mechanical properties of [BMWF-FB-W-68-52]

Effect of initial to

granular high explor (SC-CR-67-2803)

d ionizing radiation ef-analyzer 16 p2601 N68-28064

e and joit effects on body 22 p3814 N68-35907

m shock sensitivity of

23 p4159 N68-36805

SHOCK SIMULATORS [NASA-CR-1193] SHOCK SPECTRA Low cost, compa [NOLTR-67-97] INASA-CR-913561 NASA-CR-9 [380] [NASA-CR-91384] Spectral character carbon dioxide and r [NASA-CR-93435] [HDL-TM-67-18] SHOCK TESTS rocket engine propell [NASA-CR-61733] Test and specifica (QR-31 ing diameters (HDL-TM-68-21) SHOCK TUBES ble battery capa 12 p1821 N68-22908

Awakening and startle effects of simulated sonic 03 p0336 N68-12146 [AASU-270] 20 p3407 N68-33005 Characteristics method used to compute flow pro-erties of reflected waves from open end of conical ct analog shock spectrum analyzer 01 p0063 N68-10243 shock tubes [NWL-2121] 03 p0336 N68-12241 Computer program to deter pectra for analysis of transier rmine mechanical shoot flight data in spacecra Heated shock to plasmas with high el [AFOSR-67-2341] shock-generated mercury 03 p0333 N68-12257 04 p0572 N68-12955 Gold inert gas shock tube facility (SCL-DR-67-34) 03 p0333 N68-12379 Fourier spectrum for bingle degree-of-freedom excited, viscous damped illator produced by spec-rammers manual 04 p0482 N68-13162 Variation of shock overpress plosively driven shock tube [ORNL-TM-1966] ure with distance in ex-03 p0337 N68-12671 r digital program to com-Fourier response spectra damped single degree-of Analysis of laminar boundary layer in shock tube, used on channel flow integral momentum and mass flow equations 04 p0587 N68-13232 04 p0493 N68-12995 in cold gas shock tube riven gas 05 p0647 N68-14344 eristics near blant body in Shock front irregularities in using sulfur hexafluoride as driv SCL-DR-67-88) es of nitrogen, argon, air, and agen mixtures at high tempera-07 p1061 N68-16846 Flow development of shock tube [NASA-TT-F-11431] Shock spectrum analysis program for 7094 com-05 p0648 N68-14877 09 p1381 N68-18457 d shock tube for monitor-Evaluation of small or ing simulated atmospher [NOLTR-67-85] lysis of Mariner type Measurement and scecraft separation tra 06 p0822 N68-15326 14 p2364 N68-25526 Schlieren photography of gas stream formation be-nd shock waves discharged from shock tube nozzles 06 p0831 N68-16037 ncept for defining high trum analysis 14 p2365 N68-25528 am failure-frequency cor ency limits of shock spect Normal ionizing shelectromagnetic shock [AFOSR-68-0023] Shock protection design cylindrical structures, housin nel subjected to nuclear blast concepts for multistory g equipment, and person-06 p0891 N68-16079 m in shock tubes and in ock tunnels 07 p0986 N68-16819 Equilibrium in 14 p2367 N68-25548 conical nomies of refle [CAL-AM-1702-A-1] Design and performance of analog shock spectrum nalyzer Physical gas dynam pectra, shock tube str intomic molecules 14 p2262 N68-25570 Numerical solutions in graphical form for shock NASA-TT-F-505 · 07 p0986 N68-16839 15 p2570 N68-26271 rs of cesium behind intermodynamic parameter of and reflected shock way Sinusoidal pulse test m of shock spectra with dam [NASA-TM-X-61198] to account for variation 07 p1061 N68-16843 21 p3789 N68-34346 Luminescence front pr shock tubes Vibration and shock testing for spin motors for sterilizable wide angle gas bearing gyro [NASA-CR-90335] 02 p0210 N68-11175 07 p1061 N68-16848 02 p0210 N68-11175 07 p1062 N68-16849 Development, heat sterilis silver-zinc cell [NASA-CR-93180] on, and shock testing of Shock tube studies of flow of thermally dissociated oxygen, aitrogen, and carbon distide gases through supersonic nozzles 08 pl119 N68-17342 Vibration, shock, and ac Vibration, shock, and ac nce test data for C-1 07 p0987 N68-16857 la p1962 N68-22818 Shock tube studies of physical and chemical changes of carbon dioxide molecules in flow behind shock ways Damage mechanisms in floating shock platt antilever beams mounted and shock tested by un-07 p1062 N68-16860 14 p2365 N68-25531 ng nonstationary heat exchange in reflection of shock wave from solid wall Applicability of cal Heavy weight shock test facilities for Naval ship-07 p1098 N68-16863 14 p2238 N68-25533 Derivation and implications of Navy shock analysis ted with reflection of shock wave 14 p2366 N68-25534 07 p1098 N68-16864 sch shock test facility for Shillelugh an-Piezoelectric pressure pickups for measuring pre-ures of gases and liquids behind incident and reflects book waves, and detonation studies 14 p2238 N68-25537 07 p0975 N68-16866 n and performance for testing new miter concept to extrem ster explosion shocks ance of dual mode shock missile shipping and storage remes of simulated shipboard er for recording pres Mushroom shi in shock tube 07 p0999 N68-16867 14 p2239 N68-25540 derpipe techni SCL-DR-67-491 08 p1156 N68-17220 24 p4259 N68-38205 ng ground shock phenomens shock propagation - loading-actions in soil shock tube in 08 p1251 N68-17635 Procedures for predi nes for argon shock tubes of vary (URS-668-11) 24 p4242 N68-38477 asmos and behavior of oler shock condition 09 p1399 N66-18335 ty of hydr Relaxation effects in nearle flow of hot combustion ases measured by shock tube techniques 01 p0148 N68-10117 ionized gases in mag Glow front interac ck tube driver for use in in electrodynamic alc (NIC-TRANS-2482) 09 p1400 N68-18337 (NASA-CR-950) 01 p0052 N68-10646 om propagating to quasi-ised electromagnetic gas Numerical sim [UCRL-704431 ock tube flow 02 p0199 N68-11452 [NASA-CR-93542] 09 p1402 N68-18930 el facility and techniques for on over blant-nused tracles 03 p0333 N68-12077 RS-446(5)

09 p1329 N68-19112

Shock tube study of hyrogen-oxygen reaction in high imperature, low pressure regimes 09 p1298 N68-19271

sical shock tube study of peroxide formation from gas phase reaction of n-pentane with ox-10 p1484 N68-19928

Large conventional shock tube as pre-lonizer for in-verse pinch shock tube, and application of thin film heat transfer gages and electrostatic probes to partially tunized flows. 10 p1513 N68-20223

Fe and Cr oscillator strength and statistical popula-tion factors measured by absorption technique from shock heated gas [NASA-CR-93856] 10 p1518 N68-20405

Temperature dependence of terglow in nitric oxide shock tube [TR-1001/2240-20/-6, V. 2] of chemiluminescent af-

11 p1646 N68-20728

Thermal ionization zenon and zenon-neon 12 p1945 N68-22075

Gas dynamic properties asso-ationary shock fronts in abciated with traveling and sck tubes for three gas NASA-CR-94316] 12 p1982 N68-22229

Electrostatic effects in shock tube 12 p1948 N68-22292

Experimental and theoretical analyses of electrical arrents in plasma flow behind incident shock in shock tube (SC-DC-67-2052) 12 p1951 N68-22920

Thick quartz transducers for ty shock pulses in shock tube te [SC-DC-67-3204] rs for measuring high intensi-12 p1880 N68-23012 fluxes in high tempera-

Methods for measur ture jets and shock tube [FTD-HT-67-57] 13 p2165 N68-23068

scitography used to study as in shock tubes Double pass schlieren ph shock waves and flow pattern [SUFFIELD-MEMO-34/67] 14 p2253 N68-24374

Shock tube performance tests of very long TNT ex-SUFFIELD-MEMO-60/67)

14 p2297 N68-24664 acteristics and use as sonic boom simulat [NASA-CR-1055] 14 p2236 N68-24966 Nike X shock tube facility

14 n2239 N68-25539 Use of detonable gas explo ns for blast and shock

14 p2375 N68-25547

High intensity shock tube driven molecular beam for gas-surface interactio [NASA-CR-94968] 15 p2450 N68-25747

One phase chemical reaction observed to the molecular beam time-of-flight mass spectrometer to particular beam time-of-flight mass spectrometer 15 p2405 N68-26012

rave investigation using me and cylindrical sh membrane shock tube, Z-pi [BMWF-FBK-67-68] sch, and interferometers 15 p2532 N68-26561 oscillator recordings of

Pressure measurements and o gas flow behind shock waves in di incharge tubes 16 p2736 N68-27596

don in traveling wave hock tabe experiment 16 p2646 N68-27602

mbrane rupturing study for flow shock tube to are thermal conductivity of high temperature

17 p2866 N68-28346 sion of detonable ox-

igen-propane mixtu [ORNL-TM-2094] 17 p2867 N68-28860 Plasma front studies - the behavior of electric shock to [AFOSR-68-1034] sary of research on lasmas 18 p3142 N68-29812

lytical study of normal reflec-Experimental and and m of shock wave from (NASA-CR-95865)

18 p2998 N68-30236 ty of free piston shock 18 p3064 N68-30729

iffect of free flow the al energy release, from ic reactions, on bounda-19 p3384 N68-31014

[NASA-CR-96146] 19 p3366 N68-31695 for iron I and iron II line

spectra (NASA-CR-95970) 19 p3370 N68-32076 Arc driven shock tubes used to measure effect of elium plasma on fluctuation spectrum of externally apposed magnetic field

20 p3558 N68-33151 Boundary layer buildup effects in shock tubes on dis-

(NASA-TN-D-4795) 21 p3681 N68-34089 Aerodynamic shock tubes for molecular spectroscopy in ultrav [AD-672224] s for study of atomic and itraviolet

21 p3653 N68-34574 ock wave interactions in hypersonic and thermal dary layers of shock tubes

22 p3854 N68-34877 High energy flow properties in exp (BRL-1404) 22 expansion tubes 22 p3860 N68-35375

Computer program in FORTRAN 4 for calculating nock tube performance for arbitrary equilibrium real NASA-TN-D-4802) 22 p3853 N68-35466

Kinetic problem of shock tube 23 p4044 N68-36088 Diffusion of precursor is ns and electrons upstream ating down shock tube 23 p4138 N68-36246

of strong shock wave propagi [REPT.-1652/2] Reflection of strong shocks in zenon from end wall of took tubes

23 p4139 N68-36252 titative measurements

retical analysis a [NASA-CR-97190] 23 p4140 N68-36549 w around blunt bodies

High temperature lum in are driven shock tubes [NAL-TR-153] 23 p4048 N68-36561 tests of Sandia thick

(SC-TM-67-807) 23 p4083 N68-36650 Shock tube blow to determine behavior of ctor coolant 23 p4104 N68-37118 decompression of nuc (HTRI-578-P-21-35)

ance characteristics of gnetic shock tube for Systems design and pulticircuit conical elec-termining plasma flow

24 p4322 N68-37443 Design, construction, instrumentation, and operation simple general purpose shock tube for use in labora-

24 p4241 N68-37523 Electrostatic probe theoretation in shock ry for unsteady conditions e measurements 24 p4249 N68-38451 with ion generation [AFOSR-68-1747]

Calculated test ti gon shock tubes of varying diameters (HDL-TM-68-21) 24 p4242 N68-38477 SHOCK TUNNELS

Theory and application of m of platinum film gages for a measurements in shock tun-

[DLR-MITT.-67-15] 02 p0210 N68-11154 testing supersonic com-lock tunnel 02 p0291 N68-11770 HIC-951

n hypersonic shock tun-electrostatic probes 03 p0402 N68-12547 lonized flow m nel using resonant cav [NASA-CR-66513]

Shock tunnel capable of large scale, high velocity, near equilibrium chemical flight conditions [1688D1] generating short duration high density air flow with simulation of free stream 09 p1323 N68-18975

ing easily ionized substances into hypersoni (CAL-AE-2064-Y-1) 11 p1680 N68-21295

Equilibrium piston tec [ARC-CP-982] in gun tunnels. 13 p2047 N68-23209 unel simulation of at of booster rocket ic portion of launch

14 p2183 N68-25514 on characteristics at

[AASU-268] 17 p2870 N68-29361 nt gas constituent concen-ock tunnel using high ener-18 p3072 N68-29808

on in perforated plate shock tunnel 18 p3055 N68-30019 Determining orifice dimension for driver-reservoir technique in sh [NPL-AERO-1255] Pressure decay rate in free piston shock tunnel reser-

18 p3064 N68-30673

Hypersonic shock tunnel and free piston shock tube studies of sixty degree half-angle cones to determine salidity of theories of laminar convective heat transfer etary gases 23 p4191 N68-37406

SHOCK WAVE ATTENUATION

Solid strength effects on pro spherical and plane shock w es 08 p1163 N68-18010 of spherical and [BRL-R-1375]

Diagram for optimal des sonic multishock diffusers w [FTD-HT-23-682-67] ign of axisymmetric super-ith external compression 11 p1777 N68-21618

Linearized supersonic as large sonic boom reduction namic design theory for 22 p3804 N68-34920

Shock wave attenuation ation in long pipes by obstacles to [ORNL-4288] 22 p3974 N68-35681

ock wave method for determining equation of /constitutive relation/ of ice and composite frozen [CRREL-RR-257] 24 p4254 N68-38276

HOCK WAVE CONTROL

Shock and restart control systems with bypass doors and pressure transducers for mixed compression inlets [NASA-TM-X-32439] 21 p3759 N68-34355

SHOCK WAVE GENERATORS

Electromagnetically produced waves examined by means of shi grams, microwave interferogram ments [IPP-3/58] 01 p0118 N68-10650

Plane and spherical transient Voigt waves compared with nuclear and high explosion generated waves in [REPT.-1-170] 02 p0205 N68-11274

Immersion shock general d skin friction in turbu or to reduce heat transfer ent supersonic boundary [NYU-AA-67-106] 04 p0434 N68-13282

Flow development characteristics near blunt body in shock tube [NASA-TT-F-11431] 05 p0648 N68-14877

Electromagnetic acceleration velocity shock waves as [BMWF-FB-W-68-12] n device for simulating d reentry body 14 p2323 N68-24800 Structure of shock waves in colli

ilision free plasma 14 p2326 N68-25147 SHOCK WAVE INTERACTION

Molecular beam and shock wave techniques for determining kinetics of chemical reactions [AROD-4676-7-C] 01 p0022 N68-10540 ol p0022 N68-10540 Shock wave inter-reased burning rate with flame front for in-02 p0283 N68-11553

Influence of shock as shock tube flows [NPL-AERO-1228] fary layer interaction on 03 p0336 N68-12295

mulation of head-on in-thicle and blast wave 04 p0494 N68-13255 Wind tunnel - shock to teraction between supe (NOLTR-67-123)

Flow produced by turbulent boundary layer interac-tion with normal shock wave of sufficient strength to [ARC-R&M-3502] 04 p0438 N68-13904

Breakup, and displa of shock tube [NASA-TN-D-4334] f liquid jets in crossflow 06 p0928 N68-15942

ting ground shock phenomena of shock propagation - loading-eractions in soil shock tube 08 p1251 N68-17635 Procedures for predicti used on one dimensional unloading stress [URS-668-11] ransverse magnetic field

Glow front interact in electrodynamic sho [NIC-TRANS-2482] 09 p1400 N68-18337 lem of impinging shock nendary layer 09 p1326 N68-18526

[NASA-TT-F-11457] 09 p1267 N68-19022 Numerical solution for intera wave with turbulent mixing region n of moving shock

10 p1515 N68-19814 e-bubble interactions and reflection holo ing of long chain polymers in cavitatio

gram secording of lon flow [E-115-A.1] 11 p1683 N68-20833

Shock interactions between supersonic body and 12 p1814 N68-22891 nents on a hemispherical surface Pressure measure interacting with shock wave [SUFFIEED-MEMO-89/67] 14 p2353 N68-24373 Internal loading of structures by blast wave interac-14 p2367 N68-25545

Finite difference method of solving normal show wave-sphere interaction problem for ideal and real g flow fields [NASA-TM-X-60415] 15 p2456 N68-268: 15 p2456 N68-26830 Nonstationary flow form ock tube experiment tion in traveling wave 16 p2646 N68-27602

Shock tube spectral measurements of electron recombinations with nitrogen and oxygen ions in far UV radiation range [NASA-CR-96235] 20 p3552 N68-32284 Interaction of tranverse jet injected into main supersonic stream [AFOSR-68-1419] 20 p3466 N68-33258 Shock wave interactions in oundary layers of shock tubes s in hypersonic and thermal

22 p3854 N68-34877 Approximative solutions for shock wave parameters

of thermal plasmas (DLR-FB-68-37, PT. 31 22 p3941 N68-35097

Interaction between plasma flow and magnetic barri-[IPPJ-72] 22 p3945 N68-35701

Disturbances caused by shock wave interactions with entropy discontinuity in turbulent flows [NASA-CR-98035] 23 p4052 N68-37232 SHOCK WAVE LUMINESCENCE

Shock wave luminescence in coaxial plasma ac-celerator and snowplow effects [NAL-TR-135] 02 p0253 N68-11231 High temperat low around blunt bodies

[NAL-TR-153] 23 p4048 N68-36561

SHOCK WAVE PROFILES

Wind tunnel tests on pressure distribution, and shock tapes of conical blusted bodies moving at supersonic neds in nitrogen, or helium media speeds in nitrogen, or h [NASA-TN-D-4314] 08 pi 106 N68-17896

Integro-differential system of equations for calculat-ing air flow behind strong shock fronts taking account of nonequilibrium ionization and radiation transport radiation transport 12 p1861 N68-22284

Strong shock wave structure, molecular flow and col-sions, and continuum mechanics 15 p2453 N68-26228

ixtures and plasmas 18 p3147 N68-30825 Shock wave structure in gas mixts [UTIAS-130] 18

Effect of gas in liquid-gas mixtures on pressure surges due to flow rate changes [SF-920] 20 p3459 N68-32421

Expansion series method for analyses of shock wave profiles in far field sonic boom 22 p3803 N68-34918

SHOCK WAVE PROPAGATION sively accelerated shock to be driver for use in

high energy gas dynamics rese [NASA-CR-950] 01 p0052 N68-10646

Shock trus [TR-1-794] e and snow 02 p0206 N68-11388 Mathematical models and statistical analyses for fluid mechanics, gas dynamics, detonation wave propagation, particle motions, perturbation theory, and

flat plate creep [FTD-MT-64-88] 02 p0293 N68-11548 Approximation method for gas parameters behind shock wave front

02 p0284 N68-11555 Collision between two estruction and transformat st moving plates with nto gas 02 p0276 N68-11556 destruction and (MT-63-262)

on detonation wave front ne-acetone mixture 02 ±0285 N68-11564

e shock wave propagation 02 p0201 N68-11669

er interactions of spherical shock waves from shaped charge explosions and free sur-02 p0201 N68-11670 weak magnetic fields in waves of point explosions gases which are at rest 02 p0256 N68-11681

del for determining den-roducts in closed tubes 02 p0286 N68-11687 ting comb

aves from solid walls in Mach-Zender inter-02 p0201 N68-11692

Vibrational relaxation effects in blast waves before secondary shock front onset

02 p0201 N68-11693 Shock wave propagation in two dimensional crystal 03 p0405 N68-12115

Characteristics method used to compute flow pro-erties of reflected waves from open end of conica perties shock to INWL-21211 03 n0336 N68-12241

Short duration shocks induc impact of thin Plexiglas plates ced in Plexiglas targets by 03 u0357 N68-12400

Electronic effects related to shock wave propagation in metal joints 03 p0408 N68-12439

Transition from subsonic flow to mixed flow with steady terminating shock waves - airfoils [ARC-CP-964] 03 p0298 N68-12616

Electron density me reflected shock wave [NOLTR-67-139] nents on air behind .04 p0552 N68-12943

Shock wave compression of pressings of magnesium and a sured by streak camera method on of disk-shaped porous ad ammonium sulfate mea-04 p0594 N68-12974

Lagrangian mesh code computations of shock initia-tion in homogeneous and heterogeneous explosives 04 p0496 N68-13811

Shock and detonation wave steel, titanium, copper, and ale rave effects on low carbon inum alloys 04 p0591 N68-13838

Shock induced transform ation of titanium-nickel al-INOLTR-67-781 06 p0853 N68-15207

Atmospheric refraction analysis for shock wave traveling in gravitational field [ISL-T-44/66, PT. 3] 06 p0825 N68-15217

Pressure shock wave propagation along elastic linear [ISL-T-4/67] 06 p0918 N68-15224

Mathematical me efraction in isobar odel for calculating shock wave atmosphere with vertical temperarefraction in isobar atms ture, and wind gradients [ISL-T-14/66, PT. 2] 07 p0983 N68-16145

Thermodynamic parameters cident and reflected shock waves ters of cesium behind in-07 p1061 N68-16843

Luminescence front propagation in electromagnetic shock tubes 07 p1061 N68-16848

Peculiarities of Mach reflection of shock waves mov-ing in carbon dioxide and nitrogen at supersonic speeds

07 p0987 N68-16862 Shock wave-vortex sheet interaction concept for effects of winds and inhomogeneous atmosphere on sonic [NASA-CR-92676]

07 p0936 N68-16916 Scientific research studies in fluid dynamics, plasma shysics, soil mechanics, and combustion ther-(FTD-MT-64-84) 08 p1209 N68-17701 scipation mechanism of shock wave in rarefied tur-nt plasma

08 p1218 N68-17705 Relativistic magnetohydrodynamic equations for structural analyses of shock waves
08 p1218 N68-17706

mic compressibility measurements on sandy singed by high pressure shock 08 p1209 N68-17712

Diffraction, and reflection of gaseous shock wave flow past solid body 08 p1252 N68-17719

Mathematical model for detonation wave propaga-tion of cylindrical explosion in nonuniform medium 08 p1209 N68-17720

08 p1257 N68-17726

Solid strength effects on pro of spherical and plane shock w [BRL-R-1375] on and atte 08 p1163 N68-18010

Destruction of sharp to waves due to high beta eff [CLM-R-74] 09 p1402 N68-18899

Two dimensional di termoelasticity in the contours of rings imm isymmetric problem is applied along of nedia of constant FTD-HT-66-547)

11 p1799 N68-21604 Spherically symmetri-tive gas dynamic equatic exploding shock wave po [NASA-CR-94409] rity solutions of radio-ined for imploding and 12 p1949 N68-22711

Microwave mean tem for laser produced [D1-82-0688] 13 m2129 N68-24170

of shock waves in rarefled tic field Stability and propag plasma within strong m [FTD-MT-24-182-67]

13 p2130 N68-24289 Kinetics of phase to wave compression ion in solids by shock 14 p2330 N68-24928

Viscosity model for shock wave propagation in stress relaxing iron

14 n2360 N6s-25393 Potential of exploding wire apparatus for laboratory mulation of shock waves

14 p2238 N68-25538

ock pulse measurements for nicrophones 14 p2261 N68-25563 on and path curvature effects on acoustic

16 p2645 N68-27579

Shock wave propagate wave front velocity and bodies 17 p2980 N68-28675

Varying striking velocity and ber length, plastic formation and yield point, and stress-strain diagrams or analysis of impact tests on A1 and C steel using ock wave propagation theory. 18 p3176 N68-29876

ck wave propagation and amic system 18 p3124 N68-30393 pelartic analysis of six on of constraints in dy direction of T-38/671

Strong shock wave proj into cold inhomogeneous [PUBL.-68-3] on from point explosion phere 20 p3471 N68-32819

Theory of finite an elastic tubes, including propagation, and Korot [NASA-TN-D-4803] le waves in fluid-filled distortion, shock wave ds 20 p3463 N6E-33056

nalogies of shock wave and membrane 21 p3682 N68-34332 Conference on sonic boom reduction in superso ansport flight - shock wave propagation and refr on, prediction methods for acoustic attenuation, a

aerodynamic eng 22 p3802 N68-34907 prediction method for Test data evalua mersonic boom sig

22 p3802 N68-34910 for supersonic transport 22 a3803 N68-34913

d atmospheric effects on I sonic boom reduction 22 p3804 N68-34922

Ray expansion method for predicting shock wave opagation and sonic boom intensity

22 p3804 N68-34923 Computer program for calculating aircraft sonic boom signatures on around

22 p3804 N68-34924 Similarity rules for ray analysis in nonlinear acoustic ave propagation

22 p3855 N68-34926 Linear viscoelastic wave propagation and attenution in polymethyl methacrylate ruds 22 p3970 N68-35030

Nonequilibrium radiation and ionization in shock 22 p3927 N68-35166

Parabolic body shock wave propagation in one dimensional hypersonic flow (ARL/A-298) 23 p4048 H68-36562

ructure of shock heated corona 21 24 p4325 N68-38132 [AFCRL-68-0312] Perturbation theory and similarity solutions for propagation of strong shock waves [DLR-FB-68-52] 24 p4248 N68-38357

SHOCK WAVES

MAYES
DETONATION WAVES
NORMAL SHOCK WAVES
OBLIQUE SHOCK WAVES
SONIC BOOMS NT

Enthalpy, temperature, and density charts for equilibrium isentropic expansion of air behind shock waves for wide range of velocities and altitudes [NASA-TN-D-4247] 02 p0281 N68-11144

Addition of secondary shock capability and modifi-tions to three dimensional characteristics program [R-653] 02 p0197 N6E-11187 [TR-653]

Supersonic wind tunnel study of two dimensional accordary fluid injections between Mach 1.64 to 3.08 [AE-165A] 02 p0198 N68-11278

Detonation rates and mechanisms, shock waves, transition points, and stability of explosive materials [FTD-HT-66-254] 02 p0282 N68-11458 Detonation mechanism of liquid explosives - critical

charge radius 02 p0282 N68-11459

Factors determining transition of explosive materials from deflagration to explosion 02 p0283 N68-11462

Detonation rates and community of the strong policy Detonation rates and combustion shock waves of

Mechanism of ammonia oxidation in shock waves with mixtures of argon and nitrous oxide [CPD-114] 03 p0425 N68-12253

Stress waves and dynamic characteristics of rocks subjected to shock wave loads from explosion 03 p0339 N68-12260

Plane shock wave refraction at interface between oum and copper 03 p0336 N68-12349

Speed of expansion waves in aluminum alloy previously compressed by shock wave
03 p0351 N68-12350

Shock wave-induced electron perturbations in crystal surface of solid due to phonon emission 03 p0408 N68-12462

Explosive processes in granular penthrite subjected shock wave, and Doppter effect measurements 03 p0427 N68-12463

Phase transitions in rare earth metal oxides, in rare earth metal fluorides, and in manganese fluoride, induced by shock waves from explosives. osives 03 p0423 N68-12519

Shock wave effects on phase transformations in ger-manium dioxide, silicon dioxide, titanium dioxide, tin dioxide, and lead dioxide

03 m0315 N68-12564 Shock wave effects on metal and ionic crystal struc-

03 p0385 N68-12765 Gas dynamic model for response of burning propel-nt surface to pressure pulses induced by shock waves DR-7] 04 p0394 N68-13223 lant surf

Error calculations of Monte Carlo solutions to non-near Boltzmann equation - numerical studies of strong shock waves [R-360, PT. 10] 04 p0494 N68-13291

Shock wave equation of state for liquid oxygen 04 p0504 N68-13793

Shock compression effects on catalytic activities of oxide semiconductor catalysts 04 p0474 N68-13799

X ray diffraction analyses on shock compressed sil-icates, and mixtures of iron-tungsten and tungsten-car-bon powders 04 p0523 N68-13800

Microstructure, and X ray analyses on fusion zone compositions after explosive joining of metals 04 p0517 N68-13801

Detonation pressure measurements in condensed ex-losives at low and high initial densities using multiple ash gap and photomultiplier techniques 04 p0598 N68-13812

Velocity interferometer measurements of compressive and release wave shapesfine structure in aluminum alloys

04 p0590 N68-13813 Gas gun induced high pressure effects on flat plates 04 p0391 N68-13832

New standards for shock wave equation of state 04 p0592 N68-13888

Atmospheric nonuniformity effect on shock wave decay and sonic boom intensities generated by super-[ISAS-416]

05 p0701 N68-14558 Generation of shock wave detonation in granular structure - mathematical model

05 p0758 N68-14911 Electrohydraulic forming of sheet metal under water 06 p0849 N68-15035

Magnetopause and bow shock boundaries from IMP-2 satellite and operations of plasma detector [NASA-CR-91901] 06 p0908 N68-15189

Hydrodynamic equations solved for flow behind front of weak shock wave in water - Landau damping 06 p0828 N68-15612

Shock waves associated with underwater exploding wires compared with chemical explosives by law of similarity [IR-67-87] 06 p0815 N68-15653

Zero incidence forebody pressure drag coefficients of axisymmetric bodies for measured bow shock wave (NPL-AERO-1245) 06 p0763 N68-15739

Magnetohydrodynamic shock in plasma with ion accustic wave instability dissipative mechanism [CLM-M-59] 06 p0890 N68-15888

Extension of Wetzel theory to explain electron precursor phenomena in pressure drives shock tubes [PiBAL-1006] 07 p0983 N68-16236

Shock wave and viscous layer structure in rarefled hypersonic flow near leading edge of sharp flat plate [ISAS-418, V. 32, NO. 11]

07 p0985 N68-16549

Experimental determination of electron concentra-tions and effective frequencies of electron collision with neutral particles in various gases behind reflected shock waves 07 p1051 N68-16853

Ionization processes in argon behind reflected shock

07 p1062 N68-16854 Shock tube studies of physical and chemical changes of carbon dioxide molecules in flow behind shock wave

07 p1062 N68-16860

Shock wave reflections in mixtures of argon and nitrous oxide measured for studies of kinetics of decomposition reaction [WRE-TN-CPD-114] 08 p1255 N68-17321

Effects of shock induced boundary layer separation on cone cylinder bod [NASA-CR-61560] der body aerodynar 08 p1106 N68-17593

Relativistic magnetohydrodynamic equations for structural analyses of shock waves 08 p1218 N68-17706

Shock initiation of detonation waves in subsonic mixtures of gaseous hydrogen, and oxygen [ARL-67-0202] 08 p1258 N68-17946

Electron density and ionization phenomena of well eveloped shock waves in air within Mach numbers 7-[AFOSR-68-0230] 09 p1325 N68-18383

Strong blast waves and dynamics of laser-induced plasmas investigated in high pressure gases [AFOSR-68-0232] 09 p1349 N68-18431

Energy calculation of shock wave from underwater [FTD-HT-66-574] 09 p1325 N68-18475

Results of including boundary shock wave in calcula-tion of flight parameters of large high speed meteor [NASA-TN-D-4325] 09 p1328 N68-18997 Shock tube and aeroballistic research [JPRS-44615] 09 p1329 N68-19112

Analytical and numerical solutions of partial dif-rential equations for effect of viscosity on transonic

10 p1455 N68-19732 [AROD-3537-5-E] Heat transfer in shock-induced unsteady boundary layer on flat plate 10 p1614 N68-20136

Direct solution of Boltzmann equation for molecular velocity distribution function of shock waves [PIBAL-1027] 10 p1517 N68-20351

Precursor ionization due to photoionization of heli-um impurities in argon shock waves [PIBAL-1033] 11 p1763 N68-21382 11 p1763 N68-21382

Computer calculations of shock wave relaxation re-tions and equilibrium tables for pure carbon dioxide and nitrous oxide and nitrous oxide [ARC-R&M-3472] 11 p1686 N68-21707

Relationship of shock standoff distance, at sonic and stagnation points, to body geometry of blust bodies at zero angle of attack [NASA-TN-D-4539] 12 p1809 N68-21941

Gas dynamic properties associated with traveling and stationary shock fronts in shock tubes for three gas [NASA-CR-94316] 12 p1982 N68-22229

Bubnov-Galerkin method using shallow shell non-near equations to determine snapping of elastic cylin-rical panel subjected to weak acoustic pressure shock

12 p1978 N68-22525 Generation of detonation by shock wave in granular

(LA-TR-68-2) 12 p1984 N68-22795 Shock waves in highly ionized hel [NASA-CR-94395] 12

helium gas 12 p1951 N68-22854 Experimental and theoretical analyses of electrical currents in plasma flow behind incident shock in shock tube [SC-DC-67-2052]

12 p1951 N68-22920 Manual for computer program calculations on flow field about conical body with flare induced secondary shock at angles of attack [GASL-TR-653, PT. 2]

13 p2050 N68-23104

Explosive mechanism of hydrogen oxygen reaction near second ignition limit [BRL-R-1386] 13 p2170 N68-23727

Reaction kinetics of hydrogen halides in shock waves - reactions CI plus HCI and CI plus molecular chlorine [TR-0158/3240-20/-8]

13 p2020 N68-24053

Surface pressure distribution estimate from observed shock wave envelopes surrounding conical body in supersonic flow using schlieren photography [NPL-AERO-1244] 13 p1989 N68-24131 Stability and propagation of shock waves in rarefied plasma within strong magnetic field [FTD-MT-24-182-67] 13 p2130 N68-24289

Pressure measurements on a hemispherical surface interacting with shock wave [SUFFIELD-MEMO-89/67]

14 n2353 N68-24373

Double pass schlieren photography used to study ock waves and flow patterns in shock tubes shock waves and flow patterns in sl [SUFFIELD-MEMO-54/67]

14 p2253 N68-24374 Radiative heat transfer and self absorption effect on flow field and heat transfer behind reflected shock

14 p2369 N68-24545 Design and performance of analog shock spectrum

14 p2262 N68-25570

Shock wave parameters studied with shadowgraph photography using high speed motion picture camera 14 p2266 N68-25597

Shock wave generated thermodynamic data for hydrocarbons, organic compounds, explosives, and other alloys and mixtures [UCRL-50108, V. 2, SUP. 1] 15 p2565 N68-25693

ck wave thermodynamic data [UCRL-50108, V. 1, SUP. 1]

15 p2506 N68-25705 Formation of shock wave and magnetosphere by im-

pact of solar wind NASA-TM-X-60257] 15 p2550 N68-25986 Generation of shock waves and acoustic energy conversion in wide band noise generator
[AFFDL-TR-67-88] 15 p2509 N68-26370

Plane and cylindrical shock wave investigation using membrane shock tube, Z-pinch, and interferometers [BMWF-FBK-67-68] 15 p2532 N68-26561 and interferometers 15 p2532 N68-26561

Explosive forming of aluminum alloy sheets with water, sand, and subber as transmitting media [FTD-HT-67-8] 15 p2474 N68-26681

Shock wave structure in phase transition near ther-nodynamic equilibrium of adiabatic curve atic curve 16 p2645 N68-27597

Dorodnitsyns integral method for analysis of onequilibrium supersonic flow with attached shock

16 p2648 N68-27820

Effect of strong shock waves on polycrystalline nickel - Rydberg series calculation of high pressure elastic constants for nickel 17 p2898 N68-28378

Existence of one dimensional steady shock waves in onlinear materials with memory 17 p2920 N68-28673

Calculations of shock wave pattern in field surround-ing arbitrary aircraft configurations at supersonic speeds based on wing-body analysis methods (NASA-CR-73109) 17 p2807 N68-28863

Shock wave position determined from pitot pressure (VTH-147) 17 p2874 N68-29261 and Mie-Gruneisen equations of state [UCRL-70670, REV. 1] ding shock waves and late-stage equivalence xplosion of high pressure sphere in atmosphere of by method of characteristics 3-12] 17 p2874 N68-29401 during explosion of high pressure calculated by method of characte [DIT-125-12] Shock wave decay and energy dissipation to study crater size in hypervelocity impact 18 p3176 N68-29898 Shock wave theory, destructive effect of explosions, and fundamentals of gas dynam (FTD-HT-66-258) 18 p3061 N68-29967 Experimental and analytical study of normal reflec-tion of shock wave from shock tube end wall in relaxing diatomic gas [NASA-CR-95865] 18 p2998 N68-30236 Shock wave effects on iron and iron-nickel alloys in meteorites analyzed by phase diagrams and residual ef-fects due to shock loading [NASA-CR-95873] 18 p3166 N68-30315 Supersonic gas flow and heat transfer in region of shock wave incident on cylinder [NASA-TT-F-11795] 18 p2998 N68-30336 Oscillatory structure of netohydrodynamic shock wave [CTO-465] si-stationary magin plasmas 18 p3145 N68-30379 Polariscopic visa lindrical cavity salization of wave diffraction in (T-3/7) 18 p3124 N68-30394 High velocity shock wave holography by freely swinging ruby laser [T-41/67] 18 p3084 N68-30498 Shock wave compression of benzene, carbon disulfide, and lie [LA-3915] d carbon tetrachloride, quid nitrogen 18 p3030 N68-30674 Open and closed form shock in magnetohydrodynamic shock waves [NASA-TT-F-11699] 18 p3146 N68-30732 Sonic boom origin based on nonlinear theory of short shock waves [NASA-TT-F-11474] 18 p3003 N68-30792 Leading edge shock box dary layer interaction on (ARC-CF-978) 19 p3193 N68-31039 nation for determining flow field of ressure sphere into atmosphere 19 p3264 N68-31270 Hartree approximation for deter spansion of high pressure sphere is Approximate solutions of shock wave dissipation in radiation containing shock [FTD-HT-23-514-67] ons of gas dynamic equations for n in stellar atmosphere and for 19 p3364 N68-31313 ohydrodynamic shock Structure of plane ma wave in rarefied fully ionize [NASA-CR-95956] 19 p3340 N68-31436 Snapping mechanics of cylindrical panel under acoustic shock wave pressure [PB-177581T] 19 p3380 N68-31739 Differential equations of two models for profile of hock waves in monatomic gases and hydrogen plasmas [ASE-1892] 19 p3342 N68-31754 Solid rocket comb stability due to oscillating shock wave in comb [AFOSR-68-0771] 19 p3357 N68-32014 Spherical blast war on waves in rocket combustion chambe [NASA-CR-96158] 19 p3360 N68-32048 Particle fluid mecha waves, and shock waves shear flows, acoustic 20 p3458 N68-32337 e low pressure range 20 p3461 N68-32700 (FTD-HT-67-175) s behind shock wave in simulated Mars atm (NASA-TM-X-1634) 20 p3463 N68-32982 Initiation of PETN by imp cting hydrogen-oxygen detonation waves [NRC-10122] 21 p3792 N68-33822 ydraulic analogy study branched ducts 21 p3679 N68-33846 Experimental study of wave propagation in hydrogen CN-24/A-6] 21 p3751 N68-34616 Theoretical models of novae

22 p3957 N68-34823

Experimental and theoretical study of normal shock reflection from flat walls Short circuit anomalis Agena rocket from boost 22 p3854 N68-34897 m flow behind mov-Inviscid chemical no SHORT SC-1 AIRCRAFT U SC-1 AIRCRAFT ing normal shock wave 22 p3860 N68-35400 Forces, pressu hypersonic gun to [DLR-FB-68-41] are distribution, small page No. 100 N Relaxation zone behis strong shock wave front in Economic and suitab 22 p3863 N68-35698 INASA-CR-970111 transport aircraft con [NASA-CR-986] Glass laser for pro-high temperature plan (UCRL-70849) strong shock waves and Wind tunnel determin 22 n3887 N68-35877 Secondary shock we around blunt nose con (FTD-HT-67-460) varying wing aspect ra tion in hypersonic flow 22 p3864 N68-35930 Wing surface press tunnel tests of propell [NASA-TM-X-1527] Normal ionizing shock on, and equations applied plasma theory s, shock structure of ar-le to macroscopic and 23 p4137 N68-36083 Equilibrium thermodynamic properties and electron concentrations of cesium-argon mixtures behind in-cident and reflected normal shock waves [HDL-TR-1388] 23 p4138 N68-36158 Basic characteristics V/STOL aircraft [NASA-TM-X-59740] es of ionization in shock NASA research progra takeoff and landing airc helicopters, and tactical figl [NASA-TM-X-59964] 23 p4138 N68-36211 Diffusion of precursor ions and electrons upstream of strong shock wave propagating down shock tube [REPT.-1652/2] 23 p4138 N68-36246 Experimental measurin solid propellants so from projectile impact (NASA-CR-66682) it of rates of energy release of to strong shock waves 23 p4159 N68-36348 Propagation characteristics patterns of to tennas, and ultrashort w [JPRS-43651] Theoretical study of as teraction of turbulent em [NASA-CR-61985] c wave generation in in-nent with shock wave 23 p4107 N68-36382 devices for shock wave Pneumatic and ele AFOSR-68-1772] 23 p4047 N68-36396 Interferometric study of nonequilibrium shock reflection process and thermal conductivity in ionizing INASA-CR-972521 23 p4143 N68-37052 Jump conditions across transcented by the conditions across the con Short wave fading and mi General numerical procedure for solutions of viscous ompressible flows with shock waves 24 p4243 N68-37501 SHORTENING U REDUCTION Structure of shock waves in thermally conducting SHOT NOISE (NIC-TRANS-2632) 24 p4324 N68-38070 Molecular relaxation effects on parameters of minar boundary layer of traveling shock wave 24 p4246 N68-38112 [PPAD-609D] Quasi-linear equation for velocity distribution func-tion of strong electrostatic collisionless shock wave [MPL-PAE/FL-6/68] 24 p4324 N68-38128 [TR-180] 24 p4351 N68-38314 Hypersonic similarity solutions for airfoils susporting exponential shock waves to determine if airfoil concavity enhances lift drag ratio (RM-5724-PR) 24 p4196 N68-38438 24 p4196 N68-38438 ory for unsteady conditions n in shock wave measurements 24 p4249 N68-38451 with ion generation [AFOSR-68-1747] SHOOTING STAR AIRCRAFT U T-33 AIRCRAFT Maintenance shops and equipment for handling nuclear reactor radioactive materials [IN-1176] 17 p2896 N68-29477 SHOT PEENING HORT AND HARLAND AIRCRAFT U SC-1 AIRCRAFT IARL/MET-521 Surface treatments for impresistance of stainless steel ju [AECL-2732] SHORT CIRCUITS N/p silicon solar cell calibration by measurement of short circuit from cells exposed to solar radiation [ESRO-TN-5] 07 p0938 N68-16340 HRINKAGE eory and experiments on transient wave expansion rious transmission line arrangements to determine ient voltage form in short-line fisalis 09 p1321 N66-19469 Shrinkage, thermal cond-tering of aluminum oxide radioactope nower systems [ALO-3633-8]

Short-circuit current measurement of covered and uncovered silicon solar cells at irradiance up to five solar constants for different angles of incidence (ESRO-TM-113/ESTEC/)

13 p1996 N68-23984

SHRINKAGE ns occurring at separation of 15 p2443 N68-26885 SHORT TAKEOFF AIRCRAFT Wind tunnel tests of deflected slipstream cruise fan V/STOL aircraft wing [NASA-TN-D-4262] 02 p0157 N88-11036 mparison of short haul 04 p0444 N68-13517 n of longitudinal force 09 p1271 N68-18771 from large scale wind hort takeoff aircraft 09 p1271 N68-19065 Dynamic response criteria V/STOL aircraft simulator train [NAVTRADEVCEN-1753-3] ria for helicopter and 13 p2049 N68-24052 opeller, fan, and jet 15 p2384 N68-25879 on vertical and short, including transports 16 p2589 N68-27806 HORT WAVE RADIATION NT MICROWAVES NT MILLIMETER WAVES NT SUBMILLIMETER WAVES SPRINGER design concepts, and 03 p0324 N68-12753 Tabulated data on measure sea surface and air tempera type, and wind speed in Indias ents of global radiation, es, cloud amount and 21 p3717 N68-34257 SHORT WAVE RADIO TRANSMISSION Effect of geomagnetic disturbances on usable short wave radio frequency bands at auroral zone fringes [REPT.-24/1965] 06 p0833 N66-15342 rowave radio burst activity 13 p2146 N68-23692 Accelerator beam degeneration from amplified shot 03 p0398 N68-12771 Shot noise fluctuations in secondary electron emission of magnesium and aluminum oxides, and polycrystalline tungsten 15 p2541 N68-26595 nce and shot noise for-ic admittance and curmulas used to calculate electro ty page 17 n2864 N68-28700 Noise in metal oxide and space charge limited diodes 20 p3453 N68-33466 Feedback model on shot noise phocharge limited crossed field electron p 21 p3667 N68-33987 Thermal and shot noise in at or near plasma frequencies (IPPJ-71) iescent plasms probes 22 p3944 N68-35643 shot peened alumina 18 p3090 N68-30160 wed wear and corrosion nals in water 24 p4270 N68-38346 Variable restraint technique for study of hot cracking and weldshillry in fusion welds n welds 16 p2682 N68-27811 activity, porosity, and sin-for thermal insulation in

17 p2904 N68-29115

LO-3633-6] Sintering and grain growth of thoria gels. 19 p3396 N68-30887

S

(

-

[]

a I

ft

11

[]

10

[]

ini (N

ap

and [U

[R

SIGN.

S

Three dimensional photoelastic analysis of specific propellant grain geometry subjected to restrained shrinkage

21 p3757 N68-33624

SHROUDED BODIES U SHROUDS

SHROUDED NOZZLES

Base bleed effect on base pressure measured on trouded and unshrouded jet nozzles at Mach 1.96
ARC-CP-962] 04 p0434 N68-13155 [ARC-CP-962]

Wind tunnel model tests of variable flap ejector noz-zle with aerodynamically positioned shroud [NASA-TM-X-1639] 18 p3158 N68-30599 Effect of primary-secondary flow mixing lengths on shrousled rotary exhaust nozzles of turbojet engines [NAPTC-ATD-147] 19 p3359 N68-31559

Far field acoustic prediction method for ejector jet noise of mixed and unmixed flows, and shroud length criteria for complete mixing [D6-17093TN] 20 p3395 N68-32193

Effects of shroud geometry on performance of collapsible plug nozzle at Mach numbers from 0 to 2.0 [NASA-TM-X-1657] 23 p3983 N68-36132

SHROUDED PROPELLERS

Diffusion control and power thrust efficiency of shrouded propellers operated at hovering velocity 04 p0435 N68-13347

Comparative performance data on open propeller, shrousled propeller, and turbofan propulnion systems for army aircraft mission requirements [DCR-248]

SPROUDS

Engineering analysis of shroud, temperature control, and plume heating in recommended Voyager apaceeraft configuration [NASA-CR-93525] 09 p1437 N68-19161

Detailed design drawings and bonding techniques for shrouded titanium impeller [NASA-CR-61450] 15 p2474 N68-26564

Pyrotechnic shaped charge aerospace vehicle stage and shroud separation systems development [NASA-TM-X-1607] 17 p2976 N68-28869

Acoustic and mechanical vibration transmission paths to shroud enclosed spacecraft [NASA-CR-96144] 19 p3383 N68-32127

SHUNTS

U BYPASSES U CIRCUITS SHUTDOWNS

Rapid cutoff system for cyclotron beam [UCRL-17728] 08 p1157 N68-17930 Postshutdown cooling requirements of tungsten

water moderated nuclear rocket engines [NASA-TM-X-1568] 11 p1740 N68-21111 Scram tests to determine transient characteristics of aclear reactor and associated heat transport system at

shutdown [APDA-NTS-15] 16 p2709 N68-28203

Turn-off properties of three layer diodes and thyristors for high current circuits 18 p3048 N68-30607 Postflight analysis of J-2 engine premature shutdown due to fuel system failure resulting in engine damage [NASA-CR-61992] 22 p3955 N68-33862

SHUTTERS

Environmental tests of a galvanometer movement for use as a sunlight shutter in space applications [RAE-TR-67260] 18 p3072 N68-29742 SIBERIA

Geological and geophysical data compiled for tec-tonic mapping of Yakutian Autonomous Soviet So-cialistic Republic [ACIC-TC-1148] 01 p0059 N68-10682

01 p0059 N68-10682 Statistical analysis on noctilucent cloud occurrence with synoptic meteorological and ionospheric condi-tions in Siberia [NASA-TT-11525] 10 p1551 N68-19751

Keratophyre-Spilitic formation of south Yenisey countsin ridge and possible nature of Kasakaya mag-

[ACIC-TC-1351] 15 p2464 N68-26932 Analysis of synoptic meteorological maps for noc-tilucent clouds over western Siberia [NASA-TT-F-11524] 16 p2701 N68-28065

Magnetic properties of trap rocks from Siberia [RTS-4469] 20 p3468 N68-32496

SIC [COEFFICIENT]
U STRUCTURAL INFLUENCE COEFFICIENTS

U ALTITUDE SICKNESS U DECOMPRESSION SICKNESS

SID [IONOSPHERIC DISTURBANCES]
U SUDDEN IONOSPHERIC DISTURBANCES SIDE-LOOKING RADAR

Application of spacecraft borne side-looking radar naging systems and radar altimeters in oceanic and rrestrial studies [NASA-CR-89983] 01 p0056 N68-10284

Side-looking radar photography for mapping geolog-ic and topographic features [NASA-CR-9[439] 04 p0499 N68-13146

Effect of increased target information and aircraft elocity on side looking-radar operator performance in target identification [AMRL-TR-66-149] 05 p0630 N68-14444

Radar and infrared imaging techniques for dif-rentiating rock types and delineating structural fea-[NASA-CR-94544] 13 p2057 N68-23210

Target detection on side-looking radar with tempora-ry image motion delay [AMRL-TR-67-23] 13 p2030 N68-24090

Photographic recording method for signals of side looking radar system 20 p3481 N68-33403

Receiver bandwidth effects on range and azimuth performance of side-looking radar 20 p3481 N68-33404

Side-looking radar with synthetic antennas, and methods of obtaining higher resolution 20 p3482 N68-33405

nts for mechanical and electrical of radar land mass transparency system 68-8] 22 p3839 N68-35941 components of radar [AMRL-TR-68-8] Simulated task loading effects on side looking radar

[AMRL-TR-67-141] 22 p3817 N68-35942 Effect of auxiliary ma agnification display on side

looking radar target recognition [AMRL-TR-67-134] 22 p3818 N68-35945 Spacecraft radar present and future applications in indezvous and soft landing rendezvous and soft lan [NASA-TM-X-60473] 23 p4020 N68-36488 Lunar Orbiter 5 side-looking radar experiment, and power spectral densities for binary frequency shift keyed waveforms

23 p4024 N68-37420

SIDELORE REDUCTION

Radiation patterns and side-lobe levels synthesized for circular radar antenna arrays [NELC-1501] 02 p0183 N68-11775 Sidelobe and power gain optimization and array synthesis for antenna arrays

18 p3032 N68-29571

SIDELOBES.

Computer techniques for designing unequally spaced antenna arrays [EE-0967-4] 04 p0477 N68-13222

Illuminations for circular aperture phased arrays to approve sidelobe efficiency 06 p0801 N68-15821

influence of element thinning in large phased arrays in terms of gain, sidelobe distribution, average sidelobe level, and sidelobe confidence levels level, and sidel [R67ELS-91] 11 p1660 N68-21114 ce effect on achievable

Radar system incoherence effi-sainliobe widths and sidelobe levels 11 p1664 N68-21609 [MTR-488] Synthesis of nonuniformly spaced antenna arrays 24 p4222 N68-37594

SIDERITE METEORITES
U IRON METEORITES

SIDEST IP

Low speed wind tunnel tests to determine roll stability of SC-1 aircraft scale model at large sidealip [RAE-TR-67104] 04 p0443 N68-13424

Flight simulator to evaluate lateral-directional handling qualities of piloted reentry vehicles
[NASA-TN-D-4410] 09 p1437 N68-19226

Sideslip angle effects on static stability characteristics of T tail transport configuration [NASA-TM-X-1665] 23 p3983 N68-36112

SIDEWASH U BACKWASH

SIEMENS 2062 COMPUTER Operations, equipment, and capabilities of West lerman aerospace research computer center during

[DLR-MITT.-67-04] 04 p0483 N68-13386 SIEVES

Mechanical fog dispersal method for airport runways (RAE-LIB-TRANS-1257)

09 p1323 N68-19059

Development, and evaluation of sieve sampler, and rotating wire brush sampler for planetary soil probing [NASA-CR-93678] 09 p1428 N68-19394

SIGHT U VISUAL PERCEPTION

SIGMA 7

Description and performance analysis of manned six-pass orbital mission /Mercury-Atlas 8/ [NASA-TN-D-4807] 22 p3964 N68-35022 SIGNAL ANALYSIS

Signal representation and analysis - statistical estima-on of intrinsic dimensionality and parameter identifi-03 p0320 N68-12029

Signal representation and analysis - properties of non-Gaussian continuous parameter random processes used in detection theory [AD-661211] 03 p0320 N68-12055

Transient development of hose instability of tickled (UCID-151271 04 p0554 N68-13639

Optimum representation of signal with limited spectrum truncated by Kotelnikov series [NASA-CR-92569] 06 p0798 N68-15370

Delay distortion and signal impairment in digital data transmission rates through communication channels [P-3723] 06 p0798 N68-15554

Numerical error analysis for approximated band limited signals, and Hankel transforms 07 p0979 N68-16991

Small signal characteristics of diode stabilized linear integrated devices [NASA-CR-92834] 07 p0975 N68-17009

Small signal power and momentum theorems for magnetoelastic ferromagnet [AFCRL-67-0664] 09 p1380 N68-18414

Electric filters for analyzing spectral speech characteristics for voice data processing 09 p1304 N68-18803

Application of digital inverse filters to signal restora-09 p1305 N68-19255

Statistical correlation techniques for smoothing Fourier amplitude spectra in seismographic signal Processing INVO-1163-861 10 p1518 N68-19512

IVO-1163-603 Wideband random signal radar system 11 p1660 N68-20793

Prediction of band-limited signals
11 p1660 N68-20856

Dynamic calibration of accelerometer by impulse sciter and Fourier integral transformation of signals 14 p2262 N68-25565

Experimental determination of pulse code modula-in signal to noise ratio, and methods of signal analysis r pulse code modulation analog data 15 p2422 N68-25784

Correlation on type radio frequency interferometer 16 p2624 N68-27819 Analysis of orthogonal transless and noisy feedback link mitter signals for noise-

17 p2849 N68-28701 lonized gas discharge column and ion acoustic waves, electron drift wave and mobility, signal analysis of column instability

bility [SU-IPR-226] 17 p2949 N68-29017 Ionospheric prediction charts for tentatively forecasting very low frequency signal intensity in satel-17 m2851 N68-29091

Laboratory methodology of signal analysis with ap-plication to Apollo program [NASA-TM-X-1599] 18 p3041 N68-30240 Rapid reduction method of rhythm and rate informa-tion in large scale electrocardiogram monitoring [NASA-TN-D-4751] 19 p3218 N68-32100

Numerical and automatic devices for analyzing ignal data for subsequent processing in general pur-21 p3729 N68-33613

Signal analysis and weighing functions applied to am-plitude distribution in Rayleigh scattering channels 21 p3660 N68-34333

Statistical procedure for estimating intrinsic dimensionality and parameter identification in signal analysis 22 p383 N68-34820

Inherent statistical problems in deriving amplifying signals from semiconductor radiation detectors 22 p3915 N68-35119

Measurement of electrical noise - basic requirements of noise analysis and noise reduction tion 22 p3916 N68-35130

Identification method for transfer function of linear retardless system based on inversion of transmittance Z	Fourier series of recording process white Gaussian no
[CEA-R-3508] 23 p4038 N68-37131	[NASA-CR-92576
Sequential estimation analysis of signal in noise with almost periodic arrival times 24 p4222 N68-37574	Pulse height and sounding rocket fli [NASA-CR-92683
Optimum receiver method for estimating phase dif-	Likelihood ratio
Optimum receiver method for estimating phase dif- ferences between stochastic narrowband signals 24 p4223 N68-37640	ditive non-white no
Numerical analysis of correlation functions of two neutron detectors located in nuclear reactor [SC-T-68-1532] 24 p4294 N68-37737	Improved dete presented with 180 [DRET-TN-676]
[SC-T-68-1532] 24 p4294 N68-37737	[DRET-TN-676]
Processing of pulse code modulated satellite telemetry data [DLR-FB-68-54] 24 p4226 N68-37987	Bibliography of psychophysics [AD-663906]
[DLR-FB-68-54] 24 p4226 N68-37987 SIGNAL ANALYZERS	Adaptive detecti [NASA-CR-69933
Design of analog digital converter for electrical pulse spectra	
[SGAE-E-8/1967] 01 p0045 N68-10764 Pulse division circuit for use with position sensitive	Operating and VHF omnirange sy [RD-67-58, V. 3]
detectors of particles [BMWF-FBK-67-61] 01 p0066 N68-10791	Signal detection
On-line distribution analyzer and fade counter for	[CM-R13-4.4]
time varying signals [ITSA-33] 03 p0341 N68-11946	Electron param paramagnetic samp NASA-TN-D-446
Multichannel pulse analyzer [FTD-MT-67-04] 03 p0342 N68-12266	Frequency and
Secondary signal control impulses, electrical reac-	periodic signals in ([S-68-1019]
Secondary signal control impulses, electrical reac- tions, and sensitivity of analyzers in relation to control factors and higher nervous systems in man [NASA-TT-F-11432] 05 p0616 N68-14985	Atmospheric n
Operations manual for data control between switching elements of global telegraph system autodyne	Atmospheric na signals, and perfo log-correlator rece
Committee Secretary Committee Commit	Discrimination b
[DCA-370-D175-1] 06 p0800 N68-15682 Capabilities and applications of thirty-band data	Discrimination b explosions based or gle station - analysi
analysis system [USL-845] 07 p0971 N68-16884	tral ratio [TN-1968-8]
Electrical and mechanical design concepts, and per- formance specifications for expanded scale ac voltage	Intersensory int
monitor [NASA-CR-65982] 09 p1340 N68-18517	A CONTRACTOR AND SERVICE AS A S
EMSE123 phase sensitive demodulator development	Detection of mor ral noise correlation
[NASA-CR-65984] 09 p1314 N68-18518	Nonparametric d
Feasibility of signal processor with phase isolator for adaptive antenna array	changes in accomp
[NASA-CR-86038] 09 p1304 N68-19069	Simultaneous pro lence using microw
Polared spectrum analyzer calibration [NAVAIR-17-20GW-07] 10 p1528 N68-19562	
Automatic noise whitener for signal processing systems based on white noise [NOLTR-67-197] 11 p1659 N68-20657	Effect of signal of continuous noise [NASA-CR-94734
[NOLTR-67-197] 11 p1659 N68-20657 Signal conditioning methods and equipment used for	Detection perfor tory stimulus
Signal conditioning methods and equipment used for inflight recording of pilot biomedical data [NASA-TN-D-4487] 11 p1641 N68-21538	tory stimulus
Transformation method for correlation function measurements on analog signals into binary signals [REPT1] 12 p1852 N68-22091	Changes in unde detection of sinusoi
[REPT1] 12 p1852 N68-22091	masking
Development and performance of signal averaging apparatus for noisy repetitive waveforms	Structural theory code signals and rel
12 p1872 N68-22110 Molecular beam Stark effect resonance spectra for	code ugnals and rel
salts of istopic sodium, chlorine and bromine [UCRL-17916] 12 p1932 N68-22631	Noise subtractive
Noise detection in narrow hand signal through cor-	[G3681.02.05A]
relation function between signal and masker 13 p2026 N68-23472	Psychophysical e in detection of audi
Polarization follower system for recording Faraday rotation of satellite beacon signals	Optimization of
17 p2879 N68-29095 Analog probability switches using ferrielectric trans-	structures with pul- unknown
polarizers [NASA-CR-86087] 19 p3252 N68-31241	Proposed low sign
Modified matched filter design for signal recognition and discrimination	[AERE-M-2025]
[RM-422] 21 p3658 N68-34048	Octical commun
Low frequency simulation of transmitter for frequency shift keying waves [RR-68-2] 22 p3832 N68-35106	tection of M-ary P additive Poisson no [NASA-TN-D-4623
Test instruments and methods - noise generator and	Statistical detecti
spectrum analyzer for measuring system random noise and impulse noise signals	design and processing
22 p3874 N68-35131	Quantum general weapons
Pulse height analyzer, imaging astronomical photometer, and secondary electron conduction vidicon for space application	(FTD-HT-23-809-6 Statistical decision
23 p4066 N68-37413 SIGNAL DETECTION	Statistical decision timum radar receive white points
NT CORRELATION DETECTION	white noise [FTD-HT-67-243]
Statistical tests for signal detection and correlation	Self bit synchroni

Statistical tests for signal detection and correlation coefficients [NASA-TR-R-273] 02 p0193 N68-11789

02 p0193 N68-11789

SIGNAL ENCODING Fourier series digital computer simulation of tape ecording process - signal detection in prescence of white Gaussian noise NASA-CR-92576] 06 p0807 N68-15347 Efficiency of nonparastochastic signal in noise netric tests in detection of 19 p3236 N68-30937 ONERA infrared detector test is 19 p3278 N68-31538 Pulse height and pulse sounding rocket flight of di NASA-CR-92683 data telemetered from onal neutron detector 07 p1086 N68-16913 until reception of signals that depend non (FTD-HT-23-518-67) Likelihood ratio analysis for detecting signals in ad-19 p3241 N68-31567 Detection of randomly disturbed signals of unknown priori probabilities 07 p0966 N68-16985 Improved detectability presented with [80 degree in [DRET-TN-676] sinusoidal signals tural phase difference 07 p1038 N68-17092 22 p3832 N68-35016 Theory of signal detecta composite hypothesis situal [TR-192] - extension to double detection theory and liography on sign 22 p3835 N68-35379 Error probabilities for um signal detection in 08 pl136 N68-17876 presence of Poisson in NASA-TN-D-47211 Adaptive detection NASA-CR-69933] aronous signals 09 p1304 N68-18953 23 p4017 N68-36105 Ambiguous visual signal detection during image perandbook on precision itoring radiated signals 09 p1305 N68-19297 Operating and installa /HF omnirange system for RD-67-58, V. 3] [AFOSR-68-1622] 23 p4002 N68-36400 detection in maximum time varying channels 24 p4273 N68-37464 Statistical tests for sig likelihood decision system er waves frequency CM-R13-4.41 10 p1507 N68-20444 SIGNAL DETECTORS onance signals from we bridge 11 p1698 N68-21169 Electron para Output probability di envelope detector [SC-R-67-1185] tion tables for quantizing aramagnetic sample NASA-TN-D-4469) 05 p0639 N68-14316 Frequency and time periodic signals in noise \$-68-1019] analysis to estimate Fast response time i ductive detectors 11 p1662 N68-21523 18 p3045 N68-29914 INASA-CR-860691 for detecting known functions applied to am-cattering channels 21 p3660 N68-34333 Signal analysis and weighin itude distribution in Rayleig 12 p1843 N68-22078 SIGNAL DISTORTION rimination between some ions based on short perimeasurements to obtain propaga-ting path role in intermodulation xplosions based on short le station - analysis of wa ral ratio TN-1968-8] Noise-power-ratio m on data for evaluating distortion of tropospheric scat (ESSA-TR-IER-41-ITSA-41) 13 p2056 N68-23093 d vigilance in bimodal 06 p0797 N68-15300 Intersensory interaction as onredundant signal detection maximum likelihood ulse frequency modula 13 p2004 N68-23385 Detection of monaural signals as function of incise correlation and signal frequency 13 p2004 N68-23389 [NASA-TN-D-4294] 09 p1302 N68-18542 ortions produced by Rader signal spec lume and surface di parametric detection of signals causing arbitrary es in accompanying noise backgrounds 11 p1661 N68-21428 13 p2027 N68-23628 nal distortion with ap-ric dispersion 11 p1663 N68-21581 Simultaneous probing of high altitude clear air turbu-nce using microwave radars and aircraft. 13 p2101 N68-23935 MTR-4441 Method of comp pulsed signals [NASA-CR-94602] upheric distortion of Effect of signal duration on detection for gated and 13 p2027 N68-23610 ontinuous noise NASA-CR-947341 14 p2221 N68-24671 Eliminating Doppler of with using repetitive wavel [NRL-6651] inge ambiguities related is in radar 13 p2028 N68-23916 Detection performance and two parameters of audi-ory stimulus 15 p2400 N68-25863 Relation between frequency stability, harmonic distortion, and excess gain for oscillators in feedback networks [SC-TM-67-3011] 14 p2230 N68-25053 Changes in underlying distribution functions during stection of sinusoidal signals in presence of pure sone asking 15 p2424 N68-25955 gh impact effects on sutput signal 14 p2262 N68-25566 Bidirectional shock iezoelectric shock trai ructural theory developed for perception of Morse signals and related rhythmic patterns 15 p2424 N68-25981 Effects of fixture stress celerometer signal nted acation on mou Noise subtractive threshold detector for radio recep-14 p2262 N68-25567 G3681.02.05A] 15 p2468 N68-26456 Psychophysical experiment detection of auditory signals man response rate [AFCRL-67-05791 15 p2425 N68-26199 16 p2596 N68-27188 of variable corrector for clor television signal 18 p3037 N66-30525 Optimization of mixture resolving signal processing ructures with pulse waveform and noise parameters Inverse filtering altered by low pass (G3681.21.01D) 16 p2623 N68-27665 Proposed low signal radio sternal avalanche multiplic AERE-M-2025] on detector incorporating Rate distortion fia and proving of corre [NASA-CR-96200] ed for class of sources. 16 p2666 N68-28296 ding theorem 20 p3434 N68-32351 maximum likelihood de-cernes in background of Optical communication of M-ary Po Construction, test teristics of H-01 wave and transmission characteristics formed by dielectri iditive Poisson nois (ASA-TN-D-4623) 17 p2855 N68-29528 atistical detection theory applied to adaptive signal en and processing for active sonar system 18 p3034 N68-29860 20 p3450 N68-32533 Effect of linear ph e detector on acquisit and FM threshold INASA-CR-971411 m generator light beams as detectors and as 23 p4035 N68-36139 TD-HT-23-809-67] 18 p3083 N68-30106 ations of inf theory to radio frequen Statistical decision theor num radar receiver for si [FTD-MT-24-251-67] ry applied to finding op-signal detection in random 24 p4229 N68-38316

SIGNAL ENCODING Option system fon pr

m fran

18 p3037 N68-30440

oction of anticorrelated nication systems 18 p3038 N68-30529

Self bit synchronizers for binary systems of digital cor [NASA-CR-95890]

nization for coded commu-rties of arithmetic norms in

03 a0322 N68-12324

p

1

1

Pal

to

17

F

Processing, and transmission of convolutional infor-mation codes 04 m0479 N68-13472

egal evidence treated as coded information signal handled by cybernetic methods 05 p0759 N68-14383

ression signals of noncyclic binary codes 05 p0631 N68-14758 [JPRS-44088]

Multichannel airborne coding converter for auto-tatic processing of signals from transducers sensing ulsation meteorological parameters FTD-HT-67-245) 05 p0632 N68-14994

Construction of optimal ergodic codes 07 p0967 N68-16986

Performance evaluation of several convolutional and ock codes with threshold decoding for space [NASA-TN-D-4402] 08 p1150 N68-18178

Modulo acquisition of ambiguity resolving tracking [NASA-TM-X-63167] 12 p1842 N68-21921

Frequency coded threshold logic unit for pattern recognition systems based on central nervous system [NASA-CR-1035] 12 p1828 N68-22448

Rate distortion function defin and for class of sources. and proving of corresponding co [NASA-CR-96200] ding theorem 20 p3434 N68-32351

Contactless code-pulse telemetry equipment [FTD-HT-23-765-67] 20 p3434 N68-32353

Hamming information coding methods for improving magnetic storage device reliability 20 p3446 N68-33488

Experimental study of channel spacing and transmission speed in voice frequency radio telegraphy systems [TRANS-2383] 22 p3834 N68-35238

Design, manufacture, and type qualification testing programmable premodulation filters for NRZ pulse [NASA-CR-92346] 24 p4225 N66-37833

SIGNAL FADING NT SELECTIVE FADING

Time lag in occurrence of Q-T point on Faraday rotation records at widely spaced frequencies [RPU-S-38] 07 p0963 N68-16659

Performance prediction, and error analysis for digital signal transmission over fading dispersive channel [NASA-CR-93249] 08 pl 148 N68-17885

Statistical analysis of antenna fading patterns for mospheric drift, and ionospheric structure determina-[IIB-20]

08 p1175 N68-18205 Signal distribution model for stationary radio mul-

tipath conditions [IER-44-ITSA-44] 10 p1501 N68-20399 Determination of ionospheric drift from three-receiver fading records - instruction manual 10 0 Nns-20525

Quantitative analysis on radio wave scattering in disturbed auroral ionosphere [NASA-CR-94552] 13 p2060 N68-23571

Short wave fading and microwave radio burst activity istribution in solar hemispheres

13 p2146 N68-23692

Performance degradation of VHF radio frequency satellite-to-aircraft communication links resulting from multipath propagation fade effects [NA-68-16] 15 p2425 N68-26174

Mathematical model for propagation reliability of microwave signals as function of path length, fade margin, and geographical location 16 p2624 N68-27734

Correlation method for evaluating ionompheric propagation from extraterrestrial signal fading records [T-R-607] 16 p2657 N68-27907

Response of frequency modulation discriminator to frequency modulated signal in randomly fading chan-

18 p3036 N68-30243 High frequency signal fading correlation for iono-theric propagation

19 p3235 N68-30908 Signal analysis and weighing functions applied to am-itude distribution in Rayleigh scattering channels

21 p3660 N68-34333 Ringing irregularity in ionosy [AFCRL-68-0263] 22 p3872 N68-35778

Radar reflectivity from solar corona and effect of fluctuations in returned signal due to time varying reflectivity of corona and Faradays fading 24 p4338 N68-37460

SIGNAL FLOW GRAPHS

Algorithm for calculation of system transfer func-tions from mason signal flowgraph system description [NASA-CR-95760] 17 p2865 N68-29177

Algorithm for comp ation of linear network hy topological flow t [NASA-CR-95771] 17 p2866 N68-29387 Transfer function app to sensitivity analysis by

digital computers [NASA-TM-X-61193] 21 p3674 N68-34423 Feedback system concepts [WAPD-TM-724] 21 p3675 N68-34636

SIGNAL GENERATORS

NT FREQUENCY SYNTHESIZERS NT FUNCTION GENERATORS

Electronic interaction with optical resonators in-vestigated for microwave generation and amplification [REPT.-341-Q] 01 p0038 N68-10584

Variable symbol waveform generator for driving signals for cathode ray tube displays [RAE-TR-67128] 02 p0183 N68-11062

Design, and performance of wideband FM genera-07 p0966 N68-16979

Design, and performance of solid state frequency odulated microwave scanner with crystal controlled (AD-664175) 09 p1301 N68-18349

Precision VHF omnirange digital signal generator (RD-67-58, V. 2) 09 p1305 N68-19298 Technical manual on calibrating radio test set AN-

[NAVAIR-17-20VQ-03] 09 p1346 N68-19468 Calibration procedure for sign [NAVAIR-17-20GA-11] al source attenuators 10 p1527 N68-19510

Calibration procedure for microwave signal source [NAVAIR-17-20GG-26] 10 p1527 N68-19533

Generator with step function for timing signal delays [EIR-130] 14 p2254 N68-24593 Atomic clocks and statistics of precision signal generators 17 p2882 N68-28477

Programmable ramp generator packaged in standard hardware program size module [NAFI-TR-1209] 20 p3451 N68-32911

SIGNAL MEASUREMENT

Echo 2 communication experiments summary and data processing resul [NASA-CR-89620] 01 p0029 N68-10362 System for measuring first itude probability densities of erwater acoustics first and second order am-es of signals and noise in un-

02 p0239 N68-11092 INRL-65221 (Nut-transform or Mathematical properties of Fourier transform or logarithm for signal amplitude spectrum 04 p0479 N68-13471

Signal attenuation and anter measurements of microwa-through hypervelocity air plass [SC-CR-67-2710] na reflection coefficient signals transmitted 05 p0630 N68-14503

Antenna decouple ng measurements on ELDO launch vehicle scale mode (ELDO-RFI-GA)

10 p1499 N68-20123 Radio frequency interference measurements on elec-trical mockup system for ELDO launch vehicle as-(ELDO-RFI-3) 10 p1499 N68-20191

Radio frequency interference analysis for ELDO unch vehicle configuration (ELDO-RFI-4) 10 p1499 N68-20193

ELDO-RP1-4]
Optimum quantizing in hybrid computation
13 p2094 N68-23626 13 p2094 N68-23626 pulsed laser beams in contaminated air [BRL-MR-1895]

Whitman equations for calculating relation between peak values of pressure and signal duration in sonic booms

19 p3197 N68-30873

Engineering design of transponder system for phase measurement of very low frequency signals [NASA-CR-61922] 19 p3238 N68-31296 SIGNAL MIXING

Transistorized Rossi oscillators and mixers [UCRL-13304] 01 p0039 ? 01 p0039 N68-10718 Pulse division circuit for analyzing two input signals om radiation counters [ANL-TRANS-622]

21 p3695 N68-34731

SIGNAL PROCESSING

Recording and processing of lunar reflected signals or studying ionospheric electron density 02 p0204 N68-11186

ess correlation 02 p0239 N68-11209 [USL-842]

Equation for determ crete measurement in any freq analytic expression of correspon [FTD-MT-65-326] 03 p0321 N68-12197

res for measurement and spectrometric interfering (LYCEN-6716) 03 p0391 N68-12482

Design, and development of satellite communica-ons ground terminals on moving vehicle - vocoders or speech compression, signal modulation, and automs ground ... ESD-TR-67-182] 04 p0476 N68-13209

Design, and development of transportable ground reminal for space communication technology 04 p0476 N68-13210

litary signal processing 04 p0477 N68-13211

Diversity receiver carrier frequency reproduction-method for providing Doppler extractor with frequency and phase information similar to received signal [NASA-TM-X-63069] 04 p0480 N68-13879

Signal processing for high resolution pulse amplitude BNL-117941 05 p0660 N68-14210 Analog to digital converter for low level input signals

06 p0806 N68-15298 (FTD-HT-67-44) Elastic surface transformation for processing and dis-playing passive sonar and photographic information [TM-775-1] 06 p0845 N68-15567

Extension of expres

sions for probability distribution offiguration output 06 p0799 N68-15599 of signal processing configurati [IDA/HQ-67-6496] Microwave signal proc [LU/EE/67/12] ng device synthesis 06 p0799 N68-15632

Extraction of wanted single colors from multicolor maps by separating optical signals into color channels which were converted to electronic signals for FTR-60311 06 p0820 N68-15689

Mathematical model for Apollo video signal processing in low signal to noise ratio environments [NASA-CR-93149] 07 p0962 N68-16508

Sequential detection, and control for feedback com-07 p0965 N68-16976

Construction of optimal ergodic codes 07 p0967 N68-16986

Signal processing experiments on long period data obtained by large aperture seismic array [TN-1967-50] 08 pl 169 N68-17769

Resolution limit analysis for pulse frequency modulation telemetry processing line [NASA-TN-D-4180] 08 p1151 N68-18247

Numerical integration of band-limited signals, with applications to computer implemented signal MTR-4731

09 p1301 N68-18321 Design, performance, production, and testing of frequency to voltage converter [NASA-CR-65985] 09 p1315 N68-18617

Performance analysis of electric power, data link, signal processing, and flight control systems of Surveyor I spacecraft [NASA-CR-93491] 09 p1429 N68-18655

Feasibility of signal processor with phase isolator for [NASA-CR-86038] 09 p1304 N68-19069

Signal processing techniques for range and range rate measurements in airborne range and orbit determination [NASA-CR-61670] 10 p1495 N68-19632

Signal processing techniques for airborne range and orbit determination system, and direction finding system analysis [NASA-CR-61668] 10 p1496 N68-19826

Time code techniques in signal processing and con-ol applications ISL-8461 10 p1500 N68-20232 [USL-846] 10 p1500 N68-20232 Signal processing in radio altimeter using random angle modulation

10 p1500 N68-20311

SUBJECT INDEX onses, including chro-nonaural phenomena, and other psychophysiological d [NASA-CR-93854] 10 p1477 N68-20369 for signal processing INOLTR-67-197 11 p1659 N68-20657 nar using broadband sound ig of target echo returns to Model tests of picto ojection and data po projection and de form high resolut [GJ-2510-1641] 13 p2030 N68-24198 Effects of interelement corre performance of receiving arrays lation and clipping on 14 p2223 N68-25112 Phase amplitude mand accuracy investiga [SAAB-TN-54] e radar, signal processing 15 p2423 N68-25804 Optimization of mixture resolving signal processing signal si Optimizatio 16 p2623 N68-27665 Iterative method for digital optimization of rthogonalized exponential signal representation al representation 16 p2624 N68-27885 On-line digital transferometer for handling white one problems arising from use of thermal neutron de-octor in pulsed regime tector in pulsed [CEA-R-3241] 16 p2665 N68-28291 Transformation, acc ltering with signal con ad telemetry systems accuracy conservation, and error conditioners in airborne recording 17 p2853 N68-29187 Thin lens model and Fourier methods in optical signal processing for radar applications
18 p3033 N68-29822 Statistical detection theory app design and processing for active s plied to adaptive signal sonar system onar system 18 p3034 N68-29860 Analytical methods for determining signal errors due to geometric deviations and nonlinearities in coherent optical data processors [NASA-CR-95803] 18 p3083 N68-30047 ng and analysis for negative Video signal proces color film television tra 18 p3077 N68-30553 Functional analysis of [TR-0158/3230-46/-7] 18 p3038 N68-30801

Optimum radar signal processing in clutter plus noise 19 p3236 N68-30974

Nonlinear preprocessing and cascading to improve scrimination capability of linear single gain learning (REPT,-9500-920089) 19 p3215 N68-31363 Demodulators for anal time varying, frequency ([NASA-CR-95951] munication over slowly e fading channels 19 p3239 N68-31417 Instrument sets, signal conditioners, and field sup-port and integration of instrumentation for OVI-13 satellite 19 p3277 N68-31467 Inverse filtering technique for raltered by low pass filter or tape re [G3681.21.01D] ique for restoring signal detail or tape recorder head 19 p3240 N68-31468

es for solving Fredholm in-n sonar array processing State variable techniq tegral equations used [AD-670557] 19 p3244 N68-31824 Correlator for analyzing correlation functions of oise and linear systems.

20 p3439 N68-33343

Real time multipoint correlation of correlation functions relator for automatic calcu-ons of acoustic signals 20 p3439 N68-33344 Signal to noise ratio enhancer nent in nuclear instru-

22 p3874 N68-35133 Signal processing in satellite radar altimeter model INASA-CR-97308] 24 p4291 N68-37734

Filtering techniques ropagating through ra s for recovery of signal after andom multipath medium 24 p4227 N68-38107 TR-241

SIGNAL RECEPTION

NT SYMBOLS

NT TELEVISION RECEPTION

AS-204 signal reception predictions for unified S-[NASA-TM-X-63006] 01 p0029 N68-10504

Phase demodulation of resolver output signals, and couracy of demodulator used for design of resolver/digital conv [NASA-CR-91503] 04 p0480 N68-13777

Compensating receiver filters for optimal digital communication over dispersive channels.
[ESD-TR-67-466] 10 p1497 N68-19981

(E-68-1) 15 p2422 N68-25794

Precision power meas signal with microwave no [NASA-CR-94921] nts of spacecraft CW 15 p2423 N68-25805 nd cylindrical segment strength 18 p3033 N68-29785 Influence of large plana round screens on vertical fi

on of signals that depend non-[FTD-HT-23-518-67] 19 p3241 N68-31567

Photographic record looking radar system ethod for signals of side 20 p3481 N68-33403

SIGNAL REFLECTION

Recording and processing of lunar reflected signals for studying ionospheric electron density [OPR-15]

e echoes analyzed on torial ionograms 08 p1173 N68-17983

on of moon-reflected signals rties and lunar surface 11 p1688 N68-20876 Reception and evaluati Contactless device for measuring speed of moving etal by transformation of reflected signals in random

RRE-TRANS-170] 12 p1873 N68-22379

ough surfaces 14 p2221 N68-24663 [NASA-CR-92134] Investigating Venus bi on reflected radar signal [NASA-CR-94770] ackscattering by Doppler effect 14 p2346 N68-25148

Spatial perception calculation in stereophonic systems [FTD-MT-67-73] ons for signal tran 15 p2511 N68-26596

Theoretical and experime lex signal reflections on a ental data on effects of com scoustic pressure spectra of

19 p3197 N68-30932 Measurement of wind in boun reflections from clear air compar and direction obtained by radio-pil [M-7394] pilot observations 22 p3873 N68-35973

Ionospheric echo absorption seteorological station in Gerr rement data from 23 p4060 N68-37361

SIGNAL STABILIZATION

Frequency-modulated oscillator operated by control loop subjected to variable capacity diode 01 p0036 N68-10062

Carbon dioxide laser for high frequency reference 07 p1005 N68-16943

Transmission channel equalizers, and surveys of studies on mathemati mechanics, and polymers in U.S.S.R. lizers, enzyme therapy, hematical pysics, applied

13 p2110 N68-24194

SIGNAL TO NOISE RATIOS

Investigation of signal to noise ratios and signal trans-ission efficiency for space communication systems NASA-CR-90095] 01 p0030 N68-10729 [NASA-CR-90095]

Time, band type, and bit rate noise effects on in oduction of error in pulse code modulation/ frequent modulation link (TM-61) 03 p0323 N68-12659

Signal to noise ratio analysis at outputs of three coherent phase detectors for radio noise threshold reduction study [NASA-CR-80890] 05 p0630 N68-14275

Jitter due to noise in [AERE-R-5561] 06 p0815 N68-15513

Improved detectabilit presented with 180 degree [DRET-TN-676] information at output of signals with noise 09 p1303 N68-18581 Algorithms for processing

Output effect of discrete signals and filters used in in-rmation transmission, processing, and storage

09 p1303 N68-18596 se ratio of photoelectric 09 p1320 N68-18807

ment with poor signs (NASA-CR-61594)

Signal to noise ratios in airborne range and orbit etermination system, and carrier and range loop performance analyses [NASA-CR-61667] 10 p1496 N68-19825

[AFFDL-TR-68-8] 10 p1531 N68-20454

in analysis to estimate 11 p1662 N68-21523

patial frequency filtering Pattern recognition by resulting in low false alarm [RAE-LIB-TRANS-1265]

11 p1665 N68-21815 hand signal through cor-al and masker 13 p2026 N68-23472 se detection in narrow b

signals causing arbitrary backgrounds 13 p2027 N68-23628

Analysis and instr sonance spectrosco 13 p2015 N68-23673

Effect of signal de letection for gated and

(NASA-CR-94734) 14 p2221 N68-24671

Experimental de on signal to noise of pulse code modul sethods of signal analys og data 15 p2422 N68-25784

Comparative testing of elect throat microphones for armored [IZF-1968-1] rodynamic and carbon vehicle intercom 15 p2423 N68-25814 ort of cro ed field space charge flow in

15 p2452 N68-26182

ion, photoelectricity, signal to noise neters related to Poisson process 15 p2426 N68-26231

[REPT.-6400-153-T] 15 p2427 N68-26316

ntegration time reliability of Construction and lo 3.3 mm radiometer [TR-0158/3230-46/-13] 15 n2471 N68-26938

Signal to noise ratios and fr tory frequency discrimination ency effects on audi

humans 16 n2603 N68-27222

Optimization of mixture resolving signal processing structures with pulse waveform and noise parameters soknown 16 p2623 N68-27665

oplied to adaptive signal sonar system 18 p3034 N68-29860

Signal to noise ratio used in math radio receiver for use in interference netic compatibil [ECOM-2924] ity eva 18 p3037 N68-30416

Optimum radar signal processing in clutter plus no

19 p3236 N68-30974

te, and performance of metry 19 p3245 N68-32117 Block diagram, operating m ise frequency modulation to

of lateral signal percep

tion against con [IZF-1968-13] g noise 20 p3435 N68-32410 Computer progra monopulse excitation [AFCRL-68-0254] line source aperture 20 p3436 N68-32512

21 p3657 N68-33967 nating intrinsic dimen-ation in signal analysis 22 p3831 N68-34820

Detection of rando riori probabilities sturbed signals of unkn

22 p3832 N68-35016 Signal to noise enhancer performance of communi-detection using matched file

22 p3833 N68-35132 nent in nuclear instru

Signal to noise ratio enha 22 p3874 N68-35133

Causes and methods for improving signal to noise characteristics of reflector antennas [BMWF-FB-W-68-49] 22 p3838 N68-35710

ILY dete IAE G LUC

coel mici dam [NA

and icon [NA

H

(CE

Pr anal [NA

(NA

meti snai [AF

LY

Fi

O

Q

So

NA

C

prod

R

Ra

NC

Di of th

(NA

Sp

transicon (CO

INA!

SUB

Direct current biased photoconductive detectors for reception of wideband curbon dioxide laser signals [NASA-TM-X-63336] 23 p4146 N68-36032 Construction and equalization of multichannel itera-tive networks regarding reference input variables 23 p4036 N68-36441

in analysis of signal in noise with Sequential estimation un-most periodic arrival times

24 p4222 N68-37574

24 p4222 N68-37574

SIGNAL TRANSMISSION

NT AUTOMATIC PICTURE TRANSMISSION

NT BIOTELEMETRY

NT DATA TRANSMISSION

NT IONOSPHERIC PROPAGATION

NT IONOSPHERIC PROPAGATION

NT MICROWAVE ATTENUATION

NT MICROWAVE ATTENUATION

NT MULTIPATH TRANSMISSION

NT MULTIPATH TRANSMISSION

NT PLASE REQUENCY MODULATION

NT PULSE FREQUENCY MODULATION

PULSE. FREQUENCY MODULATION

TELEMETRY
RADAR ATTENUATION
RADAR TRANSMISSION NT RADIO ATTENUATION RADIO TELEMETRY

RADIO TELEMETRY
RADIO TRANSMISSION
SATELLITE TRANSMISSION
SHORT WAVE RADIO TRANSMISSION
SINGLE SIDEBAND TRANSMISSION NT NT

NT SYMBOLS

NT

NT TELEMETRY
NT TELEVISION TRANSMISSION
NT TRANSEQUATORIAL PROPAGATION

Digital smoothing algorithm for discrete random gnals - transmission delay of smoothed input signal 01 p0043 N68-10324

Microwave interferometer for broadband measure-ment of complex transmission coefficients over X band [IPP-3/61] 05 p0665 N68-14909

coretical, and experimental studies on frequency locked loop outputs

07 p0966 N68-16981

Performance optimization for transmitted reference and signal channel phase shift keying systems 07 p0966 N68-16984 Performance prediction, and error analysis for digital signal transmission over fading dispersive channel [NASA-CR-93249] 08 pl 148 N68-17885

isolation amplifier circuits and signal voltage coupling between two differing common-mode poten-tials (EP-RR-13) 09 p1315 N68-18598

ionospheric effects on telemetry and tracking signals from orbiting spacecraft [NASA-TM-X-63152] 10 p1497 N68-20043

Sequential signal design for communication and radar equipment based on amplitude modulation policy

12 p1843 N68-22049

Transmission of finite number of parameters over channel with Gaussian noise

16 p2618 N68-27057 Signal transmission in linear or nonlinear systems with and without feedback related to radio engineering, electronics, and automation [FTD-HT-67-191] 18 p3036 N68-30363

Statistical distribution [TR-0158/3230-46/-12] m of log-normal variate nums

18 p3108 N68-30837 Human reactions to acoustic signal transmission to

19 p3207 N68-30948 Design and solutions of transmitter filter for improved analog voice communication [AFCRL-68-0227] 20 p3436 N68-32489

Stability of force reflecting servomechanisms with gnal transmission time delay

21 p3656 N68-33711 Ternary codes for regenerative digital transmission

21 p3656 N68-33781 Low frequency simulation of transmitter for frequening waves [RR-68-2] 22 p3832 N68-35106

Phase lock demodulator system for frequency modulated signals with noise 23 p4022 N68-36981

Binary integration method for optimum threshold ar testing procedures 24 p4229 N68-38330 (NELC-1550)

SIGNATURES

NT MAGNETIC SIGNATURES

NT RADAR SIGNATURES

Sonic boom flight research - effects of aircraft opera-tions and atmosphere on sonic boom signatures oom signatures 11 p1624 N68-21416

Design of bodies to produce specified sonic boom ingnatures [NASA-TN-D-4704] 19 p3194 N68-31484

Test data evaluation and prediction method for hypersonic boom signatures 22 p3802 N68-34910

SIGNIFICANCE

Basic algorithm described for finding statistical significant relatio [R67ELS-46] anships 14 p2280 N68-24464

SIGNS [SYMBOLS]

SIGNS AND SYMPTOMS NT VERTIGO

Human psychological reactions and later psychotic nd psychosomatic effects of confinement in prisoner of war and concentration camps [NASA-TT-F-11787] 17 p2820 N68-28564

U CH- 53 HELICOPTER

SIKORSKY MILITARY HELICOPTERS U MILITARY HELICOPTERS

SIKORSKY S-65 HELICOPTER

NT CHLOROSILANES

Silane coupling agents used as primers, and additives ir polyurethane bonding for polyurethane bondii [NASA-TM-X-53676] 04 p0526 N68-13510

Research in synthesis and characterization of highly arylated organosilicon compounds [ARL-67-0159] 07 p0958 N68-16718

Wettability of ethyltriethoxysilane and vinyltriethox-ilane films formed at organic liquid silica interfaces NRL-6644] 08 p1190 N68-17677

Measurements of proton spin-lattice relaxation time in liquid silane and partially deuterated liquid silane [INP-583/PL] 18 p3138 N68-30775

SILENCERS

Installation of noise suppressors in steel plant air intake supply system [TN-6704.288] 02 p0195 N68-11778 Longitudinal tubes, retractable silencers, and central blast pipes for reducing jet noise of Concorde super-sonic transport [INC/C1/P17] 14 p2188 N68-25599

Jet aircraft noise reduction problems, and proposed engine designs and silencers for noise suppression 19 p3197 N68-30949

BILICA U SILICON DIOXIDE

SILICA GLASS

Electron spin resonance spectra of gadolinium ions soda silica glasses [IS-T-203] 08 p1221 N68-17280 Poisson ratio of simple alkali silicate glasses
11 p1717 N68-20788

lonic tramport in silica glass reviewed to aid un-derstanding of ion motion in amorphous oxides [REPT.-67-C-219] 13 p2089 N68-23806

Step scanning device and molybdenum rotating node for small angle X ray study of radiation damage [COO-1255-5] 16 p2732 N68-28183

Transient radiation effects on transmission loss and reflectance in optical glasses and quartz [LA-DC-8636] 17 p2952 N68-28358

Absorption spectra of rare earth ions in silica glass [FTD-HT-67-220] 18 p3029 N68-30538 SILICATES

ALUMINUM SILICATES
ARAGONITE NT

CALCIUM SILICATES ENSTATITE

FLUOROSILICATES

NT GARNETS PYROXENES SODIUM SILICATES TALC

YTTRIUM-ALUMINUM GARNET YTTRIUM-IRON GARNET

RIUM-IRON Granific fluid sic stable hydraulic fluid 92 p0224 N68-11413 X ray diffraction analyses on shock compressed sil-ates, and mixtures of iron-tungsten and tungsten-car-04 p0523 N68-13800 Heat transfer, and dielectric constants meas in evacuated silicate powders [NASA-CR-61495] 06 p0895 N 06 p0895 N68-15849

Early reactions of alkaline-earth orthosilicates with (PB-176171) 07 p0958 N68-16745

Adhesion of ultrahigh vacuum cleaved silicates in contact with metal surfaces, and ultrahigh vacuum system for measuring electrostatic charging during cleavage [NASA-CR-92689] 07 p0982 N68-16826

Two phase halide-allicate technique for extracting tungstic oxide from scheelite and wolframite [BM-RI-7106] 10 p1479 N68-19544

thavior of silicates 12 p1896 N68-22843 Ultrahigh vacuum [NASA-CR-94425] Reaction kinetics in solid state formation of zinc orthosilicate

14 p2213 N68-24694 Graphical and tabulated data on glass formation Graphical and tabusers ranges of ternary silicate systems 15 p2487 N68-26020

Silicate rocks as simulators for study of genetic states of lunar surface rocks [NASA-CR-1081]

15 p2561 N68-26689 Emission spectra of moon and silicates in vacuum at low temperature

16 p2767 N68-27672 Silicate surface preparation to represent lunar soil, and ultrahigh vacuum adhesion measurements [NASA-CR-1090] 17 p2965 N68-28373

Effects of silica in autoclave water on steam corrosion of Zircaloy [KAPL-M-6748] 19 p3290 N68-30985

stometry for beryllium 19 p3223 N68-31109 INIM-1381

Microscopic analyses of chondrite structures, and correlation between metallic iron and iron oxide con-tent of silicates in chondrites 19 p3370 N68-32062

Activation energy and bond structure of alkaline earth metal orthosilicate hydrates 22 p3820 N68-34935

SILICIDES

Protective coating parameters for improving oxid-on resistance and reliability of silicide coating system for tantalum alloys [NASA-CR-72358] 10 p1538 N68-19623

Hydrolysis products of rare earth silicide 10 p1489 N68-20112

Effects of silicide coatings on oxidation behavior of

[NASA-CR-94582] · 13 p2082 N68-23469 Tungsten and molybdenum alloy silicide alurry applied and vacuum sintered on tantalum and niobium alloys for protection from oxidation [NASA-CR-87765] 15 p2479 N68-25722

Rare-earth silicide additions to alloy steel for increasing toughness and ductility [BM-RI-7153] 15 p2480 N68-25750

SILICON

Techniques for, and applications of preferent etching of crystal surfaces to produce optical refle-tions for crystal orientation and optical alignment in si-con crystals. icon erystals [NASA-TN-D-4187] 01 p0098 N68-10354

High resolution surface shielding silicon detector based on alpha and beta spectrometry [RT/EL/67/1] 02 p0211 N68-11301

Gamma ray spectra from radiative capture of fast neutrons by silicon and calcium [NIJS-R-505] 03 p0387 N68-12170 rements of p and n type silicon and

Hall effect measuremen 03 p0405 N68-12223

Thermal conductivity Seebock coefficient, and electrical resistivity of heavily phosphorus doped silicon from 313 deg K to 673 deg K [TR-23] 03 p0406 N68-12240 Design and development of silicon solar cell panel or operating in thermal-annealing cycles

for operating in them [NASA-CR-91390] ng cycles 04 p0449 N68-13101

Ellipsometric measurements on refraction index of single silicon crystal with surface film [NASA-CR-91509] 04 p0474 N68-13798

Development and testing of silicon solar cells with 05 p0606 N68-14031

Nuclear structure, reactions, and energy levels of phosphorus 31, carbon 14, silicon 30, lithium 6, alu-minum 27, and sulfur 32 [COO-1120-68] 05 p0715 N68-14586

Y

ts

th

15

æ

4

c

Ô

tion curves, and angul transition tin-allicon ments for transition 05 p0718 N68-14729 Application of sealed tube neutron generator to determination of copper and silicon in aluminum alloys [AERE-R-5616] 06 p0821 N68-15152 Germanium junctic low noise amplificatio [UCRL-17818] n field effect transistor device for 07 p0973 N68-16260 diction from absorption velengths from 0.5 to 1 ping levels and crystal Solar cell performance coefficients of silicon in [NASA-CR-93154] 07 p1066 N68-16510 ce of irradiated silicon action in degenerate sild hole-optical ph [NASA-CR-93151] 08 p1222 N68-17349 High-resolution lith um detectors for mess tions in low-Z pionic s [NASA-CR-93178] rifted silicon and germani line widths of 2p-1s transi 08 p1213 N68-17618 Radiation effects ((CERTS-NT-02-1) miconductors 08 p1223 N68-17649 Point measuring analyses on silicon sl [NASA-CR-86032] d for precise resistance 08 p1228 N68-18067 nization equilibria for iron, neon, oxygen, and sil-[NASA-CR-93358] 08 p1221 N68-18121 nfrared detection for aircr fit rules, and xenon dischar detector as simple pilot w craft tracking under visual sarge light with diffused sil-warning indicator ning indicator 08 pl116 N68-18233 Electrical measuremen methods for radiation da snalysis in silicon and laser [AFCRL-67-0596] and nuclear activati 09 p1406 N68-18424 Tunneling between metal and ailicon separated by polymer insulator and model of insulator current voltage characteristics. 09 p1407 N68-18525 Behavior of silicon single crystals and surface barrier inctions under fast neutron irradiation LYCEN-6756) 09 p1407 N68-18608 Energy loss of protons in Be, Al, Si, lucite, supphire, 09 p1410 N68-19194 Fabrication of three flat p ste sections for silicon ic generator 10 p1459 N68-19707 permanium solar the NASA-CR-72386] Organolithium reagen symmetric silicon - form and stereochemistry of and cleavage reactions 10 p1493 N68-20496 rum analysis of iron, aluminum, and silico [JEN-185-DQ/I-62] 11 p1643 N68-20594 Solar proton flare effects on silicon photovoltaic power system for deep space missions [NASA-CR-93922] 11 p1627 N68-20944 Chemical vapor depositic onto single crystals of silico producing high temperature tronic devices [NASA-CR-86043] aluminum phosphides ad gallium arsenide for 11 p1771 N68-21026 alysis of high-purity substances ectroscopic activation analysis of (FTD-HT-66-566) 11 p1649 N68-21039 irradiated silicon and NCL-67-63R) 11 p1772 N68-21250 Dielectrics, titanium of thin films for digita s, and vapor depositi nsulator-silicon trand [NASA-CR-94086] 11 p1773 N68-21433 Spectral emissivity (NASA-TN-D-4303) 1 p1775 N68-21708 es for visible lines of Measured trans (NASA-CR-93928) 11 p1658 N68-21839 on nuclear gamma ray ne, magnesium, and sit-Doppler shift mean resitions from isoto [COO-1468-2] 12 p1926 N68-22368 Radiation-induced n and p type, low and [NASA-CR-94536] ent effects measured in 13 p2132 N68-23246 Radiation damage to silicon and germanium semiconductors by high energy electrons [NASA-CR-66619] 13 p2133 N68-23464

ms of spacocraft 13 p1995 N68-23468 photovoltnic power sys [NASA-CR-94556] m rate, and so furing carbonization 13 p2018 N68-23832 Search for forbidden lines of silicon in Fraunhofer 13 p2147 N68-23966 nt in german [IAE-1165] 14 p2210 N68-24488 based on planer techniques for use in sat [BMWF-FB-W-68-04] 14 p2229 N68-24764 Excess charge carrier li dation in silicon a irradiation 14 p2332 N68-25179 ty carrier life in silicon [NASA-TM-X-59638] 14 p2335 N68-25392 Optical studies of lith m defect complex in ir-(NASA-CR-94916) 15 p2533 N68-25718 Lithium diffusion m ity in fast neutron irradiated 15 p2534 N68-25910 in proton bombarded si [NASA-TM-X-60273] boron impurity 15 p2540 N68-26563 for measuring effects of type silicon 15 p2541 N68-26632 calized vibrational modes of m compounds containing my, or hithium 15 p2544 N68-26809 phosphorus, arsenic, at NASA-CR-877611 cs and electrical break-Voltage-ampere ch wn from ion impac 16 p2744 N68-27621 nd p-type allicon crystals as using hall effect 16 p2744 N68-27639 Proton damage to n ar function of proton energy us [NASA-TM-X-60124] in Czochralski silicon 16 p2745 N68-27746 [NASA-CR-82347] em and sintered slip 16 p2691 N68-27774 16 p2745 N68-27788 Empsometric method for n rs of substrate and oxidation neasuring optical parame-on surface layer thickness [NASA-CR-95355] 16 p2692 N68-28043 Design techniques for a on photovoltaic cells ar generators based on sil-17 p2814 N68-28740 silicon, cadmium sul-r sulfide solar cells 17 p2814 N68-28743 uncased silicon integra [NASA-CR-66634] 17 p2862 N68-28948 to find effect of acid con Mass spectroscopy used to centration on determination of [NLCO-1012] 17 p2846 N68-29463 Elastic scattering crystals is investigated n from silicon single 18 p3148 N68-29588 Luxembourg effect in silicon used to study pulsed microwave heating of electrons, and change in electrical resistivity resulting 18 p3149 N68-29682 Energy bands of semiconductor junctions of gallium raenides and phosphides and silicon gallium phos-RADC-TR-68-701 18 p3044 N68-29777 Oxidation resista ctility of cobalt heat re-estriction of silicon and INASA-TN-D-47151 18 p3088 N68-29954 Bibliography on fa nd silicon detectors ethods for germanium ad by lithium ion drift (CEA-BIB-90) 18 p3079 N68-30668 Frenkel effect in g (APL-TG-230-T550) 18 p3049 N68-30692

Microwave transmissi silicon and indium antim 19 p3347 N68-30923 chemical polishing appara IESRO-TM-1121 19 p3283 N68-31192 (NSRDS-NBS-3, SEC. 2) 19 p3336 N68-32068 Vibrational mode stud plexes in gallium arsenide in silicon (USCEE-282) of lithium defect com 19 p3356 N68-32070 Advanced processing techniques for fabricating high liability silicon integrated circuits, and failure mode (EE-TRANS-1716) 20 p3564 N68-32614 in wafers [NASA-CR-96283] 20 p3487 N68-32663 mistry studies of 20 p3429 N68-33045 [NASA-TR-R-290] 20 p3574 N68-33228 on of carrier lifetime in 20 p3574 N68-33313 ects induced in silicon olar cells by one MeV o 00 p3404 N68-33502 Electron-phonon coupling in impurity absorption and and diffusion of phosphorus in oxide layer on ul-(FTD-HT-67-159) 20 p3576 N68-33580 20 p3576 N68-33582 electrical properties of microaductor devices 21 p3753 N68-33971 Nucleation and precip on of lithium in allicon 21 p3650 N68-34029 22 p3947 N68-34868 22 p3821 N68-35045 22 p3949 N68-35167 Dislocations on silicon single crystals by indentation (FTD-HT-67-395) 23 p4151 Ns8-3660 Energy spectra and cross of silicon particle interaction ne from alu [UR-NSRL-5] 23 p4127 N68-37021 Hall effect and electrical radiated silicon at 76 deg K [SC-DC-68-2328] ty of meutron ir-23 p4156 N68-37086 tron irradiation on low vity of germanium and [CEA-R-3387] 23 p4156 N68-37136 element germanium and silion is to be used as sensors for 23 p4033 N68-37305 tallization method of producing ribbon crystals on for use in photoresistors and electronic equip-23 p4158 N68-37308 Volt-23 p4158 N68-37312 Catalytic action and rate li licen-oxygen bond cleavage 24 p4210 N68-37525 defect pairs in silicor [NASA-CR-97309] 24 p4331 N68-37728 SILICON ALLOYS

icon-germanium solar thermoelectric generator (NASA-CR-72340) A 0 03 g0303 768-12252

ning microstructure of

13 p2087 N68-23298

13 p2107 N68-23481

15 p2541 N68-26603

16 p2680 N68-27655

18 p3027 N68-30356

19 p3225 N68-31294

19 p3253 N68-31619

stitutive interpretation of

is between silica and aluminum dis-

SU

IN

SILIC

[N/

444

Gi chro tors,

Bricon

[NA

We yeilar

INAS

dioxic REP

prope

Sille

Gol

High

TVA-

NT S NT S NT S

Poly [NASA

Synti linkage [NASA

SILICON

Conv precipit of alpha (CLOR

Fabri

(BMW)

semice and de

ECO

Bonding of large area silicon crystals to heat sinks, id determination of stresses between bonded materi-[NASA-CR-91446] 04 p0514 N68-12900 s of spherical precipita-tel silicon alloys 05 p0674 N68-14429 Optical dislocation tions in copper co [IS-TRANS-72] Thermal properties of gold germ and transition into glass-liquid phase em silicon alloys, 05 p0678 N68-14776 Effect of plastic strain on temperature dependence of magnetic properties of silicon iron alloy [RTS-4542] 20 p3561 N68-32303 Correlation between conductivity and microhard-[EE-TRANS-1681] 20 p3564 N68-32557 Electronic spectra of imperfections in silicon and silicon-germanium alloy 20 p3497 N68-32648 Zirconium silicon and hafnium silicon binary systems investigated by X ray diffraction [AFML-TR-63-2, PT. 1, V. 13] 20 p3503 N68-33257 Superconductivity of fused samples of binary systems Nb-Sn, Nb-Al, Nb-Ga, V-Si, and V-Ga [CONF-640310-1] 23 pd 154 Ns-8 26000 SILICON CARBIDES Solvant zone growth of single crystal silicon carb [AFCRL-67-0509] 01 s0023 N68-14 01 p0023 N68-10609 Epitaxial vapor desposition of beta silicon carbide on solution grown beta silicon carbide surfaces [AFCRL-67-0557] 03 p0356 N68-12148 Fluidized bed coating of uranium monocarbide with 04 p0466 N68-13038 Pressure effects on high temperature transformation of beta to alpha silicon carbide [AFCRL-67-0436] 04 p0556 N68-13113 Chemically bonded zirconium oxides strengthened with allicon carbide whiskers [NASA-CR-91470] 04 p0515 N68-13299 Band gap photoconductivity crystals of cubic silicon carbide ctivity of high purity single [PA-TM-1775] 11 p1774 N68-21573 Epitaxial growth, vapor depositi single beta-silicon carbide crystals [AFCRL-68-0166] sition, and properties of 15 p2490 N68-26667 Color centers, luminescence, and conductivity of quartz and silicon carbide crystals [AFCRL-68-0236] 18 p3023 N68-30132 Electron potential energy study of contact resistance in silicon carbide contacts [NASA-TT-F-11736] 18 p3046 N68-30214 Ablation thermodynamics of silicon carbide vapor at high temperatures and pressures [RM-5592-PR] 18 p3189 N68-30617 Growth of single crystals of silicon carbide by travel-ag solvent method ing solvent method [AFCRL-68-0288] 20 p3508 N68-32294 Determination of heats of formation of silicon car-bide and evaporation products from vapor pressure [FTD-MT-24-245-67] 22 p3824 N68-35377 Uranium contamination in pyrolytic carbon and sil-con carbide coating on uranium carbide fuel µellets GAMD-8325] 22 p3912 N68-35818 [GAMD-8325] Diffusion profiles of burium in pyrolytic carbon and silicon carbides using neutron activation [GAMD-8326] 22 p3912 N68-35858 Nuclear magnetic resonance in nitrogen doped sil-icon carbide 23 p4152 N68-36628 SILICON COMPOUNDS

NT ALUMINUM SILICATES

NT ARAGONITE

NT CALCIUM SILICATES

NT CHLOROSILANES

NT ENSTATITE ENSTATITE FLUOROSILICATES FORSTERITE NT GARNETS KAOLINITE MUSCOVITE ORGANIC SILICON COMPOUNDS PYROXENES QUARTZ SILANES NT SILICATES NT SILICIDES

Stress-strain curves for plastic deformation analysis of compressed polycrystalline iron allicon alloys [IS-T-128] 03 p0354 N68-12723 Parametric analysis of radioisotope cascaded ther-oelectric generators with Si-Ge first stage and PbTe [NASA-TM-X-1501] 05 p0695 N68-14585 Effective volume power density analysis for radioisotope power generator with silicon germanium thermoelectric elements [NASA-TM-X-1453] 05 p0607 N68-14630 Strengthening effects of copper, silicon, and man-ganese inclusions in carbon steel [RARDE-MEMO-37/67] 06 p0855 N68-15663 06 p0855 N68-15663 Structural changes in thin germanium, and silicon films under electron irradiation, and thermal annealing [NASA-TT-F-10466] 08 p1223 N68-17613 Mass spectrometry studies of volatile phosphorus and silicon inorganic compounds [NRL-6639] 09 p1292 N68-18426 Detection methods for oxygen concentration in sil-[NASA-TT-F-11556] 09 p1412 N68-19492 Silicon solar cell concept for Pioneer spacecraft solar [NASA-TM-X-59774] 14 p2195 N68-25622 Reactions, structure, and bond properties of disilox-one, methoxysilane, and other silicon hydrides and sil-icon fluorides 19 p3226 N68-31323 Cascaded silicon-germ moelectric test generator [NASA-CR-95996] 19 p3207 N68-32103 Reaction kinetics of silicon-fluorine and silicon hydrogen bonds in asymmetric silicon 20 p3416 N68-32334 Recovery properties of lithium containing p-n silicon solar cells after radiation damage [NASA-CR-96277] 20 p3402 N68-32919 Stability relations in ma ygen mineral systems sese silicon carbon ox-20 p3433 N68-33467 SILICON CONTROLLED RECTIFIERS Reliability of silicon rectifiers as inverters for alter-ating current power source for Atlas Centaur launch chicles [NASA-TM-X-1569] 11 p1631 N68-21562 Mechanical stress effects on electrical properties of metal-silicon rectifiers 21 p3753 N68-33815 SILICON DIOXIDE NT QUARTZ Impurities and interface states of silicon dioxide /sil-on system studied to improve microcircuit reliability ed to improve microcircuit reliability 61 01 p0121 N68-10098 icon system studied t [NASA-CR-90046] Factors influencing growth of cuprous chloride crystals in silica gel [AFCRL-67-0445] 01 p0024 N68-10740 Microstructure of lithium fluoride etch on silica 02 p0175 N68-11213 Shock wave effects on phase transformations in ger-manium dioxide, silicon dioxide, titanium dioxide, tin dioxide, and lead dioxide 03 p0315 N68-12564 Removal of silicon dioxide from plutonium rocessing anion exchange resin by sodium hydroxide IRFP-10371 05 p0617 N68-14029 Liquid-liquid immiscibility in barium oxide silicon dioxide system [TR-12] 05 p0681 N68-14914 Radiation induced coupling effects between in-tegrated circuit elements [IBM-67-521-10] O6 p0816 N68-15896 Thin film solid regenerable sorber plate to determine gases [NASA-CR-66529] orbent for use with 07 p0952 N68-17175 Bonding large area silicon single crystals to heat [NASA-CR-93195] 08 p1221 N68-17239 Theoretical calculations, and rain erosion test program for fused silica 09 p1356 N68-19420 Kinetics of calcium carbonate-silicon dioxide solid 11 p1644 N68-20633 Methane gas adsorption on carbon black and silica at high pressures in 100 deg to 250 deg F range 12 p1833 N68-22071 orating radioactive tracers during controlled

growth of monodisperse silica particles [UR-49-867] 13 p2010 N68-23207

Vapor deposition for exam trium oxide-silicon dioxide [TR-15] Reactor irradiation effects on optical absorption INASA-CR-10321 Charge storage in silicon dioxide resulting from elec-[NASA-CR-1088] Interface reaction solved in iron melts Surface diffusion mechanism and coefficient from gas phase adsorption kinetics in N-SiO gel 18 p3017 N68-29615 Catalytic reactions of hydrogen on tital Induction heating characteristics of powdered ma etite, iron and ferrosilicon susceptor dispersed in Induction nearing simulation assecutor dispersion in actite, iron and ferrosilicon susceptor dispersion ica sand coated with thermosetting resin ica sand coated with thermosetting resin ica sand coated with the sand in the Vibrational analysis of infrared spectra of fused silica Computer program for quanti mass spectrographic photoplates [ECOM-2968] Effect of zinc oxide on structure of glasses in so-oxide, zinc oxide, silicon dioxide systems 20 p3508 N68-32268 SILICON FILMS

Hydrothermal synthesis of fibrous serpentine from magnesium oxide and silica gel [RTS-4305] 20 p3418 N68-32500 cations on fused silica slips for test ra [GIT-A-994-2] ters and equipment specifi-22 p3895 N68-35398 Masking ability, impurity sorption of silicon dioxide fil [BMWF-FB-W-68-50] ents, and infrared ab-22 p3828 N68-35708 Spectral transmission a rements on fused silica during and after exposure to pu [NASA-CR-1191] ed neutron irradiation 22 p3912 N68-35826 Deposition of silicon dioxide films on germanium by ydrolysis and surface properties of such layers BMWF-FB-W-68-51] 22 p3830 N68-35887 Thick film vacuum deposition of silicon dioxide by sputtering for solar cell coversips [NASA-CR-97123] 23 p3992 N68-36241 23 p3992 N68-36241 Broken bond model for hole trapping in metal oxide semiconductors after ionizing irradiation [UNM-290-861] 23 p4156 N68-37088 Radio frequency sputtering techniques for applying integral cover-glass contings to silicon solar cella [NASA-CR-93410] 09 p1273 N68-18351 Vacuum deposition fabrication properties of, evaporated silicon th on techniques for, and thin film transistors 12 p1848 N68-22145 Fabrication and characteristics of hafnium and silicon high performance thin films for microcircuits (ECOM-01230-11) 13 p2039 N68-23185 id-solid and solid-solid diffu-betrates to heat sinks 14 p2264 N68-25101 Low temperature liquision bonding of silicon su [NASA-CR-94769] Radiation method for improving temperature conductor strain gages 14 p2260 N68-25414 characteristics of silicos [NASA-TM-X-60498] Effectiveness and improvements of silicon and cad-ium sulfide solar cells studied for space power system [NASA-CR-86064] 17 p2810 N68-28710 Growth and evaluation of dendrit solar cells [BMWF-FB-W-68-28] 19 19 p3203 N68-31262 Masking shility, impurity contents, and infrared absorption of silicon dioxide films
[BMWF-FB-W-68-50] 22 p3828 N68-35708 Diffusion welding silicon wafers to heat sink materi-INASA-CR-974171 24 p4262 N68-38101 SILICON JUNCTIONS lacehronal and isothermal anneals of radiation damage to silicon diode for fast neutron dosimeter [NDL-TR-83-11] 03 p0342 N68-12239 Development of silicon photon photon cells for unmanned sa ovoltaic solar energy 03 p0303 N68-12303 Nuclear radiati [COO-1624-11] icon p-n junctions 13 p2040 N68-23856 Char, nges in electrical prope rties of p-n Si solar cells studied after fast neutro (BMWF-FB-W-68-15) 14 p2191 N68-24687

SODIUM SILICATES

YTTRIUM-ALUMINUM GARNET YTTRIUM-IRON GARNET

D

3

[RT/EL/67/4]

face barrier and silicon radiat [MLM-1351]

Electrical and optical properties of gold-doped sil-icon p-i-n diodes at low and moderate current injection levels Sensitivity of silicon detectors to fluorescence X rays [UCID-15277] 12 p1875 N68-22644 to FLOXresin resistance to hydrogen fuels INASA-CR-720221 19 p3347 N68-30913 Time spread of puls sted by beta particles in Defect energy levels and concentrations for proton irradiated, n-type silicon single crystals [NASA-TN-D-4830] 23 p4155 N68-37051 trations for proton mcon radiation detectors IBJ-867/LA/E) 13 p2135 N68-23700 and and o e in silicon surface barrier lubricants [ESRO-TM-100] High energy proton d 12 p1894 N68-22162 Uniform damage to silicon solar cells by fast protons letectors NASA-TN-D-4528) 14 p2329 N68-24660 ILICONE BUBBEN [NASA-CR-97418] 24 p4201 N68-38209 Silicon /lithium/ re pliffers for high resolu electrons and X rays [JINR-P13-3718] Compression set re dependence on main sity and stability [RAE-TR-67075] detectors and pream troscopy of conversion in silicone rubbers, and bility and crosslink den-Pyrolytic silicon nitride dielectric for integrated cir-14 p2260 N68-25397 02 p0225 N68-11453 INASA-CR-9951 09 p1355 N68-18849 ects on performance of Organic peroxide ig rubber and swel h energy irradiation for our-thod for characterization of SILICON OXIDES

NT KAOLINITE

NT MUSCOVITE

NT QUARTZ silicon surface barrier de (NASA-TM-X-632421 16 p2661 N68-27456 ार का हमान्य 12 p1840 N68-22911 ensated p-i-n type and conductor detectors 16 p2664 N68-28029 silicone rubber and nd dissociation pressure memuremented to determine their suitability as solvents in oxides in high temperature reactor 05 p0680 N68-14000 Vapor and dissocolten oxides to det 20 p3512 N68-33324 Shape of pulses gicon radiation detect [REPT.-887/IA/E] by alpha particles in silof fluids through expun-[TUBIK-4] 19 p3280 N68-31818 23 p4046 N68-36223 lon exchange chromatographic separation of sents into groups suitable for gamma spectrometermination in reference to activation analysis constitue allicon dioxide hic sepa on of ele Rocket-borne sil ctor telescope for Van NT SILOXANES Allen radiations [ISAS-426, V. 33, NO. 8] 22 n3931 N68-35625 hyperfine silicon die [FTD-MT-66-142] 06 p0791 N68-15709 (ECOM-2879) 02 p0188 N68-11252 SILICON RECTIFIERS
U CRYSTAL RECTIFIERS Formation and properti es of oxide films on silicon Physical, mecione products e trical properties of sil-in aeromace environ-SILICON SOLAR CELLS 07 p0953 N68-16196 Growth kinetics, and electric properties of silicon, aromium, and zirconium oxide films on semiconduc-(REPT.-238) 11 p1719 N68-21203 SILICON TRANSISTORS Tricarbonyl manga silicone fluid lubrican [FTD-HT-67-226] bilizing agent added to Neutron radiation dame [SC-RR-67-312] 01 p0037 N68-10256 07 p1069 N68-16962 18 p3099 N68-30482 in film dielectrics of ail-t, calcium fluoride, cesi-d Teflon to bipolar silicon U MISSILE STORAGE) icon oxide, magnesiu um oxides, cesium flu [NASA-CR-93153] 01 p0038 N68-10658 Teflon 08 p1222 N68-17300 SHOXANES and packaging work on Circuit desi analog voltage to duty cycle ger [NASA-CR-90334] exysilane and vinyltriethox-nic liquid silica interfaces 08 p1190 N68-17677 Wettability of ethyltrieth ilane films formed at orga 02 p0188 N68-11299 13 p2090 N68-24054 pe of photovoltaic solar anaktors 03 p0389 N68-12279 Corpuscular ra energy converten [REPT.-67] Photoelectric emission from solid to solid in metal oxide semiconductors in ullicon-silicon oxide-gold Glass-fiber pi or use on poly/furfury-23 p4082 N68-36371 09 p1406 N68-18448 06 p0846 N68-15658 SILVER. System package design for thin film radio frequency transmitter receiver circuit modules [NASA-CR-65988] 09 p1303 N68-18780 Portable quartz crystal oscillator using silicon polycrystalline silve different work func (AFCRL-67-0378) 06 p0815 N68-15670 01 p0127 N68-10962 Metastable immisc boron trioxide silicon er, low anturation voltage dioxide system (REPT.-67-C-244) 13 p2089 N68-23776 NASA-CR-92534] 06 p0816 N68-15995 04 p0446 N68-12910 uilibrium phase compo erties of solid solution silicon dioxide system ns and thermodynan magnesium oxide-ir te metal oxide semicor d response to gamm ctions of silver, relative ements, and hydrogen bon at 2000 deg C 07 p0952 N68-16127 Absolute ionizations sections of tr 14 p2216 N68-25019 (TRW-06415-6001-R0001 reactions with bo ICOO-1147-221 Silicon oxide film pro pyrolysis of tetraethoxysi [ECOM-2918] on by low temperature 06 p0816 N68-16002 of biamuth, copper, gold, rotron radiation 07 p1041 N66-16325 Influence of tempera teristics of silicon transists Absorption measureme silver, and tin by 6 GeV sy {DESY-67/27} on operating charac-15 p2490 N68-26573 Gold additive and X rays used with metal oxide emiconductor capacitor to study surface state charge and density of oxidized silicon surface 07 p0973 N68-16606 of gold-silver-gold film Current use of silicon com power modulator switch series [RADC-TR-67-625] lled rectifiers in high 18 p3045 N68-30061 07 p0975 N68-16961 09 p1312 N68-18274 High frequency electrodeless plasmatron for produc-on of pure silicon and silicon oxides Optical constants loys determined for al transmittance end dilute silver- indiun olet spectral reflectance rements on vacuum Effective mobility in silicon surface channels mea-ired with MOS transistor tion of pure silis [TVA-P-4198] 19 p3285 N68-31792 10 p1580 N68-20216 SILICON POLYMERS

NT SILICONE RESINS

NT SILICONES

NT SILICONES Sawtooth waveform voltage generators using silicon 15-1-187 08 p1222 N68-17282 ermination of effect ered and foil silver of various current den electrolytic surface a rodes subjected to oxi is in ummoniacal medi 10 p1507 N68-20441 Effect of electron and prote m irradiation on n-p-n siltrogen bonds 07 p0957 N68-16509 [NASA-CR-61548] con transistors BMWF-FB-W-67-311 08 p1140 N68-17427 11 p1673 N68-21202 [NASA-CR-93197] hesis of epoxy polymers containing siloxane Behavior of silicon p cobalt 60 gamma rays [CEA-R-3313] ity of sintered silver elec-Increased discharge of rodes used in storage be NRL-6619] transistors irradiated by [NASA-TM-X-53698] 16 p2686 N68-27086 12 p1851 N68-22999 08 pi 125 N68-18054 SILICON RADIATION DETECTORS High vacuum, high copper and silver [NASA-CR-81721] properties of p-n junc-flects on silicon and gerre, creep tests on Convex-type silicon detector for use in electrostatic precipitator as collecting electrode for direct counting of alpha particles of radon decay

(CLOR-65/D)

03 p0343 N68-12374 08 pl187 N68-18166 13 p2039 N68-23546 ring rates of ailver and Surface tension of Cu-Sn system [COO-[587-2] 03 p0343 N68-12374 equivalence for Fabrication and proj 11 p1712 N68-21001 damage effects in silicon tra INWF-FB-W-68-191 14 p2230 N68-24803 BMWF-FBK-67-72] rt penetration distances imperatures. 12 p1952 N68-21887 05 p0658 N68-14103 interdiffusion over very in gilver-gold solutions at lo Hot spot formation as and thickness variations on of collector resistivity taxial and triple diffused Low energy proton da licon surface barrier de ge effects on useful life of ctors operated in geomagillicon planar tra [ECOM-2943] dy of copper and silver Crystallographic structure ands with carbon, salfur, as netically trapped radial (NASA-TM-X-63082) 16 a2630 N68-26961 06 p0844 N68-15364 12 p1833 N68-22031 voltage silicon switching Review of electronics and instrumentation studies, cluding silicon detactors for high resolution spec-ometry and thermoluminescence measurements

(NASA-CR-96287)

[RDTR-101]

SILICONE RESINS

07 p0976 N68-16359

of lithium-drifted sur-

8 p1177 N68-17495

20 p3452 N68-33235

06 p0858 N68-15948

Evaluation of silicone resin for pyrotechnical appli-

studying silver [18 proc [USNRDL-TR-68-21]

of reduction method for a uranium 235 fission 13 p2122 N68-24219

14 p2214 N68-24728

Separation of mercury from silver in nitric acid solu-

SU

Tie it

IN.

mi ter (E)

me

1

C

Be equi zero [NA

Eff

Ele conc batte [NAS

Po

ECC

lery a

Stri trolyt [NAS

Det

Effe

INAS

INAS.

Poh

Dev

Einc ce

SIMICOI U IM

SIMILAL

SIMILA

DLR-F

MILAR NT L

sisti sepi

SILVER ALLOYS	
	fect interaction in silver gold
system	14 p2333 N68-25239
Reaction of sintered si	lver electrode to oxidation and
reduction	
[NASA-CR-95267]	16 p2612 N68-27973
Temperature effects or and graphite platelets	n stacking faults in silver films
and grapinic practices	17 p2957 N68-28798
Nonlinear optical effer light beam interaction at photocathode surfaces	cts of intense monochromatic silver and cesium antimonide
	17 p2897 N68-28953
Reactor production b 108, and properties of Cd	y neutron irradiation of Cd 1109 produced 18 p3114 N68-30163
Courtellossashis chance	ne during oxidation (charging)
tered silver plaque	es during oxidation /charging/ al oxidation of industrial sin-
[NRL-6701]	19 p3203 N68-31291
Scattering in argon ato	mic beams from cleaved mica
and vacuum deposited air	20 p3541 N68-32274
Microbardness of elec	trospark-deposited layers of
Ag, AgPd, Pd, and Au	The state of the s
	20 p3487 N68-32589
Reaction geometry effi	ects on oxidation and reduc- trodes 20 p3428 N68-32918
tion of alkaline silver elect	trodes 20 =3428 N68-32018
	on mechanical properties of
aluminum casting alloys	on mechanical properties of
(RIA-68-1320)	22 p3892 N68-35801
Oxygen dissolution kine	etics and thermodynamics for
fiquid silver alloys	23 p4012 N68-36902
Electromidration of As	110 and Sb 124 in silver
[CEA-R-3480]	23 p4155 N68-37081
Absolute neutron cross	sections for nickel and silver
uning bremsstrahlung	
	24 p4310 N68-37616
SILVER ALLOYS	
Feasibility demonstra	ation of palladium-silver de in water-electrolysis cells
for aerospace application [AMRL-TR-67-65]	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
[AMRL-TR-67-65]	69 p1287 N68-18428
Stacking faults measure	ed in cold-worked filings of
face centered cubic silver ([BARC-299]	11 p1711 N68-20893
	mical concentration gradient
in silver-gold alloys	men concentration gracient
I RESERVED TO	13 p2013 N68-23530
Wet method for analyzi	ing gold silver alloys of high
gold content	14 p2213 N68-24708
Shear stress and active deformation of silver and	tion energy and volume for niobium alloys in solid solu-
tions [COO-916-13]	15 p2486 N68-26826
Accelerated occurrence	e of closed order in gold-
	es caused by heat treatment 17 p2899 N68-28551 ads in gold and silver elec-
troplating and pretreatmen	t processing techniques 20 p3491 N68-33342
Heats of solution of silv	ver and gold in dilute silver-
gold-tin alloys as function of [NASA-CR-87774]	of alloy composition 21 p3791 N68-33665
	tics and thermodynamics for
liquid silver alloys	23 p4012 N68-36902
SH VER AROMINES	23 prot2 (100-30902
SILVER BROMIDES	

in cold-worked filings of silver and nickel alloys 11 p1711 N68-20893 in chemical concentration gradient 13 p2013 N68-23530 nalyzing gold silver alloys of high 14 p2213 N68-24708 activation energy and volume for ir and niobium alloys in solid solu-15 p2486 N68-26826 urrence of closed order in gold-acancies caused by heat treatment 17 p2899 N68-28551 d trends in gold and silver elec-estment processing techniques 20 p3491 N68-33342 of silver and gold in dilute silverction of alloy composition 21 p3791 N68-33665 n kinetics and thermodynamics for 23 p4012 N68-36902 Chemical sensitization due to sulfur maturation in photographic silver bromide emulsions
23 p4011 N68-36829 SILVER CADMIUM BATTERIES Design, fabrication, and testing of vented rechargea-ie silver-cadmium batteries file silver-cadmium (ECOM-03359-F) 10 p1460 N68-19805 Advanced 28 volt silver-cadmium electrical energy [NASA-CR-92042] 11 p1632 N68-21805 Electrochemical oxidation and thermal degradation in silver zinc and silver cadmium batteries [NASA-CR-94382] 12 p1837 N68-22565 Physical and electrical characteristics of nickel cadmium, cadmium-silver oxide, and zinc-silver oxide bat-teries and electrochemical cells [ECOM-2949] 16 p2591 N68-27109 Comparative data on hermetically sealed silver oxide admium batteries and nickel hydroxide cadmium cell 17 p2811 N68-28718

Energy characteristics and storage stability of silver zinc, silver cadmium, and nickel cadmium batteries 17 p2811 N68-28720 Manufacturing pasted silver electrodes and pressed admison electrodes and separator system for sealed chargeable silver cadmism batteries rechargeable silver (ECOM-03358-2) 21 p3628 N68-34463 SILVER CHLORIDES Diffusion coefficient measurements for binary noble as mixtures, silver chloride, and polymer diluent [NASA-CR-89955] 01 p0098 N68-10177 Control of magnesium compounds during operation of silver chloride magnesium sea water battery for (NOLTR-67-120) 11 p1627 N68-20936 Liquid metal embrittlement, microhardness and frac-ture strength in ionic crystals of silver chloride and ad-sorption induced charge carrier redistribution in solid-[RIAS-TR-68-6C] 15 p2542 N68-26654 Mossbauer effect in silver chloride doped with iron [JINR-P14-3776] 16 p2726 N68-27957 Free vacancy correlation factor fo [COO-1197-21] 23 or for silver chloride 23 p4153 N68-36784 SILVER COMPOUNDS

neasurements of cells in halides Electronic commutator emf mea 12 p1818 N68-22152 Polarographic current suppression in alkali perchlorate electrolyte by silver perchlorate addition 13 p2014 N68-23604 Kinetics of thermal di tion of silver nitrite in vacuum and atmospheric cor [NASA-TT-F-11732] 15 p2403 N68-25668 ctrical properties of syntheti-railver antimony sulfide 18 p3155 N68-30823 Electrical and photoelectrical cally fabricated samples of silver

Knudsen cell technique for studying non-isothermal tanges in properties or compositions of silver and aron nitride during vaporization boron nitride during vaporiz [AFML-TR-67-392, PT. 1] 19 p3231 N68-31880

Single crystal X ray diffraction structures of dysprosium, copper, a diffraction studies on crystal im, copper, and silver com-20 p3417 N68-32396

Metal solution calorimetry measurements on tem-perature dependence of heat of formation of silver-magnesium compound (TR-7) 22 p3823 N68-35184 SILVER HALIDES

Q switched ruby laser induced luminescence and hotoconductivity in silver halides 15 p2478 N68-26324 Frenkel defect-defect interaction in silver halides 19 p3346 N68-30881

SILVER IODIDES Rain washout coefficients for sub-micron silver iodide particles similar to those used in cloud seeding [BNWL-SA-1405] 02 p0233 N68-11539

Washout coefficients for silver iodide particles in light snow and rain [BNWL-SA-798] 03 p0366 N68-12670 Cloud seeding for snow using silver iodide catalyst 05 p0685 N68-14273

Silver iodide seeding and radar echoes from convec-(SR-23) 10 p1520 N68-19662 Capacitance of electrical boundary layers at silver iodide aqueous solution interface 15 p2413 N68-26169

Nucleation mechanism and dissolution theory of a percooled potassium and silver iodide mixed smol NAD-CR-RDTR-112] 18 p3023 N68-30170 KAD-CR-MUTATION of silver and lead non-Effectiveness of silver and lead non-decognational in cloud glaciation 18 p3111 N68-30787 JPRS-46050)

Influence of admixtures of surface active substances on ice forming activity in clouds of silver and lead iodides, and phloroglucinol 18 p3111 N68-30788 Cloud crystallizing effects of silver and lead iodides ablimated in pyrotechnical compositions
18 p3111 N68-30789

Electrophoretic motion changes in silver iodide col-loids from X ray irradiation 22 p3822 N68-35061

Calculations based on convective and Brownian dif-mion to predict rain washout coefficients for sub-24 p4289 N68-38417 SILVER NITRATES

Exchange of silver ions in two-phased Pyrex glass and fused sodium-silver nitrates [REPT.-67-C-404] 11 p1720 N68-21437 SILVER OXIDES

Electrochemical oxidation of zinc, thermal decomposition of silver oxide, and solubility determinations of silver oxides in potassium hydroxides [NASA-CR-92346] 06 p0770 N68-15856

Optical microscopic analysis on corrosion and systallogenesis of silver oxide electrode in alkaline [NRL-6647] 10 p1483 N68-19868

ic voltammetric study of silver electrode in um hydroxide solutions at room temperature 13 p2019 N68-23853 Cyclic volta TR-71

Effects of constant-current reversal during charge of lver oxide electrode 19 p3206 N68-31826 [NRL-6695]

Crystallographic changes during charging of silver electrodes - oxidation following five charge and diacharge cycles at low rate [NRL-6707] 20 p3416 N68-32366 20 p3416 N68-32366

Reduction of silver by zinc, thermal decomposition of silver oxides, amalgam electrodes for use in alkaline batteries, and gas evolution at electrodes [NASA-CR-97223] 23 p4009 N68-36586 23 p4009 N68-36586

SILVER ZINC BATTERIES

Separator materials evaluation for use in high rate, on-reserve zinc-ailver oxide batteries to operate up to 165 deg F [DAC-59852-51] 01 p0005 N68-10578 Properties of electrolytes, separators, electrodes, and deposits in silver-zinc cells [NASA-CR-90232] 01 p0006 N68-10970

Ligand-containing polymers for use as separator materials in sterilizable silver-zinc batteries [NASA-CR-90329] 02 p0161 N68-11134

Microminiature fuel cell design and tests, and gas discharge data on silver zinc cells [NASA-CR-90523] 02 p0163 N68-11926

Properties of silver zinc storage batteries, and ultrasonic effects on nickel electrode performance [FTD-MT-65-485] 04 p0448 N68-13054

Improved properties of silver zinc storage batteries, and production of zinc and silver electrodes 04 p0448 N68-13055

Effects of ultrasonic oscillations on oxidized nickel electrode in alkaline storage battery 04 p0448 N68-13056 Comparision of foreign manufactured \$-12 silver-zinc cells with domestic cells [ECOM-2884] 06 p0768 N68-15275

Zincate diffusivity in alkaline electrolyte determined as function of potassium hydroxide concentration and

[NASA-CR-92599] 06 p0769 N68-15716 Ethylene/methyl acrylate copolymer synthesis for silver-zinc battery separators [NASA-CR-92551] 06 p0770 N68-15889 06 p0770 N68-15889

Electrode design, inorganic separators, and per-ormance tests of multiplate five ampere-hour silver zinc battery cell [NASA-CR-965] 07 p0937 N68-16321

Rechargeable micro fuel cells in controlling internal pressure of secondary silver oxide-zinc cells for opera-tion in hermetically sealed condition [NASA-CR-92678] 07 p0938 N68-16346 07 p0938 N68-16346

Ligand containing polymers for use as heat steriliza-hle separators for silver zinc battery [NASA-CR-93176] 08 p1118 N68-17232 Development, heat sterifization, and shock testing of her-zinc cell

NASA-CR-93180]
Electrocrystallization of deposited zinc in denormation of silver zinc and zinc air batteries
on operation of silver zinc and zinc air batteries
On p1141 N68-17732 [NASA-CR-93180] form in operation of [NASA-CR-93263]

Design concepts and performance characteristics of miniature scaled silver zinc battery for high altitude 11 p1626 N68-20716

Evaluation of separating membrane materials for zinc aliver oxide batteries [DAC-59852-F] 11 p1628 N68-20959 Copolymeric separator film preparation for heat

[NASA-CR-94322] 12 p1818 N68-22211 Electron radiation effects on cellophane separator in silver-zinc cells [NASA-TM-X-63170] 12 p1819 N68-22226

Electrochemical oxidation in nilver zinc and nilver cadm [NASA-CR-94382] nd thermal degradation in batteries 12 p1837 N68-22565

layers [AEDC-TR-67-200] Silver zinc battery separator material development and production [NASA-CR-94785] 14 p2192 N68-25011 Physical and electrical characteristics of nickel cad-mium, cadmium-silver oxide, and zinc-silver oxide bat-teries and electrochemical cells [ECOM-2949] 16 p2591 N68-27109 Performance test data on sesied assemblies of com-posite silver zinc cell and dual micro fuel cell [NASA-CR-94104] 16 p2594 N68-27645 Similarity of nonequilit Hydrogen oxygen fuel cells, silver zinc hatteries, and current technology in primary electrochemical spectrochemical spectrochemical spectrochemical spectrochemical spectrochemical spectrochemical spectrochemical spectro sonic nozzles [FDM-TM-67-1] Sealed silver zinc battery development problems, and life cycling test data 17 p2811 N68-28719 Energy characteristics and storage stability of silver zinc, silver cadmium, and nickel cadmium batteries 17 p2811 N68-28720 coupling in turbulence (NASA-CR-938381 and predicted develop-secondary batteries 17 p2811 N68-28721 Performance characteristics as ment of silver zinc primary and se Tensile strength, electrolyte retention, electric re-sistance, and dimensional stability tests to screen separator materials for silver zinc batteries batteries 17 p2811 N68-28725 Circuit development for improving low input voltage conversion regulation from primary /radioisotopic fueled thermoelectric generators/ and secondary /battery/sources [NASA-TM-X-63118] 18 p3005 N68-30197

Operating characteristics of zinc-silver and nickel-admium batteries for sounding rockets. 19 p3202 N68-30961 Breadboard model design and construction of test equipment for studying ailver zinc battery behavior in zero-g environment of earth orbit [NASA-CR-95993] 19 p3204 N68-31373

Effects of constant-current reversal during charge of silver oxide electrode [NRL-6695] 19 p3206 N68-31826

Electrical performance, bioassays, and packaging concepts evaluated in sterile assembly of silver zinc batteries [NASA-CR-66671] 21 p3627 N68-34330

Portable military charger to support ground surveil-lance radar zinc-silver oxide batteries [ECOM-2988] 22 p3809 N68-35948 22 p3809 N68-35948 Ethylene/acrylic acid separators for silver zinc bat-

tery applications [NASA-CR-97226] 23 p4009 N68-36585 Structure and fabrication of silver zinc solid elec-olyte battery for meteorological balloon environment trolyte battery for me [NASA-CR-97219] d balloon environment 23 p3993 N68-36588

Development and testi buttery for Mariner 1969 [NASA-CR-97211] ting of improved sealed Ag-Zn 23 p3994 N68-36657

Effects of freezing-melting cycles on primary silver oxide zinc batteries [NASA-TM-X-1681] 23 p3996 N68-37265 Polymer research - transport characteristics of nese battery separator membranes 23 p4017 N68-37409

Development and testing of improved five Ah silver zinc cell designed with rigid-type inorganic separator [NASA-CR-72445] 24 p4200 N68-37834

U IMAGE CORRELATOR)

SIMILARITIES.

ę.

d

0

2

12

12

16

99

11

in

26

ANALOGIES

SIMILARITY NUMBERS

Similarity solutions for laminar and turbulent mixing of two parallel streams 09 p1326 N68-18480

Spherically symmetric similarity solutions of radia-tive gas dynamic equations 18 p3184 N68-29762

Perturbation theory and similarity solutions for propagation of strong shock waves [DLR-FB-68-52] 24 p4248 N68-38357 SIMILARITY THEOREM

NT LAGRANGE SIMILARITY HYPOTHESIS

larity solution for plane shock wave propagation uniform media of variable density 02 p0201 N68-11669

Von Mises transformation used to demonstrate athematical similarity between problems in concen-

m and flow in free boundary 03 p0335 N68-12102 Spectra of atmospheric turbusence and similarity theory to vertical spectra 04 p0501 N68-13589

plarity theorem for calculating thermodynamic rities of moist lithium vapors 04 p0598 N68-13855

Similarity laws for interaction of solar wind with magnetosphere to produce space simulation (ESRO-SN-16) 05 p0724 N68-14032 e simulation 05 p0724 N68-14032

m air expansions in hyper-

up p1325 N68-18411 and faster moving coaxial stream [NASA-Th-0-4441]

Similarity laws for jet noise, model line emitter, near eld pressure covariances and spectra, phase observace of near pressure fields, and nonlinear outline in urbulence. 10 p1559 N68-20094

Similarity methods for solving boundary layer equa-ns for determining velocity and temperature dis-bution in two dimensional and axisymmetric heated

11 p1682 N68-20731

Similar solutions for laminar compressible flow of ideal gas through axisymmetric channels 11 p1684 N68-21101

Similarity laws relating to simulation of air intakes and jets for wind tunnel testing of V/STOL aircraft 12 p1817 N68-22509

Similar solutions for unsteady magnetohydrodynam-ic couette flow of electrically conducting fluid in presence of transverse magnetic fields [SC-IR-67-865] 14 p2241 N68-24825

Local similarity techniques for improving linearized slutions to problems of viscosity and compressibility curved flows in curved flows [NASA-CR-88604] 15 p2456 N68-26787 Similarity transformation roblems in magnetogasdyna for boundary layer

SR-53] 19 p3340 N68-31443 Properties of similarity solutions in classical

hydrodynamics [NOLTR-68-55] 19 p3266 N68-31863 Similarity theorem for determining noise intensity propagation in static and moving turbulent jets [SM-23246] 20 p3400 N68-32231 Similarity rules for ray analysis in nonlinear acoustic wave propagation

22 p3855 N68-34926

Scaling and similarity study of liquids discharged from containers through orifices and tubes [NASA-CR-61964] 22 p3858 N68-35229 SIMILITUDE LAW

ITUDE LAW
imilitude conditions for flutter tests on mousiervelocity and low speed wind tunnels
05 p0749 N68-14567

Shock waves associated with underwater exploding wires compared with chemical explosives by law of [IR-67-87] 06 p0815 N68-15653

odels of vortex tube 14 p2236 N68-25020 Hypersonic flow over slender blunt body with hysicochemical gas transformation in high entrop

16 p2646 N68-27599 Dimensional analysis, and similitude and scaling laws or structural dynamics model testing of spacecraft

(NASA-CR-1195) 22 p3974 N68-35632 SIMPLIFICATION

Rocket engine component simplicity rating [NASA-CR-91471] 04 p0567 N68-13655 Canonical forms and simplification formula mani [AD-671938] 20 p3514 N68-32924

SIMULATED ALTITUDE

Evaluation and design of altitude simulation test [A9] 07 p0981 N68-16181 SIMULATION NT ACOUSTIC SIMULATION

MULATINE
NT ACOUSTIC SIMULATION
NT ALTITUDE SIMULATION
NT ANALOG SIMULATION
NT ANALOG SIMULATION
NT ANALOG SIMULATION
NT COMPUTERIZED SIMULATION
NT COMPUTERIZED SIMULATION
NT DIGITAL SIMULATION
NT DIGITAL SIMULATION

NT ENVIRONMENT SIMULATION
NT EXHAUST FLOW SIMULATION
NT FLIGHT SIMULATION
NT LANDING SIMULATION
NT RHEOELECTRICAL SIMULATION
NT SOLAR SIMULATION
NT SPACE ENVIRONMENT SIMULATION
NT HERMAL SIMULATION
NT WEIGHTLESSNESS SIMULATION

nulation of stage separation in European I 02 p0272 N68-11833

Air traffic control aspect of dynamic simulation program for supersonic transports
[RD-67-47, PT. 2-2] 04 p0534 N68-13158 04 p0534 N6E-13158 Reentry by hypervelocity w nd tunnel simulation for

reentry physics - aerospac [DLR-MITT.-67-11] neering 04 p0491 N68-13555 machine systems [NASA-TT-F-11390] 04 p0463 N68-13621

Simulation of attitude spacecraft with time lag mag [APL-TG-949] zation of Dodge 11 p[78] N68-20997 Method for complex si tion of nonstationary

FTD-HT-67-164 11 p1806 N68-21719 imulation of air intakes of V/STOL aircraft 12 p1817 N68-22509 Similarity laws relating to at and jets for wind tunnel testing

Simulation technology bibliography applicable to human factors engineering [DOC.-678D265] 12 µ1830 №68-22824 Effect of red versus white lighting on dark adaptation using simulated flight instrument panel for preadaptation

17 p2833 N68-29249 n of flow field induced by Detonation wave sin supersonic vehicle [NASA-CR-96123]

19 p3194 N68-31440 ent voltage simulator 19 p3254 N68-31977 Design and operati [ECOM-2953]

Heat and mass flow rate through several types of composite clothing under simulated conditions [TR-68-44-CM] 20 p3410 N68-32519 ms for one man flying

Studies review of pilot p units in simulated hunar grav [NASA-TM-X-61164] 20 p3413 N68-33437 tion of solar wind interaction with earth magnetic field (NASA-CR-967101 21 p3762 N68-34159

Heat transfer in simulated by 22 p3977 N68-34946

r man machine systems (SDC-SP-3143) 22 m3817 N68-35233

SIMULATOR TRAINING
U TRAINING SIMULATORS

IMULATORS

NT COCKPIT SIMULATORS

NT CONTROL SIMULATION

NT ENVIRONMENT SIMULATORS

NT FLIGHT SIMULATORS

HIGH VACUUM ORBITAL SIMULATOR LUNAR ORBIT AND LANDING SIMULA-TORS

TORS
SHOCK SIMULATORS
SOLAR SIMULATORS
SPACE SIMULATORS
SPACECRAFT CABIN SIMULATORS
TARGET SIMULATORS
TRAINING SIMULATORS
VIBRATION SIMULATORS

Troposeaties communication system simulator for borstory reproduction of tropospheric hop dynamic iding and multipath variations (CSI-67-TR-2437) 01 p0046 N68-10570

Accelerator firing di micrometeoroid simulation [NASA-CR-90505] 02 p0196 N68-11865 04 p0476 N68-13114

Single axis simulator as test facility to dismulate dynamic behavior of large astronomical astallite [ESRO-TM(P-7-6)] 04 g0490 N64-13402 State of development of single axis simulator bearing te of development or trenomical sate

for large astronomic (ESRO-TM/P/-72) 04 p0490 N68-13405 es for fallout simulators and

ries for executi control functions in multiproc [RADC-TR-67-500]

05 p0633 N66-14364

TOTAL TAXABLE

SUB.

(AF)

meth (AF

(UC

Ev

AF

FTD

Hy

mean [NAS

Am ple cry NAS

Gro modifi [COO

Spin

Pho

Mol

Elec radical (COO-

Flux

of copp

Dislo

Relat

NASA

Neut make o

Expe of subti centere

SIMULTANEO
Two star simuli [NASA-CR-6594
Shock expansi senic boom simul [NASA-CR-1055
Piloted simula Gemini and Apoll [NASA-TM-X-59
Synthetic displi puter controlled a NASA-TM-X-59
Systems engine for Bioantellite act [NASA-CR-9521
Two star nimuli [NASA-CR-68594 Shock expansi- unnic buom aimul [NASA-CR-1055 Piloted simula Gemini and Apol [NASA-CR-1055 Piloted simula Gemini and Apol [NASA-TM-A-59 Synthetic diapl patter controlled a [NASA-TM-X-5] Synthetic diapl patter controlled a [NASA-CR-6921 Design and con simulator for ex- welded joints. [COA-NOTE-MA Accelerator mo micrometeoreoid a [NASA-CR-9569 Parallel operati on sequential com [FTD-HT-67-2] Meteoritic almu [NASA-CR-6661: Visual rendezve docking aimulator
[COA-NOTE-MA Accelerator mo
[NASA-CR-9569 Parallel operati
[FTD-HT-67-2] Meteoritic simu
[NASA-CR-6661: Visual rendezvi
docking simulator
Computer solut value problems in fields
[ORO-2430-37] Quadratically of
Generalized sim
Algorithm for a
[REPT67SD245]
equations to deterr
Algorithm for a firential equation [REPT-67SD245] Graphical methoquations to detern equations [ECOM-2927] SIMULTANEOUS BUUMAGE CORSINE
SINE U TRIGONOME SINE WAVES
High frequency tion control
High frequency tion control [AD-660223] Polarization effitrom sinusoidal cap
Effect of two din
Effect of two din sions on pressure a plate in hypersonic [NASA-TN-D-443] Approximate sol tion in dispersive, o
tion in dispersive, o
Interferometric n motion

OUS EQUATIONS r and beam combination 07 p0981 N68-16393 on tube characteristics and use as 14 p2236 N68-24966 crystal molybde [COO-1417-3] s with applicability to o space programs 5981 14 p2237 N68-25245 (TR-9) chnique for implementing con-stor and airborne displays 14 p2237 N68-25323 ny techn imulator 640] ering data and design specifications tive primate simulator 16 p2638 N68-27694 tion of weld heat-affected zone ng structure and properties of T-18) 17 p2890 N68-28385 nted on muzzle of light gas gun for eric entry simulation 17 p2868 N68-28927 18 p3043 N68-30739 lator using shaped charge techniques ORNL-P-3117] 19 p3258 N68-31223 us, rendezvous docking, and visual 21 p3641 N68-34529 DUATIONS ion for three dimensional boundary wolving time invarient conservative [TR-21] 03 p0383 N68-12119 overgent method for solving simul-10 p1550 N68-20537 linear estimation 11 p1722 N68-20615 merical integration of coupled dif-11 p1732 N68-21587 od for solving simultaneous Boolean nine memory element flip-flop input TR-5] 15 p2433 N68-26524 MAGE CORRELATOR TRIC FUNCTIONS sine wave spark test for wire insula-02 n0189 N68-11334 ects in microwave backscattering illary waves on water 07 p1037 N68-16937 al multiple sine wave protru-transfer distributions for flat 09 p1267 N68-19063 ns for transient wave propaga-iductive media 10 p1519 N68-19616 ent of vibratory sinusoidal

14 p2301 N68-25564

Dynamic phase plotting for accelerometer signals from sine wave vibration tests 14 p2368 N68-25571

Application of correlation of energy distribution wi orrelation methods in determination ation with frequency in frequency modulated waves [RAE-TR-67079] 18 p3033 N68-29741

Electromagnetic wave propagation in medium pumped by traveling sinusoidal wave 19 p3315 N68-31155

Solution for Dirac equation developed for case of associdal field and external field consisting of NASA-TT-F-11899] 21 p3731 N68-34185

Frequency multiplication and division in integrated reuits - design concept for voltage controlled oscilla-re using voltage variable resistances in positive feed-ack configuration 23 p4034 N68-36118

SINGLE CRYSTALS

NT WHISKERS [SINGLE CRYSTALS]

Crystal structure, solids-electromagnetic interac-ons, and physical properties of single crystals, thin lms, and bulk solids films, and bulk solids [NASA-CR-89535] 01 p0121 N68-10097

ng and pair production on diamond single crystals [DESY-67/23] 01 p0106 N68-10423 rface structure and el al molybdenum and tu d electrical properties of single d tungsten ribbons

01 p0123 N68-10442 Hall effect s e crystal 01 p0124 N68-10536

Mechanical properties of single crystal sapphires for whisker composites [AMMRC-CR-66-01/5] 02 p0221 N68-11269

High temperature vaporization mechanisms studied sing evaporation rate measurements from single (UCRL-17628) 02 p0281 N68-11379

Ferrimagnetic resonance pro le crystal nickel zinc ferrite sp ince properties of annealed single crystal nickel: [ECOM-2878] 03 p0404 N68-12103 Chemical transport techniques for electrolytic rowth and preperation of transition metal compounds note crostals.

single crystals
[AFML-TR-67-239] 03 p0404 N68-12109 Electron microscope observations on dislocation arangement in copper single crystals subjected to com-ression and fast neutron irradiation

03 p0350 N68-12215 Hall effect mes rements of p and n type silicon and single crystals

03 p0405 N68-12223 Stationary high field domains in negative differential conductivity range analyzed in cadmium sulfide single 03 p0408 N68-1245G

Dislocations in beryllium twinning and deformation y climb [SC-T-67-0916] 03 p0354 N68-12713

Bonding of large area silicon crystals to heat sinks, and determination of stresses between bonded materi-04 p0514 N68-12900 [NASA-CR-91446]

Image converter camera use in study of crack ropagation in zinc single crystals AD-661339] 04 p0585 N68-12959

Electron spin resonance and o gen molecular ion in sodium fit nd optical properties of ex-fluoride single crystals 04 p0557 N68-13306

Electrical conductivity in ceramic and single crystals of cerium oxide and erbs [AFOSR-67-2649] rum oxide 04 p0558 N68-13431

Optical heterodyne spectroscopy, and ultrasonic radiation diffraction of light emission from liquid surfaces and single crystals

04 p0545 N68-13468

Personnel dosimeters for thermoluminescence mea-surements from lithium fluoride single crystals 04 p051 l N68-13698 etric m nts on refraction index of

single silicon crystal with surface film [NASA-CR-91509] 04 p0474 N68-13798 m oxide single crystals by Ver-

Preparation of calciu [ORNL-TR-1807] 04 p0527 N68-13865

Brief summaries of work on aniaotropic and forced aniaotropic magnetostriction constants, and forced volume magnetostriction for single crystals [ORO-2839-13] 05 pd672 N68-14054 Tin tunnel diodes evaporated on supphire single crystal for quantum generation and detection of phonons in superconductors

05 p0728 N68-14457 tropic energy gap Tunneling measurement in niobium single crystals 05 p0728 N68-14464

Single crystal neutron spectro eter with time of KFKI-8/1967] 05 p0662 N68-14537 Structural deform and fractures caused by second order twinning in magne [NASA-CR-91810] os poerr Nes-14642

Time dependence of monochromatic components of electroluminescence of zinc suffide single crystals [AFOSR-67-2786] 05 p0729 N68-14738 Physical properties of uranium dioxide single crystals

[EUR-3323.E] 05 p0681 N68-14771

Ultrasonic studies of single crystal plastic deforma-tion in gallium and of amplitude dependence in lead [AFML-TR-67-72] 05 p0730 N68-14992 eld effect measurements on thin single crystal n-nanium chips to determine electronic structure and serties of surface Field effect mean

06 p0892 N68-15021

Cyclic deformation of neutron irradiated copper sin-AERE-R-5595] 06 p0853 N68-15108

Irradiation damage and hardening in single crystal tagnesium oxide after low neutron doses AERE-R-5610] 06 p0857 N68-15109 [AERE-R-5610] Self diffusion of tritium, parallel and perpendicular to optical axis of natural and artificially grown ice [CRREL-RR-232]

06 p0880 N68-15495 rization of high quality sin-ory metal carbides gle crystal growth of refracto [AFML-TR-67-137, PT. 1]

06 p0855 N68-15575 Small angle boundaries, and dislocations in mosaic structure of graphite monocrystals [GCM/UK/A-16] 06 p0791 N68-15700 Growth of calcite single crystals under hydrothermal

[FTD-HT-23-563-67] 06 p0793 N68-15882 Crystallographic orientation effect on shape of fused in transition boundaries studied in p-type gallium ar-

[FTD-HT-23-553-67] 06 p0895 N68-15883 Crystallization techniques for single crystal growth, aterials purification, and structure control of ingots

07 p1065 N68-16383 Growth of large single crystals of hexamethylene tetramine from vapor phase [NRC-TT-1285] 07 p0955 N68-16412

Three dimensional numerical experiments on rare gas atoms scattered from single crystals in silver [NASA-CR-92704] 07 p0984 N68-16482 Alpha and beta bands in lithium fluoride single

(USNRDL-TR-67-136) 07 p1070 N68-17015 Bonding large area silicon single crystals to heat 08 p1221 N68-17239 [NASA-CR-93195]

Adhesion and sliding friction influenced by struc-ture, orientation, and solubility of metal single crystals [NASA-TM-X-52246] 08 p1185 N68-17484 Physical properties of high temperature single crystals of refractory metals [AFCRL-67-0645] 08 p1224 N68-17676

Adsorption on single crystal planes, and device to measure work functions [ARL-67-0198] 08 p1225 N68-17931

Additives effect on wetting and bonding of nickel and nickel alloys to single crystal apphire [PR-6] 09 p1350 N68-18303

Behavior of silicon single crystals and surface barrier anctions under fast neutron irradiation [LYCEN-6756] 09 p1407 N68-18608

Beam alignment techniques developed for infrared aeminitive single crystal germanium to study multiplication effect in photeconductors [NASA-CR-86035] 09 p1410 N68-19129 Magnetic properties of single crystal, hexagonal fer-

09 p1412 N68-19342 Etched, single crystal tungsten tips spot welded on zone refined tungsten wire for improved cathode sources in high resolution electron microscopes [NASA-CR-76628] 09 p1385 N68-19400

Four methods for growth of large single crystals of [PB-176294] 10 p1479 N68-19496

High energy sputtering of zinc single crystals [IBK-435] 10 p1575 N68-19522 High temperature con oxide single crystals ctivity of grown stannic

10 p1576 N68-19688 Electron spin resonance of irradiated organic single crystals 10 p1483 N68-19877

Melt growth, vapor phase growth techniques for single perylene iodine charge transfer [ASE-1748] growth, and solution crystal preparation of ompounds 10 p1485 N68-19970 Angular distribution and yield measurements of single crystal copper sputtered by 1 to 10 keV cesium ions

10 p1578 N68-20039 Single crystal electron emitters [AFCRL-67-0669] 10 p1578 N68-20086

Microwave and optical studies on point defects in skium oxide and strontium oxide single crystals 10 p1579 N68-20150

Electron paramagnetic resonance in single crystals at phase transformations 10 p1582 N68-20505 X SUBJECT INDEX Optical and electro udies, and EPR spo-e crystals of ammon 10 p1582 N68-20506 tal beequent growth rates of single crystal (AFML-TR-67-410) 11 p1770 N68-20808 cathode floating zone e crystals 11 p1702 N68-20826 methods of preparis [AFCRL-68-0004] 95 Einetic study of scintil [UCRL-TRANS-10166] pure organic crystals 11 p1754 N68-21136 of high purity single 11 p1774 N68-21573 nisms in crystal Ever 00 AFML-TR-67-3851 11 p1774 N68-21607 d Faraday effect in fer-mocrystals 11 p1774 N68-21627 82 rite-spinel and ferri gle crystals at low tem-11 p1775 N68-21696 nalysis on transition metal rix least squares method 12 pl 832 N68-22005 12 p1953 N68-22121 12 tics of organic glass 12 p1954 N68-22136 82 cts on nickel surface, am-urface, and work function al planes 12 p1886 N68-22201 measurements on tur [NASA-CR-94332] 15 at 39 NASA-TN-D-45131

08

09

lar ce

75

al

83

ih,

83

re

jle

ic-

ele

to

31

03

08

29

er-

42

on de

00

of

96

22

tic

gle

77

70

39

e and polycrystal-12 p1955 N68-22269 formation of ionic sin-12 p1955 N68-22271 techniques for deter-n Neel temperature of magnetic if 12 p1955 N68-22278 tetrumine crystale

INRC-TT-12841 12 p1956 N68-22441 Growth of tungste modified Czochralski s [COO-1198-501] le monocrystals using 12 p1956 N68-22659 gle crystals 13 p2131 N68-23176

ikali halides 13 p2132 N68-23384 Spin waves in single crystal s voltaic effect in cad m sulfide crystals 13 n2135 N68-23624 elastic constants of

Molecular forces and polyethylene single crystals Electron spin resonan radicals in irradiated crys [COO-1385-21] troscopy for study of 14 p2211 N68-24629

Flux growth of single cryst 14 p2216 N68-25024 Ultrasonic measur of copper single crys earity parameters 14 p2332 N68-25115

opper single crystals 14 p2333 N68-25238 ping due to dislocat um single crystals [NASA-CR-87745] 15 p2479 N68-25707

oelectric transition in im phosphate 15 p2533 N68-25738 of small angle scattering astically deformed cube

15 p2513 N68-25860 15 p2534 N68-25870

tion velocity as 15 p2480 N68-25906

drag coefficient mes-15 p2483 N68-26163 Ultrasonic gr gle crystals 15 p2540 N68-26454

a sputtered from (FTD-HT-67-193) 15 p2540 N68-26480 Hydrogen doping of a design fluorides, and ment of purmagnetic ction of temperature 15 p2541 N68-26624 PADC-TR-68-4)

Optical properties and exide monocrystals with [RRE-TRANS-165] 15 p2543 N68-26708

in hardening of coppe strain and also distribu 16 a2675 N68-27238 edy of structu

16 p2676 N68-27268 ical and man 16 p2688 N68-27372

Chemical vapor deposit crystal lithium ferrite thin! [NASA-CR-86063] oth of epitazial sie 16 p2745 N68-28034 Computer program thermal diffusion of si (AERE-R-5725)

16 p2731 N68-28152 in hardening in single Crystals of coppe 16 p2746 N68-28187 [AERE-R-5647] 16 p2746 N68-28297

17 p2836 N68-28360

prea in a 17 p2952 N68-28376

py in alkali halide single 17 p2954 N68-28465

zinc and cade 17 p2956 N68-28609

wed by re 17 p2958 N68-28815

defects in single crystal calcite a ray, X ray, and neutron irradiation 17 p2958 N68-28866

of direction of surface pld single crystals under gas ions 17 p2945 7668-29551

18 p3148 N68-29588 cy change measured as for classical electron 18 p3149 N68-29605

n of single crystals of Anotropic phase tr cobalt-nickel alloy [AROD-4953-2-MC] 18 p3087 N68-29658 d crystallization of

Morphology of strait polyethylene temphthala 18 p3098 N68-29793 ple crystal measured as gnetic field 18 p3151 N68-29905

(NASA-TN-D-4716) 18 p3080 N68-29918

18 p3154 N68-30333 ee packed motal single

(AFOSR-46-1109) 18 p3096 N68-30728 ion damping in 19 p3346 N68-30893

e and absorption in 19 p3348 N68-30928 que used to examine diffusion on rare pas senon 133 in cosium 19 p3348 N68-30944

ton ecoloning spec-19 p3322 N68-30979

19 p3350 N68-31005

19 p3350 N68-31028

tium oxide in 19 p3352 N68-31173

INASA-CR-95979] 19 p3205 N68-31469

ication of lit 19 p3298 N68-31537

RC-TR-48-10] 19 p3294 N68-31779

nonance of potantism des doped single crystals C-11-13111 19 p3355 N68-31785 med for six

[TR-3] 19 p3355 N68-31825

m milide sing

(TR-24) 20 p3564 N68-32520 of fueed liese sin Enthalpy and specific crystals between 3 deg as [NRC-TT-1303] 609 H68-32792

Magnetic behavio giet crystal field gr 20 p3567 N68-32830

20 p3567 N68-32831

ce angular spectra of trute single crystals 0 p3567 N6E-32833

20 p3567 N68-32840

Energy distribution crystal of terbiam st

ingle crystals of yttrium.

20 p3569 1468-32874

p3571 M68-32886 ck effect of thuli

20 p3571 N68-328 (00-1112-157) 0 p3573 N68-33211

REPT. 898/II/PS)

(LA-DC-9228) 20 p3574 N68-3330

20 p3506 N68-33443

SU

tere

IND

ing o

Sin

DP.

SINUS U S

STREN

Ac

TR-

Mi tion a

(NAS

NT NT NT NT

Env

(NP-I

SITE D

Neutron irradiation effect on plastic deformation iron single crystals with different carbon content hardening data [ORNL-TR-1931] 20 p3506 N68-33444 Magnetic anisotropy in antiferromagnetic chromium single crystals 20 p3575 N68-33458 Electron paramagnetic resonance studies of radia-tion induced defects in single crystals of lithium sulfate [COO-1054-39] 21 p3756 N68-34612 Summary inform ation on single crystal X ray diffrac-22 p3947 N68-34860 Lamellar structure and melting behavior of polyox-ymethylene 22 p3893 N68-34885 Low temperature electronic properties of single crystal epitaxially grown gallium phosphide doped with 22 p3948 N68-34944 Summary data of studies on pressure dependence of elastic constants of single crystals [AD-673265] 22 p3949 N68-35154 Distribution of impuriti es as a function of growth conditions in germanius [FTD-MT-24-341-67] m crystals 22 p3950 N68-35300 Ultrasonic attenuation measurements on single tan-talum crystals at superconducting state [NASA-TN-D-4806] 22 p3950 N68-35356 coments of single Magnetic susceptibility 22 p3951 N68-35459 Fermi surface effect on transport properties of single [LNF-68/41] 22 p3951 N68-35539 Single'crystals of carbides by floating zone technique 22 p3891 N68-35626 INASA-CR-970081 Q switched ruby laser reflectance enhancement of single and polycrystalline semiconductors [SAMSO-TR-68-283] 22 p3952 N68-35955 Strengthening effects of various metallic coatings on copper single crystals 23 p4073 N68-36033 Absorption and fluorescence spectra and crystal field parameters of triply ionized terbium in calcium tungstate [HDL-TR-1377] 23 p4148 N68-36159 Experimental study of diffusion of vacancies and vacancy pairs in single crystals of sodium chloride [COO-1 [97-30] 23 p4148 N68-36206 Hall effect, Seebeck coefficient, and electrical conductivity of single crystal sodium va vanadate 23 p4150 N68-36358 Single crystals of beta-TA205 grown from molten TR-0158/3250-10/-151 23 p4082 N68-36404 Effect of ion impact on single crystals of silicon 23 p4150 N68-36463 Growth of uranium nitride single crystals in nitrogen (UCID-15238, PT. 1) 23 p4101 N68-36600 Thermoluminescence, thermally stimulated current, etical flash, optical quenching, and photoconductivity (cachinium suffide single crystals FTD-HT-67-199] 23 p4152 N68-36709 of cadmium sulfide [FTD-HT-67-199] Effects of surface coatings on plastic deformation of copper single crystals [ORO-3401-3] 23 p4076 N68-36831 23 p4076 N68-36831
Single crystals of lithium fluoride doped with positive iron-3 ions investigated by electron spin resonance and nuclear magnetic resonance methods
[IFA-IS-46] tion of cobalt single crystals 23 p4077 N68-36864 IORNL-TR-18231 Ferrimagnetic single crystal sphere orientation device [TN-1968-16] 23 p4063 N68-36933 Optimal properties of single crystal and sintered ceramic cutting tools for mirror polishing of various material surfaces 23 p4069 N68-36980 Neutron irradiation effects on plantic deformation yield strength of single crystal iron carbon alloys [ORNL-TR-1932] 23 p4079 N68-37097 Summary data on study of tensometric properties of fillform and needle-shaped single crystals of silicon grown through crystallization 23 p4158 N68-37309

[CS-73] [TH/228]

[NRC-TT-1330] SINGLE-PHASE FLOW NASA-TN-D-4149) phase flows RT/ING/68/91 AFC/ [NASA-CR-95101] (ECOM-2946) ECOM-29721 Singular integral equations for linear discontinuou [NASA-TT-F-11492] equations [NASA-CR-94170] and singular integral eq [NASA-TT-F-11553] TR-0158/3307-02/-5] CEA-R-33031 Singularity method for computing incompressible potential flow about thick wing and cascade profiles with tapered trailing edges [RAE-LIB-TRANS-1276] Scattering by repulsive singular patiential with power ngularity in quantum mechanics singularity in quant [FFF-67-22] Treating singular Laplace equations [WPD-77]

Free carrier reflectivity structure of gray tin single crystals ngular solutions of linear partial differenti s for loaded shallow shells with stress n ts and displacement data given 24 p4330 N68-37575 ta given 17 p2980 N68-28759 Error sources in diffractome structure of tartaric acid crystals [BNL-12559] eter measurements on Singularities of n-body problem of celestial 24 p4309 N68-37601 21 p3765 N68-33950 Diffusion kinetics of iron and nickel in single crystals of magnetium oxide Solving singular Cauchy problems using transmuta-tion or integral operators [NOLTR-68-105] 22 p3900 N68-35394 24 p4212 N68-37625 Basal plane shear stress-strain behavior of anisotrop-ic annealed graphite crystals [DOUGLAS PAPER-5139] INKS NT HEAT SINKS 24 p4272 N68-37997 Energy transfer in polymethyl methacrylate with nall amounts of p-terphenyl and nonluminescent aro-natic molecules or sinks X ray analysis of block dimensions in cast [COO-1224-14] 24 p4270 N68-38347 07 p0954 N68-16269 SINTERED ALUMINUM POWDER Film boiling mist flow heat transfer using single Heat conductivity of nuclear materials between 100 and 500 deg C
[EUR-3644.I] 03 p0427 N68-12442 02 p0285 N68-11636 Forced convective heat transfer in single and two Nuclear fuels and materials res 10 p1556 N68-20429 24 p4354 N68-37842 Brazing of alumi trioxide sintered SINGLE SIDEBAND TRANSMISSION reactor cladding material [UCRL-TRANS-10144] 11 p1714 N68-21167 Range of Applications Technology Satellite Single ideband Automatic Frequency Control /ATS SSB Equipment for analyzing behavior of sintered alumin [EUR-3899.E] thermal stress fatigue powder 13 p2074 N68-23650 16 p2623 N68-27542 Aging rate of coldweld sealed quartz crystal resona-ers in single sideband units Fabrication process for sinter products utilizing vacuum hot po ment after extrusion red aluminum powder ressing and heat treatered al 18 p3046 N68-30071 ment after extrusion IORNL-TM-22151 Tetrode for single sideb 20 n3490 N68-33233 d transmission in commer-[EE-TRANS-1756] Computer analysis of burnup for sintered aluminum powder cladded uranium carbide fuel rods [EUR-4031.F] 21 p3724 N68-34359 20 p3435 N68-32443 Mounting technique and electrical properties of sine sideband filter for quartz crystal ECOM-2972] 21 p3661 N68-34424 SINTERING Metal oxide addition effects on pressing and sinter-SINGLE STAGE ROCKET VEHICLES
U AGENA ROCKET VEHICLES
U BLACK BRANT SOUNDING ROCKETS
U BLACK BRANT 2 SOUNDING ROCKET
U BLACK BRANT 3 SOUNDING ROCKET
U BLACK BRANT 3 SOUNDING ROCKET ing of uranium dioxide [WAPD-TRANS-58] 01 p0082 N68-10872 Preparation and si ng of plutonium-beryllium alloy neutron (BARC-294) 03 p0372 N68-12217 BLACK KNIGHT ROCKET VEHICLE DORNIER PARAGLIDER ROCKET VEHICLE HONEST JOHN ROCKET VEHICLE Lime-soda sinte oxides from anorti [BM-RJ-7068] tering process for extracting alumin 05 p0621 N68-14232 LOKI ROCKET VEHICLE VERONIQUE ROCKET VEHICLES Pressing and sintering effects on electrical and ther-mophysical properties of thermoelectric materials oelectric materials 07 p1070 N68-17091 SINGULAR INTEGRAL EQUATIONS Singular integral equations [TG-230-T510] Surface tension effect on sintering rates of silver and 03 p0360 N68-12264 [COO-1587-2] 11 p1712 N68-21001 , and continuous func-Compatibility between si red aluminum products undary problems 06 p0830 N68-16006 and uranium monocar (ORNL-TM-2010) 11 p1713 N68-21031 Approximate solution of system of singular integral Production of shaped articles from sintered calcium 12 p1897 N68-22041 [UCRL-TRANS-101931 11 p1705 N68-21134 Plemel-Privalow theorem results applied to struc-iral properties of Cauchy boundary value problem Superconductive sole and chlorination, diffusi n intense magnetic fields sintering techniques for 19 p3301 N68-31983 [LNF-68/7] 11 p1774 N68-21517 Analyticity of singular integral equation solutions [AD-673550] 24 p4276 N68-37968 [LNF-69/7]
Plastic flow from dislocation motion in sintering or calcium fluoride spheres with zirconia markers 12 p1894 N68-22107 SINGULARITY [MATHEMATICS] ALGOL procedure for computecomposition in least square prob ting singular value Improved technique for extruding and sintering 07 p1013 N68-16280 heryllium oxide [AAEC/TM-401] 12 p1889 N68-22451 Singularity problem in final value control of linear Nuclear activation techn ansport mechanisms durin e for studying details of transport mechan [UCRL-70164] 12 p1841 N68-23015 09 p1317 N68-18458 Determination of apparent dioxide spheroids produced by [AEEW-M-797] density of plutonium intering process 13 p2089 N68-23737 Regge pole model singularities when physical parti-e mass tends to zero 09 p1392 N68-18972 Analyticity properties of two body helicity am-Lead batch composition pellets physical properties ects on pelletizing and 13 p2083 N68-23829 09 p1398 N68-19444 Perturbation method for non intacles Tungsten and molybden fied and vacuum sintered ys for protection from oxi alloy silicide slurry ap-antalum and niobium alinear water waves past 12 p1859 N68-22098 loys for protection fr [NASA-CR-87765] Observable effects of box singularity
12 p1926 N68-22361 15 p2479 N68-25722 nique for fabrication of

13 p1990 N68-24333

16 p2731 N68-28175

e difference solutions of 17 p2863 N68-28372

Ехр SIZE (DI BRL Incre REPT. Tin | Doppler (SR-24) SIZE DET

Fortra

[NASA-CR-95267]

Ceramic thermal protective system and sintered slip ast silicon characteristics for missiles A-994] 16 p2691 N68-27774

Reaction of sintered silver electrode to exidation and eduction

15 p2472 N68-25847

16 p2612 N68-27973

Experimental investigat in helium-4 single crystals

o of behavior of heat pulses

24 p4329 N68-37520

EX

739

stial

1950

394

5269

100

2442

0429

ered

1167

tigue

3650

3233

4359

0872

llium

2217

4232

ther-

7091

1001

ducts

1031

keium

1134

fields es for

1517

ing of

2107

tering

2451

sils of

23015

23737

g and

23829

ry ap-

25722

ion of

25847

ed slip

27774

m and

27973

batte-

28723

Size distribution of hail in atmosphere detected by Doppler radar [SR-24] 19 p3303 N68-31432

SIZE DETERMINATION

NT PRECIPITATION PARTICLE MEASUREMENT

Fortran 4 computer program for calculating and plotting surface erea and pore size distribution data obtained by gas adsorption

04 ±0545 N68-13519

tained by gas adsorption

Shrinkage, thermal conductivity, perosity, and sintering of aluminum oxide for thermal insulation in radioacotope power systems [ALO-363-3] 17 n3004 M48 2011 Minimum radiation shield weight for suclear reactor used as electrical source almand spacecraft [NASA-TT-F-11651] I8 p3114 N68-29922 tric ear size determ Anthropometric ea photometric slides [AMRL-TR-67-203] Preparing high density uran by reaction sintering of uruniu um monocarbide pellets dicarbide and uranium metal powder (BARC-319) Aerosol particle size 18 p3117 N68-30433 (SMRE-TRANS-5432) Relations between powder properties, sintering treatments, and densification and microstructure development in uranium oxide pellets Univariate and multivariate ellets 18 p3117 N68-30474 [BARC-314] Operating characteristics of automatic blowhack system used to remove accumulated powders from sin-tered-metal filters [ANL-7392] 18 pl 112 New 2042-SIZE PERCEPTION
U SPACE PERCEPTION SIZING (SHAPING) Thermal, explosive, and cold sizing of large tubular Zircaloy structures for nuclear core applications [WAPD-TM-620] 03 p0374 N68-12454 Sintering and grain growth of thoria gels 19 p3296 N68-30887 Effect of porosity for sintered uranium dioxide on kinetics of grain growth SIZING SCREENS 19 p3227 N68-31441 Spanwise boundary layer nonuniformity investigated to assess use of gauze screen in wind tunnels [ARC-29271] 06 p0824 N68-15198 Porosity effects on mechanical properties of sintered steels 20 p3497 N68-32572 U MUSCULOSKELETAL SYSTEM Pressure, temperature, and time parameter effects on press and sintering density of metal powder [NJS-R-526] 20 p3487 N68-32718 **SKEWNESS** Analysis of eccentrically stiffened skewed plate structures Volume and grain boundary diffusion during sinter-ing of nickel powders 21 p3703 N68-33968 SKID LANDINGS Fabrication and properties of sintered nickel elec-trodes for space batteries [BMWF-FB-W-68-39] 21 p3627 N68-34301 Dynamic hydroplaning, viscous hydroplaning, and tire tread rubber reversion effects on tire traction on [NASA-TN-D-4406] xide to dense uranium dioxide NT EPITHELIUM DP-10851 22 n3884 N68-35679 SINUSOIDS U SINE WAVES Dose-response relationship for threshold lesions in duced in porcine skin by carbon dioxide laser radiation with varying combinations of power density and expo-SIRENS sure time (AMRL-732) Acoustic signals from modulated liquid flow using sirens applied to underwater acoustics research [TR-10] 19 p3263 N68-31080 Physiological response of SITE DATA PROCESSORS [ORO-3578-2] Mixed integer programming algorithms for site selec-tion and other fixed charge problems having capacity [NADC-MR-6708] [NASA-CR-91906] 06 p0807 N68-15421 STES

NT LANDING SITES

NT LAUNCHING PADS

NT LAUNCHING SITES

NT LUNAR LANDING SITES Environmental engineering and reactor sites for reduction of radiation hazards [NP-16793] Discrete skin cooling effects on body temperature and sweat production during moderate heat stress [AMRL-TR-66-188] 22 p3811 N68-35393 03 p0380 N68-12709 Preshot geologic and engineering properties of pre-Schooner 2 site [PNE-509] Threshold effects and s skin hazard [SC-RR-68-174] Lightweight portable shelters for Tactical Air Com-and hare base /remote site/applications 16 p2786 N68-27943 Clinical and histological studies of effects of high energy electrons on skin and tissue of rabbits [CEA-R-3294] 22 p3814 N68-35897 Expandable shelter/container for bare base applica-Skin radiation docage criteria and description of survey meter BP3 documeter [RD/B/N-1107] 22 p3814 N68-35953 16 p2787 N68-27947 SIZE (DIMENSIONS) Relationship between critical density of heat flow in film boiling of alcohol and water and cylindrical heater size in both vertical and horizontal positions Hemodynamic measurements on human skin capilla-ry flow during exposure to high and low atmospheric nal positions 02 p0287 N68-11690 DLR-FB-68-56] Statistical method for sample size determination to minimize destructive testing costs [BRL-R-1376] 06 p1182 N68-17774 (SC-DC-68-2108) 08 pl182 N68-17774 Size induced engineering problems of large hydrogen KIN ISTRUCTURAL MEMBER Vibration response of Apollo skin structure to convected boundary layer turbulence [NASA-CR-65808] 01 p0137 Nes-10069 08 pl 159 N68-18161 Compressive strength of bonded panels with alu-minum alloy skin [8-122] Increased thermal efficiency and increased Diesel (REPT.-1) 14 p2337 N68-24990 Size measurements and charged beam interactions of ortex rings in helium 2 Structural analysis of stresses and displacements in monolithic, semimonocoque skin panels [AS-68-F-6] 04 p0585 N68-12993 14 p2324 N68-25001 Tin particle size effects on nuclear magnetic sonance and Knight shift in superconductors 16 p2742 N68-27217

IGSF/MC/68-91 21 p3790 N68-34557 SKIN PRICTION

NT AERODYNAMIC DRAG

NT FRICTION DRAG

NT SUPERSONIC DRAG

NT VISCOUS DRAG ion from he 19 p3216 N6E-31454 20 p3535 N68-32457 e of finned, staggered Heat transfer and flow resista anks with fine of different shap e methods for statistical 02 p0290 N68-11747 22 p3913 N68-34817 Immersion shock generator to reduce heat transfer and skin friction in turbulent supersonic boundary INYU-AA-67-106] 04 p0434 N68-13282 Mass transfer effect boundary layer skin fric permeable flat plates on compressible, turbulent tion and on heat transfer in 06 p0830 N68-16035 drag reducing dilute polymer solutions [NSRDC-2502] utions 07 p0989 N68-17107 Tables of values to dete transfer, and laminar bounds ters for reentry vehicles [RM-5089-ARPA] 12 p1858 N68-21996 Measurement of skin friction by razor binds technique [ARC-R&M-3525] 14 p2181 N68-24792 11 p1791 N68-20635 rements of skin friction on slender itot tubes Low speed mean (ARC-RAM-3499) 14 p2181 N68-24858 Skin friction and heat transfer rate in hypersonic tur-ulent boundary layer flow over flat plates and cold ozale walls. 10 p1457 N68-19620 [NASA-CR-82425] 16 p2644 N68-27527 Higher ship speeds resulting from reduction of skin friction drag due to injection of nonNewtonian addi-tives in water 16 p2647 N68-27686 01 p0010 N68-10273 m drag bodies of given natraints 18 p2994 N68-29795 human skin to ultraviolet 01 p0010 N68-10435 Nonuniform wall temperature effects on skin friction id heat transfer in laminar compressible boundary Mathematical model of skin exposed to thermal ARC-295091 18 p3063 N68-30561 02 p0165 N68-11212 Quantitative analysis of solar radiation absorption by errebe ate tissue using spectrophotometric technique 13 p1997 N68-23083 Analysis of skin friction decrease in dilute polymer 20 p3458 N68-32331 Logarithmic and defect velocity profile analyses for total skin friction formula of turbulent boundary layer [NPL-AERO-1252] 21 p3680 N68-34010 Thermal sensitivity under conditions of induced assembler states in skin 14 p2202 N68-25462 OPL-AERO-1252]
Determination of turbulent skin friction
22 p3858 N68-35192 Measurement of skin friction in supersonic flow by means of heated thin film gages [ARC-R&M-3490] 22 p3861 N68-33475 old effects and safety levels of laser eye and 22 p3861 N68-35475 22 p3813 N68-35669 Experimental study of turbulent boundary layer flow nder influence of adverse pressure gradients typical of ypersonic inlets using two dimensional and axisym-ICAL-AF-2389-Y-31 22 p3864 N68-35964 Kinetic energy integral equation for deriving incom-pressible laminar skin friction have of boundary layer [AFOSR-68-171] 23 pe0de 1962-36397 Increasing delta wing hypersonic lift drag ratio by reducing skin friction with wing skop. [ARA-92, PT. 2] 23 p3985 N68-36608 24 p4203 N68-37988 Evaluation method for laser beam hazard to eyes and Incompressible laminar boundary layer past elliptical bodies - extension of skin friction law to elliptical cylin-ders and ellipsoids (APOSR-68-1744) 24 p4248 N68-38312 24 p4204 N68-38178 SKIN FRICTION DRAG SKIN TEMPERATURE (BIOLOGY) litions of induced Thermal sensitivity under cond 02 p0278 N68-11702 14 p2202 N68-25462 Time sequence of perspiration and skin temperature in various regions of human body exposed to infrared [A3-68-7-6] 04 p0383 N68-12993 Destructive testing for study of fatigue crack nuclei in tension skins of wing center section [NLR-TN-S.657] 13 p2162 N68-24038 [NASA-CR-94963] 15 p2392 N68-26172 Finger tip skin temperature measurement in male and female during immersion in cold water to licite higher incidence of Raynauds disease in females than [NLK-IN-3.057]
Inplane edge restraint effect on vibration and flutter of slightly curved panels in supersonic flight
16 p2779 N68-27630 [NASA-TT-F-11790] Pre-pressure resistance spot welding of stainlass steel fuel tank
[S&T-MEMO-9/67] 18 p3082 N68-30769 Heart rate, ventilation rate, and atin temperature in resting human beings before and after food intake [AMRL-TR-67-228] 18 p.3010 N68-30361 Temperature seming suit for skin temperature meaed by pressure fluctua-

18 p3004 N68-30822

21 p3639 N68-34009

23 p4002 N68-36442

Lift on aer Con of sligh (NOL Hyp Lift INAS/ Dyn.

> [NASA App [NASA Hype one to NOLT Varie INASA

Near two Res [PIBAL Hyper iar cone SLENDEI NT IN Takes sonic tr pitch at ARC-B Scale for Han [ARC-F

Unste

Num over sle [PIBAL

Dyna ARC-R Low s ARC-R

Wing AGAR SLIDING (Effect of bolted of bolted SLIDING I

Static NAA-S Lubric (NASA-

Wear a rated and ture, orie Brush of for high c Tempe

SKIN TEMPERATURE [NON-BIOLOGICAL] Effect of incomplete energy accommodation of free molecule recovery temperature [TR-0158/3240-20/-1] (R-1667) 03 p0335 N68-12098 SKYLARK ROCKET VEHICLE

Reentry temperatures or free molecule and cor res of low heat capacity structures continuum flow for free molecule (SC-RR-47-232) 08 p1254 N68-17254 Equilibrium skin temperatures on wedge surface for sminer and turbulent boundary layers at hypersonic (RAE-TR-67114) 09 p1447 N68-18403

correlation for seaplane water takeoff and landi (REFT.-7489-2) ology 21 p3622 N68-33675 SKULL

my of vascular routes 17 p2823 N68-29145

NT NIGHT SKY etric measurements of twilight sky in-

13 p2063 N68-24079

SKY BRIGHTNESS

(ISL-11/66) 07 p0995 N68-16166 nts of horizon sky 08 pl 169 N68-17659 [NRL-6615]

Proposed design of Skylark sounding rocket photometer for measuring sky luminance generated by acollocal light and integrated startight [RAE-TR-67168] 10 p1532 N68-20495 ction, twilight, skylight, tal light ects of at

and Milky Way on axis of a [NASA-TT-F-11532] 12 p1967 N68-22378

Space and time varie in light intensity of twilight [NASA-TT-F-11572] 14 p2345 N68-24820

Photometric me [PUBL.-60] night sky brightness 14 p2345 N68-24846 Night sky brightness and light measured by OSO-2 satel olarization of zodiacal e and balloons 16 p2758 N68-27477

Brightness of zodiacal light and o 16 p2759 N68-27481

Five-color observation of plaritation of night sky rad ness and state of 16 p2759 N68-27485

improved calibration of opti-sky light during climbing flights [T-2/67] al measuring devices of

18 p3077 N68-30436 d cover and brightness [REPT.-08203-2-T] 20 p3522 N68-32757

(FTD-MT-24-279-67) 24 p4251 N68-37970

SEY RABIATION

NT AIRGLOW

NT DAYGLOW

NT GEOCORONAL EMISSIONS

NT NIGHTGLOW

NT TWILIGHT GLOW

Diffuse dayglow data ev mosphere missile observation [ISL-6/66, PT. 2] on for upper at-07 p0989 N68-16151

Upper atm ding rocket data en diffuse sky radiation (ISL-T-22/66, PT. 3)

07 p0990 N68-16154

Optical equipment to mea tribution of sun and sky radiat [RAE-TR-67248] re spectral energy dis-14 p2192 N68-24970

emission, polarization, reflection, and scat-stral distribution of aky radiation 18 p3068 N68-30384

Infrared sky radia nce under clear and cirrus overcast 24 p4279 N68-37684

Sky radiation effects on output of solar cells at 80,000 feet [NASA-CR-97348] 24 p4199 N68-37748

MY WAVES

effect on ground waves or iono Sky waves and no tion in F region NELC-1526 U A-4 AIRCRAFT

18 p3033 N68-29744

SKYHOOK BALLOOMS

Flight data for twenty-three Skyhook balloon 04 p0443 N68-13292

Proposed design of Skylark hotometer for measuring sky lumi sounding rocket sance generated by minance glight 10 p1532 N68-20495 on Skylark zodincal light and (RAE-TR-67168) conducted on Skylark

Celestial X ray exprocket flights (ADP-50) 19 p3273 N68-31728 Progress in ESRO sounding r gram, and Skylark and Dragon r

g rocket and satellite pro-m rocket launchings 21 p3777 N68-34066

Least squares method of determining Skylark rocket attitudes in free space [RAE-TR-67319] 21 p3777 N68-34133

SL-3 ROCKET ENGINE Manufacture and firing test results for large proto-type solid rocket motor [NASA-TM-X-61238] 21 p3760 N68-34724 21 p3760 N68-34725

Approximate solution for neutron transport in infinite homogeneous slabs with finite thickness (EUR-3620.E) 01 p0101 N68-10024 Electron photo dent on semi-inf induced by photons in-

[NASA-CR-92578] 06 p0884 N68-15367 on of micro dent on plasma slab 14 p2325 N68-25036 [NP-17343]

Dielectric slab model for electromagnetic wave 14 p2250 N68-25192

for problems of tension 18 p3179 N68-30312

SEACS

rements of titaniferous uirements in smelting ites or ores 06 p0789 N68-15535 slags for determin ng flux requ tituniferous mag

SLANT U SLOPES

SLANT PERCEPTION
U SPACE PERCEPTION

SLATER ORBITALS

Hartree approximation Slater orbitals of atoms fields

17 p2954 N68-28490 Total energy estimation of beryllium hydride molecule by using orbital, self consistent fields, and correlation energies

18 p3129 N68-29904 Excited states of lithium hydride studied by atomic Slater-type orbitals

22 p3823 N68-35216

SLEDS U ROCKET PROPELLED SLEDS

NT HYPNOSIS

Inflight electroencephalogram of Gemini 7 pilot to study sleep cycles and weightlesaness effect on electri-cal activity of brain

01 p0008 N68-10188 s in human body activi-

04 p0455 N68-13195 ectrosleep and electr et clinical experiences rsia theories, and

08 p1129 N68-17682 Norspinephrine and ser n effects on sleep, alert-

14 p2198 N68-24867 Astronaut sleep requ ts during manned space 14 p2199 N68-24877

Amobarbital and pituitary hormones for sleep pro-lungation of mice under space flight streta 21 p3632 N68-33911

SLEEP DEPRIVATION n on subject - EEG, task

Effects of sleep deprivation on subject - EEG, task performance and phychological responses. [SAM-TR-67-59] 02 p0164 N68-11050 Effects of work-rest cycles as crew performance during orbit (SAM-TR-67-99) ed sleep deprivation on 11 p1639 N68-20743 Effects of sleep deprivier stimulation in humans [USAMRL-766] on responses to vestibu-

13 p2000 N68-23619

Methods used in studies of normal sleep and effects of drug induced sleep on visual alertness 14 p2198 N68-24865

Effects of hypnotic sedatives on quality of sleep, round characteristics, and psychophysiological per-cenance of humans and effects on visual acuity test 14 p2198 N68-24866

Awakening and startle effects of simulated so [NASA-CR-1193] 20 p3407 N64-33005 Data processing proocedures for analysis of electroen-cings from sleep deprivation stu-

[MDC-TR-67-106] SLEEVES

Sleeve bearings of DU material consisting of this rouse spheres lining surrounded by mixture of TFE sorocarbon plastic and lead sintered on tin plated steel backing [NASA-CR-91774]

05 p0670 N68-14972 ess steel hydraulic tubing sleeve assembly [NADC-MA-6732] 11 p1702 N68-20839

SLENDER BODIES

Slender body theory for lift-drag calculations on otta wing-cone configurations having subsonic leading [VTH-141] 02 p0158 N68-11706 Motion of sk depth tank of equation der body of revolution in variable compressible fluid using Laplaces

06 p0825 N68-15284 wind tunnel tests to study vor-er bodies of elliptic cross section

[MIT-TR-138] 06 p0763 N68-15685 Inertia cross coupling, liftoff, cross wind, and tail ust effects on slender aircraft dynamics and flying

08 p1108 N68-17441 Acoustic theory used to calculate supersonic flow past slender bodies of revolution at small angle of at-tack [DLR-FB-68-03] 10 p1456 N68-20090

thod using nonlinear differential ting hypersonic flow of ideal gas

11 p1745 N68-20902

Analytical theory for calculating second order cor-ctions to lift distribution for unsteady subsonic flow 12 p1810 N68-22082

per for spinning or non-spheric entry bodies 13 p2155 N68-23669 (NASA-CR-94580) m for aeroelastic FORTRAN com

evaluation of slender r [WRE-TN-HSA-128] 17 p2802 N68-28753 Compressible lamin sidered for hypersonic [NASA-CR-93768] lary layer equations con-und slender bodies 17 p2803 N68-29173

Slender two dimen bodies of minimum wave

drag in nonequilibrium supers: [NASA-TT-F-11803] ic flow 18 p2998 N68-30388 Hypersonic viscous flow over siender bodies with sarp leading edges 20 p3458 N68-32278

Wake flow properties behind two dimensional 20 p3391 N68-32333

Nonlinear lift an conical bodies with a [NASA-CR-1202] distribution of slender low speed 23 p3986 N68-37255 Aerodynamic force measurements on slender two imensional wedge in hypersonic viscous interaction

TR-0158/3240-10/-12] 24 p4194 N68-38110 SLENDER CONES

Free flight serodynamicone at hypersonic speeds [NASA-TN-D-4245] aracteristics of slender 01 p0002 N68-10380 Aerodynamic effect of incidence angle on flow ound slender comes with sharp and blunt edges. 01 p0053 N68-10978

Flow around blunt, slender cones performing pitching oscillations analyzed by means of Chernyys blast wave piston analogy 07 p0933 N68-16385 cal aspects of manu-rp conical body 09 p1265 N68-18440

Lift to drag ratios of slander, conical bodies flying at hypersonic speeds, and effects of geometric parameters on aerodynamic stability [NASA-CR-66572] 09 p1267 N68-18830 Analysis and design of elliptically polarized, cavity backed crossed-slot unterma [NASA-CR-95939] 19 p3237 N68-31264 Crystal structure and orientation, and solubility effects on adhesion and sliding friction of four metal single crystals in vacuum [NASA-TM-X-6090] 16 p2680 N68-27612 a near zone field - a Plasma effects in an ittance and ionization stomic ordering on wear Teffon-plugged waveguide slot [NASA-CR-1149] Crystal transformat and sliding friction in [NASA-TN-D-4668] Computer program for ca of slightly blunted slender cor (NOLTR-68-3) lating drag coefficient alloys 16 p2672 N68-28260 20 p3438 N68-33042 11 p1621 N68-21672 sorbed surfactants on coefficient of i ot airborne antenna for Hypersonic flow aroun [PIBAL-1031] er come 11 p1686 N68-21698 ce on deformation and Suoride single crystals 22 p3835 N68-35419 by slender conical bodies at during sliding friction [NASA-TN-D-4716] Lift drag ratio attai 18 p3080 N68-29918 ng 707-satellite commu hypersonic speeds [NASA-CR-66628] 13 p1988 N68-23660 Stochastic model for transients in sliding cont [AFML-TR-67-346] surface temperature fD6-230891 nder elastic body of varia-tions 14 p2358 N68-25118 Dynamic properties of slee le mass under high accelerat 23 p4018 N68-36296 19 p3385 N68-31400 SLOTS Electromagnetic scattering behavior of metallic phere loaded with circumferential slot in plane per-endicular to direction of incidence Metal oxide effects on fri Symmetric flow over thin generalized axisymmetric conical bodies in supersonic inviscid gas stream [NASA-TT-F-11693] 15 p2380 N68-25882 ICE-TRANS-47431 20 m3486 N68-32556 14 p2299 N68-25114 Sliding friction of o sed sintered material Slotted stial flow compressor rotor and slotted stator tests of slot effect on performance of highly loaded blades Application of method of characteristics to calcula-ons of nonequilibrium supersonic air flow past 22 p3881 N68-34844 SLIP INASA-TT-F-116911 15 p2380 N68-25883 [NASA-CR-54553] 21 p3619 N68-34398 ard slip during rolling of porous strip from powders - evaluation of chromium-nickel stain-Hypersonic wind tunnel pitch damping of slender cone to evaluate water cooled pitch damping support al powders - evaluation steels and Sulinsk iron p SLOTTED ANTENNAS ers 20 p3491 N68-33337 system [NOLTR-68-4] SLOTTED WIND TUNNELS 15 p2449 N68-26713 SLIP BANDS
U EDGE DISLOCATIONS heory of interference effects on dynamic measure-nts in slotted wall tunnels at subsonic speeds and Variational calculus used in obtaining lift drag ratio tainable by slender conical body at hypersonic speeds SLIP CASTING comparisons with er [ARC-R&M-3500] 20 p3394 N68-33451 14 p2235 N6E-24818 INASA-CR-11561 Ceramic thermal protective system and sintered slip ant silicon characteristics for missiles tric flow equation of attack of subsonic cargo jet colc wind turnel 22 p3800 N68-35617 Numerical solutions for axisymmetric flow equations over slender sharp nose cones at zero angle of attack [PIBAL-68-17] 24 p4194 N68-38027 Aerodynamic chart transport model in slot [NASA-TM-X-1660] 16 p2691 N68-27774 Characterization parameters and equipment specifi-cations on fused silica slips for test radomes [GIT-A-994-2] 22 p3895 N68-35398 Near wake of slender cone at large angle of attack at to Reynolds numbers SLOW NEUTRONS
U THERMAL NEUTRONS [PIBAL-68-23] 24 p4195 N68-38360 SLIP FLOW SLUBBUES Thermodynamics and fluid dynamics of saturated water flow discharge from ducts [AEC-TR-6928] 12 p1863 N68-22790 Rheological study of viscosities and pipeline flow of incentrated slurries Hypersonic aerodynamic r cones at high incidence ic flow around slender circu-24 p4196 N68-38483 18 p3059 N68-29804 Axisymmetric viscous interaction with rmall surface slip and transverse curvature effects for Francti 0.723 and for helium on unyawed cone [E-67-13] MAR 3430-SLENDER WINGS NT INFINITE SPAN WINGS MALL IS Slush hydrogen fluid characterization and instru Takeoff behavior calculations of sien sonic transport design constrained to fi pitch attitude time history [ARC-R&M-3493] 03 p03 tation analysis [NASA-CR-94132] 11 p1779 N68-21735 SLIPSTREA Hydrogen shash density instrumentation for field measurements of slush mass after calibration with reference system 03 p0301 N68-12447 PROPELLER SLIPSTREAMS Scale model wind tunnel tests of slender wing design Slipping blade stall analysis for axial flow com for Handley-Page aircraft [ARC-R&M-3486] 18 p3078 N64-30626 03 p0297 N68-12460 15 p2381 N68-26472 [FTD-MT-24-175-67] SLV (SOFT LANDING VEHICLES)
U SOFT LANDING SPACECRAFT Unsteady motion of thin symmetrical wings with low apect ratio Axial slit effects on residual tensile strengths of polyethylene terephthalate film and fabric cylindrical shells [L-5483] M-45 MISSILE U ATLAS LAUNCH VEHICLES 04 p0435 N68-13334 Dynamic tests on free-flying models of slender wings shiected to side gusts SMALL PERTURBATION FLOW (ARC-R&M-3460) 12 p1809 N68-21908 Stability of solutions for relaxed gas flow, wind tu-nel studies of flow in isentropic equilibrium and stability ty problems, and linear and other theories for treatly stability. Iterative solution for calculating deformation and stress concentration near slits in elastic-plastic solids [NASA-TN-D-4717] 18 p3177 N68-30045 Low speed measurements of wing using surface pitot tubes [ARC-R&M-3499] ts of skin friction on slender 14 p2181 N68-24858 Deformation and stress calculation programs for three dimensional elastic plastic solids with slits [NASA-TM-X-52440] 21 p3788 N68-34049 Flight testing of slender wing, low speed aircraft to stermine aerodynamic characteristics and stability trivatives 01 p0049 N68-10114 Functional analysis on oscillating amplitude of super-sonic velocity field excited by wing vibrations [NASA-CR-97259] 23 p4184 N68-37386 Filter evaluation for solar observation transits in solar right ascension determinations 15 p2387 N68-26705 Interference effects of leading edge eddies on lifting informance of slender Delta wings 23 p3985 N68-36982 23 p4168 N68-36494 Smoke emission from gas turbine engines 08 p1261 N68-17397 Wing and cone calibration models for aerodynamic stability tests [AGARD-563] 24 p4193 N68-27742 GLIDE PATHS Gas absorption into smooth and wavy thin laminar quid films falling down inclined planes 1 p1682 N68-20700 ng and smold woods and plasti [UCRL-70794] 13 p2166 N68-23106 SLIDING CONTACT Analytical methods for stability of crater slopes [5-68-8] 24 p4255 N68-38437 cleation me soled potass timulation theory of su-er iodide mixed amoke Effects of oversized, or slotted holes on slip behavior of bolted joints [REPT.-318.3] 10 p1601 N68-19514 SLOSHING U LIQUID SLOSHING NAD-CR-RDTR-112] 18 p3023 N68-30170 g and smoldering air-SLIDING FRICTION SLOT ANTENNAS Static and sliding contact behavior of materials in dium environments at high temperatures craft interior ani-omnidirectional resonant array of circum-tial abunt slots in ring waveguides for narrow width space vehicle applications at microwave 21 p3626 N68-34364 05 p0675 N68-14488 [NAA-SR-12446] MOKE TRAILS Lubrication of sliding and rolling element electric Wind profiles and shear derived from rocket amoke NASA-TN-D-4362] (NASA-TM-X-52382) 09 p1303 N68-18616 07 p1003 N68-16665 04 p0501 N68-13591 cited coaxial antenna with Wesr and antifriction properties of sintered low car-on steel, stainless steel, bronze, and nickel unsatu-nted and vacuum saturated with Teflon mittance of wedge o Wind velocity profiles measured by smoke trail method at Wallops Island, Va., in 1963 and 1964 [NASA-TN-D-4365] 07 p1020 N68-17024 15 p2424 N68-25995 Dieletric clad axial slot antenn [NASA-CR-1057] 07 p1012 N68-16894 rated and vacuum sat (FTD-HT-67-251) 15 p2429 N68-26621 Adhesion and sliding fri ture, orientation, and solubi [NASA-TM-X-52246] n influenced by struc-of metal single crystals 08 p1185 N68-17484 Plasma sheath effect on reentry communication ystem with slot antennas NASA-TM-X-59087] 16 p2623 N68-27547 16 p2700 N68-27053 Smoke trail rocket techs surements to 3000 feet (PUBL:-132) e for daytime wind mea-Brush design, requirement for high current homopolar gr [EP-RR-3] and experimental data diation patterns and sear on antenna performance 17 p2852 N68-29104 Methods for evaluating ri field effects of plasma sheath 09 p1274 N68-18551
Temperature, voltage drop, and dynamic stability
measured on Canberra homopolar generator with two
tobrs connected in series
[EP-RR-7] 16 p2700 N68-27131 MOOTHING NT. DATA SMOOTHING I NAME Lossless isotropic plasma effect on waveguide slot dmittance using plasma simulation technique othed random variable 02 p0229 N68-11505

Variance of increa

ion technique 18 p3145 N68-30547

[AFCRL-68-0152]

SUBJ NA-

Me

Tra cal at [MW

The

SAC

Me ty of i

Loc Thule [RR-2

Mic and s

SGD

вы

CRR

NOW A

SNOW /

SNOW S

SNOWP

SOAPS

Effe

Thic

rolling

(FTD-

SOCIAL

Lon tific-te [JPRS

Payo

IMAS/

Soci ternati craft n [INC/0

Mati of soci [TUB-

Effe

TR-4

Publi techno and po-ment

Tran

App

Job 1

[NASA

[NASA

Argu social is [REPT

Inolar rangem consultic [NASA

Psyci

Work

SOCIAL

US

Mathematically fitting smooth profiles through nu-merous points under several conditions by use of arcs, arcs of second degree curves, and integral-graphical Performance tests and systems analysis of SNAP 2 reactor in operational environments [NAA-SR-[2186] 21 p3726 N68-34578 Electrochemical corrosion rate measurements on galvanically coupled SNAP 21 materials in sea water [USNRDL-TR-68-26] 15 p2484 N68-26411 Mercury corrosion product problem in SNAP 2 tur-boalternator /CRU V/ test system [TRW-690-33] 21 p3727 N68-34637 Component design and testing for deep sea radioinotope-fueled thermoelectric generator power supply system - SNAP 21 [MMM-3691-26] 15 p2506 N68-26947 09 p1362 N68-18680 Obstruction theories for smoothing piecewise, linear SNAP 8 09 p1364 N68-19115 SNAP 23 Contaminant controls and cleaning procedures in SNAP-8 simulation loop of liquid metals [NASA-TM-X-1432] 03 p0349 N68-11912 Stable amouthings of n-dimensional topological manifolds without boundary Engineering and design data on thermoelectric converter for SNAP-23A, and project management plams [MMM-3824-0009] 03 p0369 N68-12058 12 p1897 N68-22101 SNAP 8 simulator using primary sodium-potassium loop, mercury loop operating on Rankine cycle, and heat rejection sodium-potassium loop (NASA-TM-X-1515) 9 p1322 N68-18460 Filtering and smoothing solutions for continuous and discrete time processes in white noise derived from Wold-Kolmogoroff approach to linear least squares ap-SNAP 23A post-test and [MMM-3824-0002, V. 2] SNAP 23A post-test and [MMM-3824-0002, V. 1] SU-SEL-68-0071 or facility instr 16 p2617 N68-26975 SNAP 8 simulator fa [NASA-TM-X-1525] 09 p1343 N68-19001 Smoothed or noncausal estimation of second-order process in white noise determined by results of linear filtering of lumped process Primary loop transients during startup of Rankine cycle space power system in SNAP 8 simulator [NASA-TN-D-4546] 12 p1819 N68-22257 SNAP 23A project manager systems engineering and develo component testing, and safety an [WANL-3800-9] 16 p2617 N68-26977 High temperature radiation resistant rotary actuators for SNAP 8 control system
[NAA-SR-12605]
12 p1821 N68-22934 Amplitude responses as functions of wavelength for smoothing filters in meteorological fields [AD-669140] 16 p2700 N68-27108 Systems engineering, materials and component test-g, and safety analysis for SNAP 23A power supply for temetering oceanographic and meteorological buoy WANL-3800-4] 12 p1908 N68-22718 Deficiency index of second and third boundary value problems for elliptic differential operator in domain with piecewise-amooth boundary Effects of nuclear radiation on performance of diodes for use in SNAP 8 [NASA-TN-D-4620] 15 p2437 N68-26662 SNAP 23A thermoelectric converter development 16 p2695 N68-27262 Destructive and nondestructive tests on tantalum ustenitic bimetallic tubing for SNAP 8 boiler system NASA-CR-72394] 16 p2667 N68-27332 [MMM-3824-0013] Practical technique for estimating general regression [NASA-CR-72394] surfaces [LMSC-6-79-68-6] SNAP 23A thermoelectric converter development [MMM-3824-0017] 14 p2191 N68-24624 17 p2906 N68-29513 Hydrogen permeation through SNAP 8 fuel element cladding assemblies [NAA-SR-MEMO-12425] 17 p2916 N68-28975 Variance of increasingly sme applicable to atmospheric pollu oothed random variable SNAP 23A thermoelectric com [MMM-3824-0020] 17 p2916 N68-28975 tion studies 24 p4288 N68-38408 Development and testing of double containment tan-lum-stainless steel mercury boiler for SNAP 8 space SNAP 27 SNAP 27 program developments into ALSEP pro-Refrigeration and constricting band for early treatment of pit viper anakebite [NASA-TM-X-58019] 17 p2820 N68-28686 19 p3309 N68-31043 NASA-TM-X-52452] GEMS-4001 SNAP-8 systems design criteria, and assessment of najor components comprising power conversion Performance data on ingradient resistance and voltage characteristics of SNAP 27 n- and p-type ther-SNAKING U LATERAL OSCILLATION system [NASA-TM-X-52464] moelectric legs [MMM-8406-1757, V. 1, PT. 2] 24 p4293 N68-37481 19 p3309 N68-31164 SNAP
NT SPACE POWER UNIT REACTORS Test of temperature switch used for SNAP 8 reactor Design and operational test data on SNAP, and nuclear reactor, conversion equipment, and spacecraft power systems technology Thermoelastic properties, quality control, variance analysis, and description of test specimens of SNAP nand p-type thermoelastic less [MMM-8406-1757, V. 1, PT. 1] 24 p4293 N68-37527 19 p3314 N68-32111 [NAA-SR-12038] SNAP 8 35 kW nuclear electric space power system [NASA-TM-X-61161] 20 p3532 N68-33238 03 p0371 N68-12191 Development and testing of alternator assembly, pump motor, boiler, condemer, and electrical control for SNAP 8 space power system [NASA-CR-72103] 22 p3910 N68-35068 Monte Carlo method for calculating fast neutron leakage from SNAP reactor [NAA-SR-MEMO-12184] 04 p0542 N68-13900 SNAP 29 Food and air moving through irradiated environment to man, and calculation of dose probability and mag-nitude for SNAP 19 and SNAP 29 [SC-CR-66-2144] 04 p0538 N68-13082 Thermal diffusivity, heat capacity, thermal conduc-vity, and electrical resistivity of SNAP fuel materials NAA-SR-11959] 05 p0753 N68-14096 SNAP 9A tivity, and electrica [NAA-SR-11959] Measuring plutonium 238 radioactive space debris particle density resulting from SNAP 9A satellite failure Secondary gamma ray transport characteristics in asymmetric SNAP shields [K-DP-2623] 08 p1200 N68-17225 SNAP 50 failure [TLW-6006] Verification experiments for prediction of per-formance and operating characteristics of nuclear space power alternators [SAN-679-7] 17 p2815 N68-29062 21 p3744 N68-34586 08 p1200 N68-17225 Soil burial tests of full scale, electrically heated, simulated SNAP-27 fuel capsules [SC-DR-67-716] 09 p1379 N68-19269 SNAP 10A Disassembly and component examination of SNAP 10A FS-3 following 10,000 hr test operation in space SNAFTRAN BEACTOR Isotopic power source development, metallographic analysis, Rover rocket nozzle materials, and thermonuclear projects SNAPTRAN program to provide nuclear safety data n rapid transient behavior of zirconium-hydride [NAA-SR-12504] 07 p1023 N68-16144 on rapid tra Calibration of SNAP 10A magnetic pump as flowme-(IDO-17204) 10 p1556 N68-20431 [ORNL-TM-2073] 16 p2706 N68-28073 Transport-theory angular quadrature coefficients for SNAP reactor analysis [NAA-SR-MEMO-12592] 11 p1740 N68-21092 SNATCHING SPACECRAFT RECOVERY Ultras onic tests for monitoring SNAP 15 weld SNELLS LAW SNAP development for electric power sources in Mathematical analysis of statistical magnifications of onic booms by atmosphere BNWL-5291 11 p1739 N68-20983 [SC-DC-67-2119] 12 p1911 N68-22898 Radiological safety studies of space nuclear systems hased on intact and dispersed reservy modes of SNAP units using Po-210, Pm-147, Pu-238, Sr-90, and Tm-171 - biplopical models. Food and air moving through irradiated environment to man, and calculation of dose probability and mag-nitude for SNAP 19 and SNAP 29 (SC-CR-66-2144) 04 p0538 N68.13092 Heating equipment for clearing snow and ice deposits from Tacan monitor antenna faceplates [FAA-RD-67-6] 01 p0046 N68-10347 171 - biological mo (SC-CR-67-2729) 04 p0538 N68-13082 16 p2708 N68-28162 Subcritical neutron multiplication determine with SNAP 19C-2 heat sources containing plutonium 238 [MLM-1416/DEL-1/] 07 p1029 N68-16579 Aerothermodynamic analysis of serodynamic heat-ing increase of SNAP 27 graphite lunar module fuel cask during reentry from Ti mounting structure [8C-RR-67-2961] 17 p2918 N68-29456 Shock transmission through ice and snow [TR-1-794] 02 p0206 N68-11388 Energy distribution and absolute magnitude of neutron and gamma radiation emitted from SNAP 19 fuel capsules and assembled generator subsystems [MND-3607-173] 11 p1743 N68-21803

09 p1374 N68-18563 09 p1375 N68-18568 ement, quality control, lopment, materials and malvair 12 p1908 N68-22714 12 p1820 N68-22840 nverter development 21 p3728 N68-34747 22 p3911 N68-35699 17 p2815 N68-29062 03 p0372 N68-12202 15 p2383 N68-25759 Comparative study of empirical and mathematical approaches to obtain density, temperature and compressive strength of polar anow 02 p0208 N68-11768 Washout coefficients for silver iodide particles in

03 p0366 N68-12670

07 p0989 N68-16119

07 p1017 N68-16552

NWL-SA-798] Cloud seeding for anow using silver iodide catalyst 05 p0685 N68-14273

Ice, snow, and frozen soil for construction of per-

Synoptic procedures for snow forecasting in central United States [PB-175804] 07 p1016 N68-16177

Vapor diffusion, energy balance, and variations of evaporation over water, see, and snow for evaporation rate determinations

[SC-CR-68-3532] 22 p3871 N68-35583 SNAP 2

Summary of mercury boiler development on SNAP 2/ Mercury Rankine Power Conversion Program [TRW-690-32] 20 p3530 N68-32780

Radioactive isotopes as sources of heat and radiation ith applications for spacecraft power and propulsion and terrestrial uses in SNAP

New design and materials requirements for achieving absorption and scattering cross section specifications of future zirconium hydride SNAP reactors [AFAEC-MEMO-12673] 21 p3727 N68-34596

Ocean diffusion models for predicting radioactive concentration levels associated with accidental release from isotopic heat sources for future use in SNAP

18 p3026 N68-30262

21 p3727 N68-34596

Performance and reliability to system for SNAP 19 with interfa [MND-3607-239-1, V. 1] testing of power supply faces for Nimbus B 24 p4297 N68-38006

SNAP 19 thermoelectric generator technology

n experience 19 p3374 N68-32087

24 p4297 N68-37951

CRREL-SR-115)

light snow and rain [BNWL-SA-798]

(NRC-TT-1267)

SNAP-19/Nimbus B in [NASA-TM-X-63300]

[MND-3607-239-3, V. 3]

Deep sea radioisotope fueled thermoelectric genera-tor power supply system design [MfdM-3691-20] 02 p0237 N68-11382

A-1140

SUBJECT INDEX Weather effects on VHF omnirange navigation monitor detectors [NA-67-10] 07 p0998 N68-16713 Methods and data collection for predicting winter precipitation in eastern United States [TR-67-4] 07 p1020 N68-16906 eter for mowfall measurement by opti-Transmi cal attenua (MW-51) 07 p0993 N68-17132 Thermal conductivity of vapor grown pseudodendric sow crystals at minus 88, 27, and 5 deg C in steady SOCIOLOGY NT SOCIAL FACTORS 09 p1450 N68-19016 Mechanical properties of snow and ice, and feasibility of ice and runway construction
[CRREL-TR-176] 11 p1679 N68-20802 Local and regional se hule Peninsula, Greenla cumulation studies on Thule Peni [RR-238] 15 p2461 N68-26307 Microwave emission characteristics of snow, soils, ad snow-ice-water systems, and correlation with soil Personal relations and com groups, physiological and psy conformity, and methodology ([AD-664256] moisture conti [SGD-829-6] 18 p3070 N68-30647 nt of snowfall by meteorological radar 20 p3518 N68-32293 Bibliography and abstracts of research on snow and the conditions in polar regions CRREL-12] 22 p3868 N68-35240 (CRREL-12) SNOW AERIAL APPLICATOR AIRCRAFT S-28 S-2 AIRCRAFT NOW AIRCRAFT
U S-2 AIRCRAFT SNOW S-2 AIRCRAFT U S-2 AIRCRAFT SNOWPLOW EFFECT U PLASMA DYNAMICS SOAPS Effects of multi-purpose soap thickened greases on rolling contact bearing metal fatigue [RIA-67-2155] 02 p0216 N68-11262 Thickening effect of lithium soap in oil-soap filler three component systems [FTD-HT-67-225] 07 p1012 N68-16725 SOCIAL FACTORS Long-term planning of socio-economic and scien-fic-technical development [JPRS-43352] 01 p0155 N68-10773 Social significance, and psychological and physiolog-ical effects of technological advances 03 p0429 N68-12085 Psychological and social factors in using off-duty time during long-duration space flights [NASA-CR-93834] 10 p1477 N68-20265 Socio-psychological surveys as basis for making in-rmational political and technical decisions on jet air-raft noise reduction procedures craft noise red [INC/C4/P8] 14 p2189 N68-25629 Mathematical model for qu antitative measurement of socio-economic progress on earth [TUB-IR-2/1966] 15 p2579 N68-26072 Effects of audience stress and communicator credibility on opinion change | 15 n2390 N48 26014

Research and dev tion of complex social p [NASA-CR-97184] SODIUM NT LIQUID SODIUM Cover gas pressures affecting accelerated cavitation damage in sodium [NASA-TN-D-4235] ... 01 p0073 N68-1010 Behavior of long-lived fis vection sodium loops [LA-3737] Liquid metal engineering center operational summa [NAA-SR-12520] Special equipment and chemical methods for effi-cient recovery and identification of impurities from [GEAP-5020] Critical thermodynamic sium, lithium, and rubidiu [FEI-52] c properties of sodium, potas-Feasibility of venting fit tonium alloy fuels to sodium [LA-3766-MS] Heat transfer from flat, horizontal steel surface to sodium during electron bombardment [BNL-TR-167] 09 p1450 N68-19087 Public policy and overall environmental quality and schoological, economic, social, legal, institutional, nd political problems related to environment manage-Neutron activation analysis of sodium, lithium, and otassium in compact fast reactors and its effect on 16 p2800 N68-27744 ion in techn echnically developed societies -nent of effective national trans-[NASA-TM-X-1512] Neutron and gamma ray production cross sections for sodium, chlorine, magnesium, potassium, and calci-17 p2991 N68-29529 Application of systems analysis to social factors by technical writers [NASA-CR-96132] 19 p3388 N68-31519 [GA-7829, PT. 1] Neutron and gamma ray production cross section data for sodium [GA-7829, PT. 2] 11 p1753 N68-21023 Job training, urban studies and socio-economic par-ticipation at University of California [NASA-CR-97374] 23 p4192 N68-37286 Alkali metals evaluation program [AGN-8249] 11 p1803 N68-21194 SOCIAL ISOLATION Sodium equilibrium alt flux calculated for earth a [NASA-CR-94125] Argus project research on psychological effects of icial isolation and sensory deprivation REPT.-31] 01 p0010 N68-10410 (REPT.-31)

ory deprivation, and sensory rear-on visual, auditory, and somesthetic ion, and spatial orientation

Psychophysiological effects of solitude exposure dur-g prolonged human sensory deprivation tests 09 p1283 N68-18923

Work capacity, and mental and physical per-rmance of male during prolonged confinement in

02 p0167 N68-11837

ation, sensory d ment effects on vi

sensation, perception [NASA-CR-90498]

(AD-674665)

Federal supported acades economy, and public benefit [NASA-CR-85721]

Rocket photometer measurem atribution in upper atmosphere

small chamber aggravated by social isolation and sen-sory deprivation 17 p2819 N68-28512 Inter and intra-individual desynchronization and behavior studied in isolated group experiment 19 p3214 N68-32151 acological and biochemical changes Is made aggressive by isolation 24 p4204 N68-38014 Science and technology effects on social, political, and economic sectors - conference proceedings [NASA-CR-91046] 03 p0429 Non-12081 03 p0429 N68-12081 Impact of modern science and tech technology on society 03 p0429 N68-12082 Operations research and management planning ethods in relation to philosophical problem of build-g improved social system 03 p0429 N68-12086 nmunication processes in ychological conditions of of social research 09 p1287 N68-18406 Applications of research projects and experimental results in social sciences

REPT.-1] 10 p1616 N68.20145 ic research for education, 14 p2377 N68-24924 Impact of aerospace industry technological inputs on public systems
[NASA-CR-84729] 14 p2378 N68-25638 Effect of varying laboratory situation on discussion group behavior and interaction [TR-26] Applying social and behavioral sciences to policy, plans, and operations of U.S.A. Air Force [AFOSR-68-0631] 18 p3015 N68-30638 nt decision making in solu-23 p4191 N68-35616 01 p0073 N68-10104 n products in forced con-03 p0316 N68-12596 05 p0641 N68-14039 05 p0622 N68-14319 05 p0757 N68-14812 n gases from liquid plu-08 p1202 N68-17264 10 p1556 N68-20355 11 p1752 N68-20939 distribution, origin, and 11 p1693 N68-21641 ment of daytime sodium 12 p1866 N68-22029 Effect of electron hole scattering on soft X ray emission spectra of lithium and sodium 12 p1955 N68-22163 Gas pressures effect on accelerated cavitation damage in sodium [NASA-TM-X-61065] 12 p1888 N68-22341

Quantitative correlation of carbon meter reading with short time carburization of 304 stainless steel in [UNC-5187] 12 p1835 N66-22405 Thermal convection loop tests for correlation of car-hurization rate of iron and stainless steel tabs from car-bon meter reading of sodium (UNC-5181) 12 p1836 N68-22420 Oxides effect on heat transfer during transverse flow of sodium metal across staggered tube bank [BNL-TR-184] 12 p1984 N68-22596 Carbon flux data from 32 probe tests on carbon mater for sodium.
[UNC-5172] Experimental study of work function dependence of samed Ge surfaces on Na overlayer coverage [3 p2134 N68-23588 Sodium heated steam generator [BAW-1280-48] 13 p1995 N68-23689 Thermodynamic properties of sodium and potassium 14 p2371 N68-24795 Gamma ray measurement from neutron capture in n, sodium, and thorium as function of neutron ener-FINE-12268) 14 p2311 N68-25051 Design of electrochen measurement of oxygen co [UNC-5131] meter for continuous in sodium 14 p2257 N68-25160 High temperature a perties of Croloy and fast breeder reactor [MSAR-68-14] sodium effects on mechanical pro-14 p2275 N68-25646 Transfer of excitation molecules to sodium atoms [NASA-CR-87587] energy from nitrogen 15 p2515 N68-25985 Work functions and ele ring surface ionization lic filament electron emission measurements on of iodine and sodium on tan-[FTD-MT-67-58] -15 p2417 N68-26579 Superheating of sodium at low heat fluxes [ANL-7383] 16 p2791 N68-27062 Over-ionization of po dwarf stars [NASA-TM-X-61134] and sodium in late-type 16 p2767 N68-27703 Relative energy positions and widths of proton and mma ray resonances in aluminum and sodium 17 p2923 N68-28390 Radiation width, nuclear scattering, and thermal absorption cross sections for sodium used as coolant in fast breeder reactors
[GA-8496]

17 p2933 N68-28978 Corrosion tests on vanadism alloys in development of clastding materials for fuel elements of sodium cooled fast breeder reactor (ANL-TRANS-600) 17 p2902 N68-29271 Wave methods and pertu phonon frequency in solid se on theory used to find 18 p3149 N68-29667 Electric dipole pol rubidium, and cesium [COO-1112-164] es of sodium, potassium, 20 p3539 N68-33317 Optical pumping, spin exchition experiments in samples hydrogen change, and light modula-es containing sodium and 21 p3733 N68-33704 Twilight airglow emis of sodium, lithium, and 22 p3866 N68-35011 Chemical analysis of copper solubility in sodium, ing colorimetry and atomic absorption spectrometry Al-AEC-126711 24 p4266 N68-37442 Mercury amalg content in sodium (BNL-50118) of determining oxygen 24 p4210 N68-37507 Time dependent behavior of plutonium dioxide, ranium dioxide, nodium aeronol produced by aportization of fast reactor core materials INL-12757] 24 p4297 N68-38139 vaporization o (BNL-12757) SODIUM BROMIDES Elastic strain effects on nuclear electric quadrupole teraction in sodium chloride and sodium bromide 12 p1835 N68-22359 im bromides 18 p3028 N68-30467 SODIUM CARBONATES Distillation method of deter (TRG-1635/C/) 13 p2014 N68-23567

19 p3310 N68-31465

SODRUM CHLORIDES Fractional conductivity change of various inorgan and organic solutes added to aqueous sodium chlorical solutions 02 p0173 N68-11085 (TR-4)

Shear modulus determined for polyurethans rubber containing bimodal mixture of coarse and fine sodium chloride particles containing bimoda chloride particles [ONR-TR-7] 04 p0526 N68-13499

Group theory applied to lattice vibrations in sodium 05 p0727 N68-14201 [LA-3750]

Color centers and purely ionic radiation in irradiated soldium chloride crystals

08 p1226 N68-17990 Effect of ultraviolet and X radiation on photostimu-lated emission from colored sodium chloride and pota-sium chloride crystals

08 p1226 N68-17994 Ultraviolet light coloring of natural and artificial sodium chloride and potassium chloride crystals m chloride crystals 08 p1226 N68-17995

paramagnetic resonance, X ray, and sensitized luminescence spectra of solid solutions of sodium chlorides and magnesium chlorides

08 p1227 N68-17998

Electron paramagnetic resonance of manganese in nodium chloride crystals with cadmium and calcium imporities 08 p1227 N68-17999

Anharmonicity in sodium chlorid ride and beta brass 10 p1580 N68-20282 de time effects on internal friction in

[ARL-67-0272]

Elastic strain effects on nuclear electric quadrupole interaction in sodium chloride and sodium bromide 12 p1835 N68-22359

Thermodynamic properties of solid solutions in sodium chloride-potamium chloride-cadmium chloride system 13 p2021 N68-24072

Stress corrosion of titanium alloys in chlorinated hydrocarbons, hot dry sodium chloride, and aqueous saline solutions

14 p2268 N68-24403

Hot salt stress corrosion cracking of sheet metals for [NASA-TM-X-59634]

14 p2273 N68-25324 Warm fog and fog modification by seeding with salt

NASA-CR-1071] 15 p2496 N68-25816 Effects of sait on growth of he [NASA-TM-X-60278] lophilic green alga 15 p2391 N68-25931

Electric charge on crystal dislocation in sodium chloride due to formation of lattice vacancies at cation

17 p2958 N68-28952

Reduction reactions, chemical recombination, and irradiation effects in hydrated and anhydrous crystals of ammonium, potassium, and sodium hexachlorides containing iridium [LFEN-78/GAMMA/] 19 p3234 N68-32097

Photomechanical effect in sodium chloride, potassi-n chloride, and lithium fluoride ionic crystals ionic crystals 20 p3562 N68-32311 (RTS.4486)

Differential thermal analysis to measure stored energy in X ray and gamma irradiated sodium chloride 20 p3565 N68-32770

Nuclear magnetic resonance measurements in sodi-um chloride type rare earth group 5A intermetallic compounds

20 p3567 N68-32832 Harmonic and anharmonic calculations on ther-modynamic properties of sodium chloride crystals 20 p3610 N68-32947

Electrodeless discharge lamps used for Raman stu-dies of colored fused salts, carbon tetrachloride, and situatium tetrachloride

21 p3647 N68-33782 Initiation of hot salt stress corrosion cracking of

[NASA-CR-88069] 21 p3703 N68-34037 Experimental study of diffusion of vacancies and vacancy pairs in single crystals of sodium chloride [COO-1 97-30] 23 p4148 N68-36206

Salinity of ocean water and sea ice and ice formation (NOO-TRANS-370) 24 p4250 N68-37757

dium aluminum silicate Melting relationships in sodium aluminum silicate sodium chloride water system at 1 Kb pressure [NASA-TM-X-63372] 24 pA272 N68-37945 SODIUM COMPOUNDS

Conjugate liquid phases in immiscibility region of sodium compounds [USNRDL-TR-67-86] 01 p0025 N68-10772

Tungsten compounds used lossbauer transmission experis ids used as liquid absorbers in

(SR-1) 03 p0314 N68-12471 antitative oxygen analysis in sodium samp [NAA-SR-12250]

05 p0618 N68-14066 Development, and evaluate containing sodium niobate niobate dielectric material [NASA-CR-65986] tion of thin film substrates e capacitors, or sodium 09 p1314 N68-18502

Electrical properties of metallic sodium tungsten

11 p1767 N68-20671 nmercial solvent for sodium removal and hardware cleaning (BNWL-637)

13 p2012 N68-23374 Dynamic ch racteristics of sodium oxide plugging in-16 p2665 N68-28142 (LA-DC-94231

Separation of traces of metal ions from sodium astrices such as sea water [ANL-7421] 16 p2614 N68-28160

Radiolysis of aqueous sodium formate solutions for use in high dose integrating chemical dosimeters [EUR-3914.E, PT. 1] 17 p2841 N68-28926

Radiolysis of aqueous sodium use in high dose integrating chem (EUR-3914.E, PT. 2) m oxalate solutions for mical dosimeters 17 p2841 N68-28946

Thermal dehydration of dihydrogenphosphates of thium, sodium, potassium, and ammonium ions NASA-TT-F-11745) 18 p3024 N68-30188 Inthrum, sodium, potassium, and [NASA-TT-F-11745]

Heats of formation for anhydrous crystalline sodi borate by HCl acid solution calorimetry BM-RI-7167] 18 p3024 N68-30 18 p3024 N68-30192

Electrochemistry of iron over wide ranges of pH in solutions of sodium salts
[ARL/MET-49] 19 p3230 N68-31851

[ARL/ME1-27]
Effect of zinc oxide on structure of glasses in some eaide, zinc oxide, silicon diexide systems. 20 p3508 N66-32268

Dielectric and structural investigations of sodium obsessium and sodium strontium cadmium niobates potassium and sodium structural possessing defect structures [AD-671905] 20 p3581 N68-33033

Dissociation of lithium and sodium tetramethylalu-sinate in solution (TR-17) 24 p4220 N68-38363

SODIUM COOLING

Experimental results for work on effects of extended contact between trace-irradiated photonium fuels and 500 to 700 deg C sodium [LA-3745] 02 p0238 N68-11534

Preoperational nonnuclear performance of sodium sactor experiment facility for power expansion program system [NAA-SR-12408] 03 p0372 N68-12212

Sodium cooled fast rei [NAA-SR-11378, V. 2]

03 p0375 N68-12509

Computer program for calculating sodium-cooled fast power reactor dynamics and stability [KFK-465] 03 p0381 N68-12736 Heat transfer er of rod bundle with triangle lattice in 05 p0755 N68-14425 (UJV-1815)

Liquid metal superheat and coolant flashing in sodi-um boiling and fast reactor safety [EURFNR-353] 05 p0695 N68-14589

Reactor operation and fuel burnup equations for cal-culating long-time behavior of sodium cooled reactor [KFK-630] 06 p0872 N68-15187

Double containment principle and aerosol behavior in relation to safety of fast nodium-cooled breeder reacture with high plutonium inventory [KFK-669] Op p1376 N68-18957 09 p1376 N68-18957

ation in liquid metals, and cavitation sens in sodium-cooled fast neutron breeder 13 p2108 N6.
Thermal hydraulic and structural performs heat exchanger for sodium cooled reactor plans [UNC-5200] 13 p2108 N68-23787 ance of

14 p2295 N68-25275 Summary review of flowmeters suitable for measur-ing sodium flow at temperatures up to 1200 deg F in sodium cooled fast breeder reactors 15 p2465 N68-25682 Feasibility of prototype ultrasonic transducer sub-merged in sodium coolant of nuclear reactor [APDA-220] 15 p2470 N68-26802

Sodium cooled reactors fast ceramic reactor GEAP-5541 16 p2704 N68-28011

Sodium sampling techn (APDA-306) or nuclear power plant 16 p2708 N68-28132 Cavitation in liquid sodi n-cooled fast neutron [TR-01357-1-T] 19 p3309 N68-31188

Computer program to calcula in fast reactors during boiling ac [RT/ING/68/10-PRU-R-/68/6] nt ejection rate

SODIUM FLUORIDES

d optical properties of ox-fluoride single crystals 04 p0557 N68-13306 Electron spin resonance and on molecular ion in sodium fire

Effect of scaling in calculattice distance, compressibil culation of cohesive energy, ibility, and elastic constants 04 p0562 N68-13868 (UUIP-537)

Effects of crystal defects of sodium fluoride on color centers determined by electron paramagnetic resonance spectroscopy, spectrophotometry, and lu-[REPT.-758] 04 p0562 N68-13899

X ray reflection technique for measuring low tem-trature thermal expansion coefficient of sodium [COO-623-120] 09 p1409 N68-19075

Impurity effects on ionization color centers in sodium fluoride [REPT.-868] n states of F-aggregate 10 p1580 N68-20201

Absorption and luminescent excitation spectra mea-surements for F and M centers in potantium chloride and sodium fluoride crystals 12 p1953 N68-22092

Molecular beam electric resonance spectra of lithi-um and sodium fluoride and potassium chloride 16 p2607 N68-27172

Fluorimetric analysis of fused uranium in sodium [NIM-163] 19 p3222 N68-30991

oride and nitrogen fluoride 30 effect on proid function in rats Sodium fluoride an growth and thyroid fur [AMRL-TR-67-189] 20 p3407 N68-33128

SODIUM GRAPHITE REACTORS

Effect of high temperature sodium environments on mechanical properties of candidate ferritic and austenitic alloys for liquid metal reactors - high oxygen and high carbon cold trap analyses [MSAR-67-203] 16 p2686 N68-28288

SODIUM HYDROXIDES

Removal of silicon dioxide from plutonium rocessing anion exchange resin by sodium hydroxide (RFP-1037) 05 p0617 N68-14029

06 p0795 N68-15966

Effect of second order chemical reaction on methyl mercaptan absorption in laminar liquid jet 13 p2023 N68-24254

Electroanalytical studies of mercuric sulfide deposits on mercury electrodes in sodium hydroxide solution 16 p2616 N68-28317

Zinc corrosion in solution hydroxide over wide pH range [ARL/MET-67] n of water and sodium 19 p3231 N68-31890 SODIUM IODIDES

Photopeak efficiencies of sodium iodide /T1/ detectors for cylindrical gaseous sources [PG-792/W/] 02 p0209 N68-11058

Optimum arrangement for differential gamma spectrometer with sodium lodide scintillator [HMI-B-59] 05 p0624 N68-14533 05 p0624 N68-14533

Efficiency of sodium iodide-thallium scintillation ounter for gamma rays of cesium 137 and cobalt 60 in [NP-17072] 08 p1224 N68-17673

Calculated absolute detection efficiencies of cylindrical sodium iodide scintillation crystals for aqueous apherical sources
[AE-310] 10 p1528 N68-19574

Pressure-induced phonon frequency shifts measured in sodium iodides [SGAE-PH-57/1967] 10 p1575 N68-19678

Characteristics of thail iodide imer center in sodium 13 p2131 N68-23227 SUBJE Scint layers o

IUCRL Deter COO-

CNEA Radio rubidius and sod tric reso (UCRL-SODIUM :

UCRL-87, Rb 8 SOBIUM I

lon ex

zeolite-n

SODIUM R Portab tion of al from car [NASA-SODEUM R Analys tor mock GEAP-S

SODIUM S IS-T-213

UJV-18

SODIUM S

Producticate four (BM-RI-7 Melting sodium ch [NASA-T SODIUM V

Mathem sedium he (BAW-12 Static a sodium en [NAA-SR TR-1001

Cesium, neutralizat of collecto [ANL-737 Carbon [UNC-518 History high lumin (REPT.-67

SODIUM 22 Gumms-absolute as and yttrium (CEA-R-3)

SUBJECT INDEX		I MAYARM SOILS
Scintillation characteristics of thin vacuum deposited layers of sodium iodide and cesium iodide with thallium	SODIUM 34 Electron source tháckness effects on beta spectrum	Moieture characteristic curve analysis to determine unfrome water content level in frome ground [CRREL-SR-114] 02 pt/205 1666-11263
[UCRL-70773] 14 p2335 N68-25492 Determination of Imperfine structure constants of	of sodium 24 [NRC-TT-1326] 19 p3337 N68-32166 SOFT LANDING	Multispectral sessing for automatic recognition in
resonance spectrometer [COO-1112-163] 20 p3431 N68-33319	Explicit closed loop, throat dose feedback controller	[NASA-CR-91522] 04 p0510 N68-13477 Relationships between amino and humic acids in
lodine 131 labeling of sodium lodothalamate [CNEA-229] 21 p3648 N68-33835	for gravity turn landing maneuvers [RE-321] 09 p1422 N68-18969 Application of spacecraft fuel optimal guidance law	(NASA-TT-F-11484) 06 p0772 N68-15166
Radio frequency Stark spectra of rubidium fluoride, rubidium chloride, cesium fluoride, cesium chloride, and sodium iodide measured by molecular beam elec-	Application of spacecraft fuel optimal guidance law to soft lunar landing (AGRR-TB-16) 19 p3362 N68-31893	Decomposition kinetics of carbon 14 labeled amino acids in soils [NASA-TT-F-11485] 06 p0775 N68-15867
tric resonance method	Expandable gas bag concept proposed as stowable, omnifirectional, multiple impact space payload land-	Photointerpretation techniques applied to sorial sell survey in west central Latembourg
[UCRL-17909] 23 p4012 N68-36853 SODIUM ISOTOPES	[NASA-TM-X-39623] 21 p3775 N68-33736 Velocity requirements for soft landing on Mars	Melt ranges of soils with ensuing vapor and gas leaves in soil fusion tests
Molecular beam Stark effect resonance spectra for salts of intopic sodium, chlorine and bromine [UCRL-17916] 12 p1932 N68-22631	Velocity requirements for soft landing on Mars moons Phobos and Deimos [TOR-0200/4452/-1] 23 p4166 N68-36390	[SC-CR-67-2688] 09 p1336 N68-19217 Development, and evaluation of sieve sampler, and
Electron paramagnetic resonance technique for measuring spin-exchange cross sections of Cs 133, Rb 87, Rb 85, K 39, and Na 23	NT APOLLO SPACECRAFT NT GEMINI SPACECRAFT	rotating wire break sampler for planetary soil probing [NASA-CR-93678] 09 p1428 N68-19394
[RELLT-04841-4-1] 18 h2220 MOS-21245	NT LUNAR LANDING MODULES	Lunar soil mechanics and engineering for hunar ex- ploration NASA-CR-94424] 12 p1968 N68-22768
Reaction mechanism for Na-23/d,alpha/Ne-21 reac- tion 20 p3542 N68-32536	NT LUNAR MODULE NT MARS EXCURSION MODULE NT MERCURY SPACECRAFT	Soil engineering problems, techniques, and research
SODIUM NITRATES fon exchange distributions of transition elements in	NT SIGMA 7 NT SURVEYOR LUNAR PROBES	[NASA-CR-95060] 15 p2557 N68-25836 Stress-strain model for analysis of frictional coll behavior under load
zeolite-molten sodium nitrate system [USNRDL-TR-67-104] OI p0026 N68-10857	NT SURVEYOR I LUNAR PROBE NT VOSKHOD MANNED SPACECRAFT NT VOSTOK 3 SPACECRAFT	[R68-4] 15 p2463 P66-26808
SODIUM PEROXIDES Portable emergency oxygen generator based on reac-	Control and nonlinear estimation techniques applied to outlined middance of low thrust supercraft, ulanetary	Selected articles on surface morphology of player in California, Australia, and from [APCRL-68-0133] 16 p2659 N68-27352
Portable emergency oxygen generator based on reac- tion of alkali peroxides with water vapor for self-rescue from carbon monoxide poisoning [NASA-TT-F-11701] 17 p2828 N68-28337	[NASA-CR-91441] 04 p0487 N68-12992	Plays surface changes at Harper Lake, Calif., during period 1962-1967
SODIUM REACTOR EXPERIMENT Analysis of southwest experimental fast oxide reac-	Lunar surface, temperature, mechanical properties, and geological observations from Serveyor 5 spacecraft soft landing	Test drillings to study sedimentology, hydrology, and giant desication polygons of five California player
tor mockup critical experiments in Zero Power Reactor	[NASA-CR-91361] 04 p0573 N68-13046 Planetary quarantine requirements studies, including	16 p2653 N68-27354 Microwave emission characteristics of anow, soils,
[GEAP-5294] 01 p0090 N68-10444 Seven rod element heat transfer in axial flux of sodi- um coolant	Planetary quarantine requirements studies, including cleaning of Surveyor apacecraft, probability of spore release, and ultrasonics for recovering microorganisms [NASA-CR-91815] 06 p0772 N68-15139	and snow-ice-water systems, and correlation with soil moisture content
[UJV-1814] 05 p0754 N68-14252 SODRIM SALICYLATES	Surveyor hunar program 10 p1598 N68-19614	[SGD-829-6] 18 p3070 N68-30647 Chemical analysis, physical properties, and test bods for 12 basic soils analyzed in lunar module self-
Effectiveness of sodium salicylate-coated photosus- tiplier as radiation detector in extreme ultraviolet re-	Mission and subsystem parametric analyses to evalu- ate direct and orbital entry modes for soft landing cap-	(NASA-CR-92215) 19 p3270 N68-31325
gion 23 p4031 N68-36330	[NASA-CR-66659] 19 p3366 N68-31831	NT ANORTHOSITE NT BASALT
SODIUM SILICATES Electron paramagnetic resonance of gadolinium in	Selection of capsule for 1973 launching of Mars soft lander mission [NASA-CR-66665-1] 21 p3775 N68-34050	NT BRECCIA NT CLAYS
(IS-T-213) 13 p2011 N68-23330 Production engineering and evaluation of section all-	Minion and systems parametric studies for Mars soft lander to define entry and landing capsule suitable for Mars probe in 1970 time period [NASA-CR-6665-2] 21 p3776 N68-34051	NT DUNITE
Production engineering and evaluation of sedium silicate feam for use in airdrop cushions [TR-68-46-AD] 17 p2904 N68-29203	Parametric studies for Mars soft lander carmin for	NT GRESS NT GRANITE
High temperature enthalpies and entropies of four crystalline sodium-calcium allicates [HM-RI-7201] 23 p4007 N68-36256	Parametric studies for Mars soft lander capsule for 1973 launching, capsule parametric analysis, and Mars environment effects	NT KAOLINITE
Melting relationships in sodium aluminum silicate	[NASA-CR-66665-3] 21 p3776 N68-34052 Conceptual design I for capsule for Mars soft lander for 1973 issueching	NT LUNAR DUST
[NASA-TM-X-63372] 24 p4272 N68-37945 SODIUM VAPOR	[NASA-CR-66665-4] 21 p3776 N68-34053	NT LUNAR SOIL NT MAGMA NT OLIVINE
Mathematical model for dynamic performance of actium heated steam generator	Conceptual design 2 for capsule for Mars soft lander for 1973 launching [NASA-CR-66665-5] 21 p3776 N68-34054	NT PERMAPROST NT POLYURETHANE FOAM NT POROUS MATERIALS
[BAW-1280-42] 03 µ0373 N68-12423 Static and sliding contact behavior of materials in	Conceptual design 3 for capsule for Mars soft lander for 1973 launching (NASA-CR-6665-6) 21 p3776 N68-34055	NT PYROXENES TO SECOND ROSE TO SECOND
(NAA-SR-12446) 05 p0675 N68-14488 Continuous atomic absorption cross sections of	Conceptual design 5 for capsule for Mars soft lander for 1973 leunching	NT QUARTZ NT ROCKS NT SANDS
neutral sodium vapor (TR-1001/9260-01/-5, SUP, 1)	[NASA-CR-66665-7] 21 p3777 N68-34056	NT SEDIMENTARY ROCKS
10 p1569 N68-20018 Ceslum, potassium, and sodium metal vapors for	News release on ZOND 5 space probe of moon and return to earth with second cosmic velocity [NASA-CR-97014] 22 p3966 N68-35954	Data tabulations for wind speed, air temperature,
Cesium, potassium, and sodium metal vapors for neutralization of electron apace charge and reduction of collector work function in low pressure alkali-metal thermionic converters	Crushing strength and softening characteristics of iron ore pollets at elevated temperatures	and soil temperature (ECOM-65-G10, V.3) 03 p0362 N68-12020 Wetting, and drying effects on soil surface energy
(ANL-7377) 11 p1629 N68-21211 Carbon meter for measurements on sodium thermal	[BM-R1-7060] 04 p0519 N68-12826	[ECOM-2-67P-2] 84 posse Non-12938
[UNC-3180] 12 p1876 N68-22662	Cyclic work softening effect on mechanical proper- ties of hard commercially pure aluminum [ARPA-E52] 06 p0834 N68-15356	Soil-spacecraft interaction forces during impact tools with wedge, spherical, and cylindrical shaped projectiles
History of development of action vapor lamp of high luminous efficiency [REPT67-C-287] 13 p2039 N68-23566	Cast iron softening using neutron irradiation [FTD-HT-23-549-67] 06 p0856 N68-15895 -	[NASA-CR-91690] 05 p0746 N68-14173 Enzyme behavior in nonclassical systems, surface pN estimation in solls, and enzymatic activities in stored
SODIUM 22 Gunna gamma coincidence method of measuring absolute nuclear activity for sodium, cobalt, scandium,	Built-in mechanisms for softening and rehydrating compacted food hers [TR-66-13-FL] 08 p1133 N68-17862	estimation in soils, and conyunite activities in stored and geologically preserved soils [NASA-CR-92328] 06 p0773 N66-15422
absolute nuclear activity for sodium, cobalt, scandium, and yttrium isotopes [CEA-R-3260] 06 p1211 N68-17222	U COMPUTER PROGRAMS	Mineralegical composition of northern Karolis with,
Oanma ray spectroscopy of light nuclei - linear polarization of gamma rays, illetime and magnetic moment measurements, and beta decay to Na 22 [BNL-12621] 24 ps/306 N68-37517	SOIL SCIENCE Remote and rapid soil investigations using high speed	[NASA-CR-92552] U6 p0637 Nes6-15446 Chemical and blockenical reactions of self-ferma- tion, and classification of Arctic selfs
(BNL-12621) 24 p4306 N68-37517	(SC-I)C-67-1923 01 p0057 N68-10379	(NASA-CR-92526) 06 p0842 NSB-16862

Brightne solar atmo (RTS-471)

Observa [AFCRL-4

AD-6733

structure of

Spotcen solar featu (NP-17530

Mechan

CEA-BIB

SOLAR AUX

Testing,

NASA-CI

SOLAR AZI

SOLAR CEL

Design, dar cell a

INASA-CI

Design, solar array [NASA-CI

Design of une with sp [NASA-Cl

Effects on silicon

(NASA-TI

integral [NASA-CI

Electron d solar

[PB-17580

Enginee rollup sola [NASA-CI

Dynamic film solar of [ARL-67-4

Multiple

Design :

INASA-TI

[NASA-CI

Thin file

ESRO-TA

IGFW-TN

Design of

cal temper (NASA-T)

Thirty w.

Prelimin for 30 watt [NASA-CI

N/p silic short circu [ESRO-TN

ESAO-TN

Solar ce

Maximu

Electrica

Reliabili

Procedures for predicting ground shock phenomena based on one dimensional shock propagation - loading unloading stress wave interactions in soil shock tube [UR3-661-11] 08 p1251 N68-17635 Design and evaluation of three stress gages for m suring mechanical stresses on buried structures a structural elements [TR-1-801] 09 p1339 N68-182 09 p1339 N68-18296 Soil burial tests of full scale, electrically heated, simulated SNAP-27 fuel capsules [SC-DR-67-716] 09 p1379 N68-19260 Advanced soil sampler technol [NASA-CR-93679] ology 09 p1428 N68-19391 Static bearing capacity of sloping surfaces acted upon by vertical or inclined loads for evaluating apacecraft landing performance. 10 p1599 N68-20224 sbay soils for disposal of radioactive wastes [BARC-297] 11 p1689 N68-21274 Computer reduction of data from engineering tests a oceanographic soil samples 11 p1691 N68-21358 ements, and freezing Soil temperature sechanisms in granul 12 p1865 N68-22011 [REPT.-67-9] Free amino acids in soi [NASA-TT-F-11498] 12 p1837 N68-22580 nt of free field soil stress gages Design and developm or static and dynamic r [TR-1-814] 12 p1880 N68-23023 chemical composition of soil as [NASA-TM-X-63205] 13 p2120 N68-23848 Systematic description and key to Streptomycetes clants from Chile-Atacama Desert, Hawaii, and Oregon soils [NASA-CR-94759] 14 p2196 N68-24772 Enzyme activity in terrestrial soils examined in rela-tion to developing procedures for exploration of Mars INASA-CR-957271 17 p2971 N68-29066 Soil humidity and density measurement by portable meter composed of transistor circuits with Geiger-Mueller tube and electronic chronometer [CNEA-204] 7 p2889 N68-29393 Comparative study of aerial photography for soils and terrain data analyses - Phoenix, Artzona test area [REPT.-38-TR] 18 p3079 N68-30679 Systematic description and key to actinomycetes and Bacillus isolants from Mexican soils [NASA-CR-96135] 19 p3210 N68-31842 Induced polarization in prospecting soil covered ore [RTS-4310] 20 p3467 N68-32292 Kinetics of radioactive soil layer removal from stain-less steel surface 20 p3484 N68-32336 Exhaust gas contamin on of Mars porous surface soils by unmanned spacecraft [NASA-CR-96286] 20 p3585 N68-32604 Streptomycetes isola Arizona desert soils [NASA-CR-96470] nts from Chile, Mexico, and 20 p3407 N68-33066 Theoretical harmonic analysis of soil profiles of temperature and heat flux 21 p3718 N68-34295 Atmosphere and soil tes arctic surface and snow [SR-12] 23 p4055 N68-36520 Shock wave method for determining equation of state /constitutive relation/ of ice and composite frozen 24 p4254 N68-38276 Airborne surveying of ra atmosphere, soils, and water [ONI-TRANS-2634] of radioactive contamination of water in gamma ray spectrum 24 p4205 N68-38290 SOLAR ACTIVITY NT FACULAE NT SPICULES NT SUNSPOTS Airglow, aurora, ionoaphere, coamic ray, geomag-netism, and solar activity data collected by World Data Coanter. 01 p0057 N68-10345 ity effects upon electron energy increasing solar activity and density of 1000 km in (NASA-TM-X-63019) 01 p0131 N68-10509 ing H alpha structure 01 p0131 N68-10685

d composition model for

01 p0131 N68-10727

[REPT.-67-22] [CR-112]

Protons associated with centers of solar activity and propagation in interplanetary magnetic field regions co-rotating with sur [NASA-CR-90227] 01 p0132 N68-11005 Prelaunch news release on Pioneer C spacecraft mission objectives and specifications (NASA NEWS RELEASE-67-293) 02 p0270 N68-11048 (RRC-A155, PT. 2) SOLAR ACTIVITY EFFECTS Solar active region in Mg 2 light - comparison of Mg 2 filterheliograms with H alpha and Cn 2 K spec-trobeliograms 05 p0734 N68-13919 Prediction of radiation dan mount photographic film [NASA-TM-X-53666] Spectral diagrams based on single-frequency records of solar radio type 4 events collected from several observatories 05 p0733 N68-14768 Coamic rays, meteors, auroras, ionospheric electron ensities, and solar activity effects on characteristics of ing solar activities [NASA-CR-93284] 06 p0832 N68-15031 Echo 2 orbital data anal Diurnal and half-diurnal cosmic ray intensity varia-tions in relation to magnetic and solar activity 06 p0900 N68-15054 variations during solar activiti [RAE-TR-67180] Twenty-seven day recurrence in cosmic rays and cor-reponding variations in solar and magnetic activities 06 p0901 N68-15057 [NASA-TM-X-63140] Ground station observations on connection of 11 year cosmic ray variation with solar activity 9001 N68-15060 Solar sunspot cycle ob proton shower predictions Solar cosmic ray generation solar chromospheric eruptions ind energy spectra, and 06 p0903 N68-15068 Cosmic radiation effects on human organisms, and crythrocyte number variation with solar activity Short wave fading and m distribution in solar hemis 06 p0771 N68-15072 Annotated bibliography on solar activity [NASA-TM-X-60851] 06 p0907 N68-15117 Magnetic storm anisot energy ion detector abou tions Technology Satellite [NASA-CR-95216] Morphology and electron densities of E2 and FO yers, and dependence of ordinary wave critical equencies on solar activity OGO-C observation of su and propagation of pertur-July 1966 [NASA-TM-X-63247] 06 p0836 N68-15398 geomagnetic field, and at-their effects on earth Solar activity, meteoroids ospheric structure and spacecraft [NASA-TM-X-52388] 07 p1083 N68-17169 Jet streams, solar activity and storm relations, and cloud cover [NASA-CR-95702] 08 pl196 N68-17528 [NASA-CR-95701] Radioactive age determinate ing solar cyclic activity and astr [NASA-TT-F-11567] n by carbon 14 for tim-ophysical phenomena 12 p1968 N68-22567 Observation and forecasting of solar proton events 13 p2 47 N68-23939 RTS-4242] Characteristics of singly and doubly charged parti-cles in primary cosmic radiation during low solar activi-(M-7123) 13 p2123 N68-24324 Data on airglow, auroras, cosmic radiation, geomag-etism, ionosphere, and solar activity data collected air Vorld Data Center A between July 1, 1957, and becember 31, 1967 - catalog SOLAR ATMOSPHERE 14 p2246 N68-24569 Tabulated data from worldwide stations on magnetic field intensity, cosmic radiation, solar activities, and ionospheric acundings in 1967

[AD-867807]

14 p2247 N68-24833 TR-0158/3230-46/-11 14 p2247 N68-24833 on and nucleon comtribution changes of n activity 14 p2341 N68-25550 Curves of growth con Fraunhofer line widths Ground support system for monitoring during solar ATM mission operations [NASA-CR-61817] 15 p2562 N68-26812 gas equation of state [NRL-6580] Continuous cinematogs Spatial and temporal For field spectrograms of solar pl [NASA-CR-94710] 18 p3165 N68-30254 Correlation between solar activity and satellite ac-elevation 19 p3362 N68-32001 Temporal variations of magnetic fields during development and disappearance of sunspots in active solar regions [RTS-4239] 20 p3586 N68-32654 Calcium ionization and c um line formation in solar c [SAO-SR-274, V. 2] nic rays used to determine on of cosmic rays and at-temperate and subtropical H and K line observa in solar chromospher [SAO-SR-274, V. 3] Intitudes [M-7371] Changes in daily solar variations from magnetogram data for 130 quiet days during 1964 22 p3959 N68-34966

Atmospheric circulation cycles and solar activity etween 1900 and 1930 - monthly mean values and

22 p3906 N68-35529

Spotcentric transformation formulas for observable solar feature coordinates [NP-17530] 23 p4163 N68-37157 23 p4163 N68-37157 Tabulated solar and geophysical data from vertical 23 p4058 N68-37272 Solar radiation and magnetic effects on upper at-ospheric neutral temperatures derived from satellite [NASA-TM-X-63014] 01 p0130 N68-10358 age to Apollo telescopic 02 p0212 N68-11469 Height distribution analysis for kinetic molecular nization-recombination processes in F 2 region dur-08 p1234 N68-18175 is for exospheric density 10 p1520 N68-19760 Observation of polar geomagnetic disturbances in connection with polar cap absorptions of slow onset 10 p1589 N68-20498 ervations for high energy 10 p1553 N68-20568 Relationships between recent measurements of cosmic ray electrons, nonthermal galactic radio emis-sion, and solar modulation of cosmic rays [NASA-CR-94108] 11 p1779 N68-21341 wave radio burst activity 13 p2146 N68-23692 ic particle fluxes from low ynchronous orbit Applicalite /ATS-1/ 16 p2753 N68-27386 den magnetic field change tion to magnetotail on 8 16 p2753 N68-28248 Magnetic fields of sun and effects on events near 17 p2971 N68-29374 Solar activity effects on magnetosphere, tropo-here, and stratosphere 17 p2880 N68-29396 Sunspot appearance effects on radial velocity and agnetic fields of photosphere and chromosphere 20 p3586 N68-32794 Solar activity effects on general circulation of earth mouphere - relationship between long period changes solar activity and characteristics of Icelandic 20 p3473 N68-33345 Brightness temperature measurements of quiet sun at entimeter, millimeter, and infrared wavelengths and oneparison with temperatures derived from chromo-theric models 03 p0406 N68-12234 Solar cosmic ray generation and energy spectra, and lar chromospheric eruptions 06 p0903 N68-15068 tructed for center of solar disk 06 p0911 N68-15618 n structure on basis of real 07 p1080 N68-16619 er analyses on velocity sphere 14 p2339 N68-24528 Soviet bloc research in planetary origins, solar at-sosphere, luminosity functions, star density, and radio 15 p2557 N68-25823 puter program for calci-15 p2557 N68-25838 r calcium line formation 15 p2557 N68-25839 Invariant imbeddings and Fredholm equations in bundary value problem for intensity of radiation nerging from solar atmosphere emerging from a [RM-3576-PR] 16 p2752 N68-27234 Stark effect in studying so er abundance of light ele-19 p3362 N68-31057

nospheric ion density i

es for alum

er spacecraft solar

Brightness distribution and hot and cold regions in solar atmosphere related to model for faculae [RTS-4712] 22 p3959 N68-35162 n of solar phenomena 22 p3957 N68-35889 [AFCRL-68-0316] Reliability estimat tions and source func [AD-673383] limb darkening func-cast square fittings 23 p4162 N68-36519 er lin Orbiting solar observa-ructure of solar atmosph ory to obtain data on fine (ESRO-SP-25) 23 p4177 N68-37107 formulas for observable otcentric tra solar feature coordin [NP-17530] 23 p4163 N68-37157 Mechanisms of s here, magnetism, and activity ICEA-BIB-1211 23 p4163 N68-37175 d data on transient flure-as-24 p4338 N68-37505 SOLAR AUXILIARY POWER UNITS Testing, fabrication, configuration selection, and sectrical performance calculations in solar thermionic generator developm [NASA-CR-92520] 06 p0771 N68-16074 SOLAR AZIMUTH SOLAR CELLS Design, testing, and quality control of large-area solar cell array, ground support equipment, and tools [NASA-CR-90106] 01 p0005 N68-10579 rication of photovoltaic on Martian surface 01 p0006 N68-10625 Design, development as solar arrays capable of op-[NASA-CR-90102] Design criteria for c storable solar array for use with spin stabilize [NASA-CR-90347] 02 p0162 N68-11490 Effects of ammonium hydrogen sulfide and Freon 14 n silicon solar cells with titanium silver grids and con-(NASA-TM-X-63039) 02 p0163 N68-11649 for ailicon solar cells 04 p0446 N68-12907 integral coverslips [NASA-CR-91358] Electromagnetic energies of convection currents, and solar cell shielding requirements against radiation [PB-175806] 04 p0598 N68-12921 Computer analysis of solar cell shielding require-ents against radiation belts 04 p0447 N68-12923 Engineering design criteria for 30 watts per pound rollup solar array
[NASA-CR-91445] 04 p0447 N68-12939 Dynamic model for photove film solar cadmium sulfide cell (ARL-67-0190) ic mechanism in thin 04 p0555 N68-13015 Multiple mission cap spacecraft interplanetar [NASA-TM-X-52379] vais for solar electric 04 p0572 N68-13017 siticon solar cell panel Design and develo for operating in then INASA-CR-913901 g cycles 04 p0449 N68-13101 tovoltaic solar cells 04 p0449 N68-13216 Thin film gallium: [NASA-CR-72308] Maximum insolutronomical satellite [ESRO-TM/P/-65] ar cell array of large as-04 p0582 N68-13400 Electrical spacecraft property power sources development [GFW-TN-67/6] laion systems and auxilia-ts in West Germany 04 p0567 N68-13649 Development and testi better radiation resistance of silicon solar cells with 05 p0606 N68-14031 solar array 05 p0607 N68-14185 Design concepts for plan [NASA-CR-91730] is to calculate theoret cal temperatures of th INASA-TN-D-43311 or cells in earth orbit 05 p0754 N68-14270 op solar array feasibility 06 p0769 N68-15787 [NASA-CR-92530] neering drawings for 30 watts per pout (NASA-CR-92579) 06 p0770 N68-15864 N/p silicon solar cell cali short circuit from cells expo [ESRO-TN-5] n by measurement of 07 p0938 N68-16340 on solar cells and on cell performance 07 p0938 N68-16371 prediction of doi [ESRO-TN-3] Solar cell performance prediction from absorption refficients of silicon in wavelengths from 0.5 to 1

micron as functions of doping levels and crystal tracking, deployed, t FNASA-CR-943201 12 p1819 N68-22232 [NASA-CR-93154] 07 p1066 N68-16510 Design and performand solar-radiation siz [NASA-TM-X-1503] of two vacuum chambers in for solar-cell research 07 p0982 N68-16695 [NASA-CR-94319] 12 p1819 N68-22233 Historical review of scientific work on photovoltaic fects and on energy conversion devices using this afal areas of technology as attery power systems for Program review on critic ciated with solar cell b fect [NASA-CR-92679] 07 p0939 N68-16882 NASA-CR-945511 g recovery in solar cells 13 p1995 N68-23528 Effect of lithium is irradiated with high o [NASA-CR-93138] Fullure analysis and degradating solar cell arrays of applica on mechanism for or-tions technology satel-07 p0940 N68-17065 res for solar cell configura-nally insulated from spinning Equilibrium temperations bonded to, but the [NASA-CR-94612] 13 p2156 N68-23889 Short-circuit current mancovered silicon solar constants for different [ESRO-TM-113/ESTEC/] measurement of covered and cells at irradiance up to five rent angles of incidence spacecraft [NASA-CR-73181] 07 p0941 N68-17084 Storage cells, ma machining, resistors Nimbus D solar conv [NASA-CR-93292] is for storage module rs, semiconductors for 13 p1996 N68-23984 08 plil9 N68-17546 ESTEC test facility for t ng ESRO I satellite solar Radiation effects on (CERTS-NT-02-2) 08 p1120 N68-17650 ell modules and arrays ESRO-TN-9/ESTEC/I 13 p2049 N68-24177 [TN-1967-52] valuic efficiency of p rzella 13 p1997 N68-24297 todiodes in solar cells 08 p1124 N68-17828 ng techniques for applying to silicon solar cells 09 p1273 N68-18351 Electrical ch d gallium arsenide p-n unctions used as solar cell RAE-LIB-TRANS-12871 integral cover-glass ([NASA-CR-93410] 14 p2190 N68-24366 Deposition of integral qu rtz coatings on silicon solar High vacuum aputt and nickel contacted st [NASA-CR-94715] 09 p1273 N68-18451 14 p2191 N68-24615 Satellite power supply co solar cell array battery [ESRO-TM-54/ESTEC/] strol systems analysis of Changes in electrical studied after flut neutro [BMWF-FB-W-68-15] es of p-n Si solar cells 09 p1273 N68-18466 14 p2191 N68-24687 Design criteria for five el roll-up solar arrays [NASA-CR-93595] nt folding arm used in Aluminum vapor deposit timal electrical contact to a [NASA-CR-94800] e cold substrate for op-09 p1276 N68-19021 NASA educational facts on present and future elec-tric power sources for space application [NASA FACTS-NF-38] 09 p1277 N68-19128 14 p2192 N68-24921 Sputtering method for fabricating aluminum and nickel contacted solar cells [NASA-CR-94768] 14 p2193 N68-25098 Detail design, acceleration support fixtures for deployal [NASA-CR-93670] and vacuum tests, and plar array 09 p1277 N68-19334 Silicon solar cell con (NASA-TM-X-59774) Operation of solar cell arrays in dilute streaming 14 p2195 N68-25622 Radiation damage ch n solar cells and n-p sola [NASA-TM-X-59749] tics of lithium doped p NASA-CR-723761 09 p1277 N68-19356 14 p2195 N68-25624 Large area deployable solar ([NASA-CR-93673] 09 p1277 N68-19379 f cadmium sulfide thin quality control testing 15 p2389 N68-25699 Soldering or epoxy to film solar cells into most [NASA-CR-72414] Fabrication of three fl germanium solar thermoel [NASA-CR-72386] te sections for silicon-generator 10 p1459 N68-19707 Effects of 22 MeV proton and 2.4 MeV electron uliation on boron and aluminum doped silicon solar synchronous spacecraft INASA-TM-X-632321 15 p2389 N68-25736 Solar cell power syste chniques for spacecral applic INASA-TN-D-44071 10 p1577 N68-19924 15 n2390 N68-26352 (TG-950) Cadmium sulfide sc [NASA-CR-72382] ign criteria 10 p1461 N68-20410 Solar cell damage from ad electrons using outp retically trapped proto tage data from Explor Construction and perfo sulfide thin film solar cells [NASA-TM-X-1519] 23 satellite (NASA-TM-X-60138) 10 p1461 N68-20432 16 p2593 N68-27541 Materials, plasma, and el unconventional energy conv [NASA-CR-93979] ochemical research on on techniques 11 p1628 N68-21035 d testing of deployable cecraft applications 16 p2594 N68-27942 Flow of conducting li-high fields on surface ch als study of silicon solar annular gap, effects of stributions, and materiolar cell d impact damage and pa on Explorer 23 natelia [NASA-TN-D-4284] 11 p1746 N68-21037 ot for calibrating short cir-t voltage of solar cells 11 p1629 N68-21098 16 p2774 N68-28198 Mercury electron-box SERT 2 spacecraft and so [NASA-TM-X-52423] at thrusters, and array 11 p1777 N68-21233 Balloon and sate thin film solar cells (ARL-67-0282) tests of cadmium sulfide NASA-CR-86064 17 p2810 N68-28710 11 p1631 N68-21602 lis, and relative efficie e cryst Feasibility of 30 watts per pound roll-up solar array design of engineering demonstration model will deployability of selected flight configuration and thermal cycling tests of array [NASA-CR-94243] 12 p1817 N68-21875 17 p2814 N68-28730 12 p1817 N68-21879 17 p2914 N68-28741 asibility of fabric g 30 watt/pound roll up solar NASA-CR-94249] 12 p1818 N68-21943 Wrap drum, adhesiv watts per pound rollup s [NASA-CR-94245] d vibration tests for 30 sique for fabrication of ters and panels 12 p1818 N68-22010 Mechanized module to eat resistant solar cell co

ms analyses for single-

12 m1819 N68-22231

Structural, electrical, a panel oriented solar array [NASA-CR-94318]

e depen

entrol, date transmis-rartificial autolites p2975 N68-28548

Statis tion but ponent of

SUBJE

Frequeray inten

Solar c

Energe tion mean flight (NASA-1

mary and tion of so shields

INASA-C NASA-C OGO-A

NASA-C Suprathe ectron o INASA-TI SOLAR CYC

> Twenty-Universa (PB-17607 Polar cap

NASA-TN Polar cap tive solar re [NASA-CE U SUN SOLAR ECL

Solar ecition of solar rocket-born (BMWF-FE

Photogra solar eclipse [NASA-CR Non-ectig Spectropi tained at 19 [AFCRL-68

Germanium solar photoelectric cells for high intensi-ty solar energy conversion devices 17 p2815 N68-28746 ectric cells for spacecraft 17 p2815 N68-28747 Postflight analysis data on Nimbus 1 solar array drive motor fallure [NASA-CR-95482] 17 µ2815 N68-28825 Lithium doping effect on radio ionn solar cells [NASA-CR-93735] 17 p2959 N68-28996 Volt-ampere curves properties of electron is [NASA-TM-X-63272] ncy, and photovoltaic solar cells 17 p2816 N68-29436 Automatic solar cell test fac [ESRO-TN-8] ly at ESTEC 18 p3062 N68-30145 d there of satellite to demo Solar cell b strate two as using magnet (TG-978) ity gra tic and hy mping techniques 18 p3007 N68-30713 [NASA-TM-X-52458] 19 n3202 N68-31068 Space environment a fide thin film solar cells [NASA-TM-X-52436] s tests of cadmium sul-19 p3202 N68-31095 eycle power supplies 19 p3203 N68-31096 Solar and radioisotop [NASA-TM-X-52438] Growth and evaluation cells [BMWF-FB-W-68-28] 19 p3203 N68-31262 Solar cells and he RAE-TR-67277) 19 p3204 N68-31381 solar cells [NASA-CR-96012] 19 p3204 N68-31391 Design and performance electrical power generation [NASA FACTS \$-6/3-68] silicon solar cells for 19 p3205 N68-31526 mage to silicon solar [NASA-CR-95997] 19 p3206 N68-31622 og of preliminary 30 watts per pound roll-[NASA-CR-96230] 20 p3402 N68-32561 staining p-n silicon 20 p3402 N68-32919 Impurities effect on carrier lifetime in bulk solar cell [NASA-CR-96272] 20 p3573 N68-33104 Development and to film solar array subpane [NASA-CR-72439] of cadmium milfide thin 20 p3403 N68-33207 emittance, and other properties lar cell and five metals for use on 20 p3404 N68-33336 Interaction of lithium vaciar cells by one MeV els [NASA-CR-96368] ets induced in silicon 20 p3404 N68-33502 ion engine and 550 W reposed for Black Arrow X5: sployable solar array 21 p3778 N68-34172 rical properties of cadmi-mulated solar intensities Thermal radiative and elect um sulfide solar cell at low a and temperatures (NASA-TN-D-4818) 22 p3808 N68-35467 Lithium-diffused p-n sili version efficiency and in radiation effects [NASA-CR-97077] solar cells of high con-22 p3808 N68-35814 Parametric performance and design criteria for as-using feasibility of large solar array and fael cell nome as primary power source for lunar-based water (NASA-CR-519791 22 p3809 N68-36000 Development and op-turing system for fabrics for alicon solar cells [NASA-CR-97154] of high vacuum sput ick integral coverslip 23 p3992 N68-36097 Thick film vacuum mettering for solar co [NASA-CR-97123] n of silicon dioxide by

23 p3992 N68-36241 ped silicon solar cells 23 p3993 N68-36498 er solar electric propul-

Design of 30 watts [NASA-CR-97205] 23 p3994 N68-36618 Solar cell testing, and pr determining silicon solar ce [ESRO-TM-133/ESTEC/] ires and apparatus for 23 p3995 N68-37031 Seiar cell and bat [RAE-TR-68052] or Ariel 3 satellite 23 p3995 N68-37130 om lithium doping 24 p4199 N68-37689 Solar cell properti [NASA-CR-97344] Sky radiation effects 80,000 feet [NASA-CR-97348] tput of solar cells at 24 p4199 N68-37748 of solar cells on synchronous orbiting at (NASA-TM-X-63379) 24 p4199 N68-37832 ed and soldered cover silicon solar cells 24 p4200 N68-37935 plans for radiation pro [NASA-TM-X-1687] Preliminary investor lunar-based wate [NASA-CR-98023] large solar cell arrays 24 p4201 N68-38113 Uniform darrings to lar cells by fast protons [NASA-CR-97418] 24 p4201 N68-38209 U CHROMOSPHERE SOLAR COLLECTORS Mathematical model of solar collection limitation dynamic converters 08 p1120 N68-17795 Limitations of solar collectors and receivers for uce applications 08 p1121 N68-17804 Parametric analysis of efforace errors and rim angle, colle error, and roceiver temperatic collector thermal efficiency [NASA-TN-D-4415] 09 p1276 N68-18998 Feasibility of 30 watts per pound roll-up solar array-sign of engineering demonstration model with ployability of selected flight configuration and ther-it configuration. deployability of sele-mal cycling tests of a [NASA-CR-94243] 12 p1817 N68-21879 ue for fabrication of Mechanized module nat resistant solar cell o and panels 12 p 818 N68-22010 [RF-93-O] iliary power units (NASA-TN-D-4532) Microsurface therma and nickel coatings [NASA-TT-F-11659] Fabrication and test p collector-radiator heat p [NASA-CR-94402] watts per pound roll [NASA-CR-96230] OLAR COMPASSES U BEACONS

es of expandable whirling me encentrator used in conjunct sion systems for spacecraft at 12 p1819 N68-22258 ity of astronomical mir m alloy with chromium 12 p1889 N68-22401 ce of solar thermi 12 p1821 N68-22991

sting of preliminary 30 20 p3402 N68-32561

GYROCOMPASSES
OMNDIRECTIONAL RADIO RANGES
RADAR BEACONS
RADIO BEACONS

SOLAR CONSTANT

ype models developed for Breadboard and pr [NASA-CR-90098] 01 p0064 N68-10624

Short-circuit current measurement of covered and uncovered efficon solar cells at irradiance up to five solar constants for different angles of incidence (ESRO-TM-113/ESTEC/) 13 p1996 N68-23984

ensured from Convair 990 aircraft at 38000 fe (NASA-TM-X-63324) 21 p3763 N68-34697 SOLAR CORONA

Statistical ray analysis of radio wave scattering by isotropically turbulent nonhomogeneous solar [NASA-CR-92698] 07 p1075 N68-16270 er corona, and average

Radar measurements radar cross section of su [NASA-CR-92995] 07 p1076 N68-16518 transmission of solar

06 p1240 N68-17850

e infrared ob tions of outer solar of (AFOSR-67-2038) 09 p1331 N68-18356 infrared observ wavelength of 22 m [NASA-CR-969] r solar corona at 10 p1593 N68-20353 Solar models critic features and wind dyn [ESRO-SN-5] red for transition zone 12 p1916 N68-22246 with cosmic rays and X Polish experi rays in solar con [JPRS-45403] 14 p2339 N68-24786 Solar X rays and ra transitions in solar co [NASA-CR-95061] n by free-free electron 15 p2548 N68-25666 Non-eclipse obset [NASA-CR-85621] 15 p2555 N68-25708 Aerobee 150 rocket ticles of unknown origi [NASA-CR-85622] splu showing par-15 n2562 N68-26837 cal light, and dust density and 16 p2758 N68-27478 Brightness of zodincal light as d outer corons 16 p2759 N68-27481 Solar F-corona obser-oneclipse periods, zodia ents, and astronomical n s during eclipse and lit and cloud measure-16 p2760 N68-27489

rticles of unkno in photographed in solar 16 p2761 N68-27493 Proton flares and solar of [M-7130] in 11-year cycle 20 p3581 N68-32456

del of primitive solar Physical co nebula [NASA-CR-96363] 20 p3592 N68-33435 Coronal Fe 14 em [NASA-CR-96712] reduced to line profiles 21 p3765 N68-34067

21 p3763 N68-34774 Design of spectrols [NASA-CR-96785] termination of primary during flares 22 p3956 N68-35362 Cosmos 766 heliogr X ray generation in soli

Radar reflectivity fr fluctuations in return reflectivity of corons a corona and effect of due to time varying 24 p4338 N68-37460

dynamic properties of (NASA-TM-X-53767) 24 p4324 N68-37841 [AFCRL-68-0312] k heated corona 24 p4325 N68-38132

Solar corona pho ten by Surveyor 7 lunar 24 p4344 N68-38257

Model of large scale mag coronal and interplanetary s [AD-674527] ic field configuration of netic field 24 p4339 N68-38364 SOLAR CORPUSCULAR RADIATION

Payload comiderate seasuring solar corpu-nd meteoroids at peri 06 p0915 N68-15024

Origins of comets and radiation and solar corp [FTD-HT-23-795-67] s with emphasis on light 06 p0838 N68-15483 due to electromagnetic solar corpuscular radia-[T-4-F] 08 p1167 N68-17533

e 150 rocket aphs showing par-Aerobee 150 rocket ticles of unknown origi [NASA-CR-85622] 15 p2562 N68-26837 Electrons and pro getic solar particles [NASA-CR-95732]

16 p2753 N68-27464 Analysis of corona light coronagraphs flo [RASA-CR-96359] photographed by white obee (50 vehicle 20 p3592 N68-33453 s effect on emerge fiction field of sun

21 p3760 N68-33848 OLAR COSMIC RAYS

Compatibility of in rplanetary electromagnetic field odels with counic ray modula-01 p0129 N68-10035

Diurnal variations, a low energy counic ray o (TR-0158/3260-20/-2) 04 p0570 N68-12927

Radiation effects in [NASA-CR-97306]

INASA-CR-97196]

23 p3993 N68-36500

06 p0900 N68-15051 Solar-diurnal cosmic ray varia tion in July 1959 06 p0900 N68-15052 ic ray hard component near lukhaya Bay station obser-tion chamber 06 p0900 N68-15053 ar maximum, based on Tuk tions using shielded ionization nic ray intensity varia-solar activity 06 p0900 N68-15054 Diurnal and half-diurnal co as in relation to magnetic as Frequency distribution of any intensity and solar-diurnal len changes in cosmic riations 06 p0901 N68-15055 Solar cosmic ray generation solar chromospheric eruptions ind energy spectra, and 06-p0903 N68-15068 Solar cosmic ray diffus ergy and distance to so ient dependence on 06 p0903 N68-15069 Solar cosmic ray behavior and modulation in inter-anetary space, and dynamic model of solar wind 06 p0904 N68-15083 ergetic space radiation and galactic cosmic radia-neasured for radiation hazards in manned space [NASA-TN-D-4404] 07 p1077 N68-16837 mena associated with nd 28, 1967 10 p1588 N68-20275 lar and terrestrial phenom particle events on May 23 ar ectroheliogram and spectroheli ic ray limb flare characteristics oscope analyses of 13 p2148 N68-23991 ectral characteristics and dose calculations for pri-r and secondary particles that result from interac-of solar and galactic cosmic rays with aluminum mary and secondary particles tion of solar and galactic cou 15 p2551 N68-26133 ation of counic ray in-17 p2963 N68-28624 Solar cosmic ray variation lar physics, solar wind me tic radiation, and radiation ns and their relationship to agnetic fields, electromag-n hazards to manned space INASA-CR-95689] 17 p2964 N68-29032 w energy solar cosmic ray Instrumentation data for low measurements using OGO-F as [NASA-CR-96312] 20 p3582 N68-33161 OGO-A scintillati steet 3 to 90 MeV protons in solar cosmic rays [NASA-CR-96278] 20 p3591 N68-33302 Particle density gradie coumic ray daily variat el for second harmon 21 p3761 N68-34008 Suprathermal X ray bremsstrahlung from proton-ectron collisions in galactic and solar cosmic radia-

INASA-TM-X-63378) 24 p4314 N68-37856 SOLAR CYCLES
NT SUNSPOT CYCLE Twenty-seven day solar cycle on tropospheric tem 06 p0837 N68-15407 Universal time changes in geomagnetic solar quiet daily variation - spherical harmonics coefficients [PB-176073] 10 p1525 N68-20425 dy of solar cycle variation in Polar cap absorption stu-dar proton emissions from [NASA-TN-D-4473]

15 p2549 N68-25880 lated with RF profiles ac-ted phenomens 19 p3361 N68-31352 Polar cap absorption correlative solar regions, and associate [NASA-CR-92210] SOLAR DESK

SOLAR ECLIPSES

Solar eclipse program and experimental determina-on of solar chromospheric-ultraviolet radiation using rocket-borne monochro [BMWF-FB-W-67-12] 06 p0905 N68-15316 hic search for small bright comets during Photographic seasolar eclipse [NASA-CR-93774] 10 p1592 N68-20010 Non-eclipse obser (NASA-CR-856211 15 p2555 N68-25708 Spectrophotometric star tained at 1962 total solar of [AFCRL-68-0057] is for spectrograms ob-

15 p2561 N68-26587 Photoelectric observations of photometric axis of discal light at time near total solar eclipse 16 p2759 N68-27482

rvations of F region during solar eclipse [NASA-CR-85203] 16 p2656 N68-27683 Miniature scintilla tection of fast neutri solar eclipse of Nove [SC-T-66-1514] gh altitude nuclear de-rocket Orion 2 during 17 p2876 N68-28394 arce over sump

17 p2972 N68-29380 Extraterrestrial radia 1968, solar prominence solar eclipse of September of radio bursts, and lunar 17 p2973 N68-29451

Experiment for deter g solar neutrons in at-(SC-T-68-1518) 18 p3160 N68-30710 1966 (SC-T-68-1516) 19 p3273 N68-31843

Stratospheric circulation res [ECOM-5189] ruse to solar response 19 p3273 N68-31876 Red and green coronal lines interferometer during solar ec [RTS-4354] recorded by Fabry-Perot

20 p3585 N68-32627 bervation at Bangkok eclipse 23 Novembe 1965 (STR-32) 21 p3686 N68-34468 ring eclipse as seen from

Occultation of sun's disk dur sounding rocket [ESRO-SM-68/ESDAC/] 23 p4172 N68-36992 SOLAR ENERGY

Development of sil 03 p0303 N68-12303 Energy transport as meridional rotation mod-(UCRL-50224) for solar zonal and

03 p0415 N68-12433 surement of solu esis, conference 1967 10 p1469 N68-20408

General principles and to of chemical, nuclear, therm trical or mechanical power [FTD-MT-64-355] s on direct conversion solar energy into elec-15 p2390 N68-26786

energy concentrator for [NASA-TM-X-59872] wer conversion 16 p2593 N68-27564 Solar energy con ology, design, and fishrication techniques [NASA-TM-X-59043] 16 p2593 N68-27643

Performance of expe hirling membrane solar (L-5484) 16 p2594 N68-27926

Solar Energy Th /SET/ generator design (NASA-CR-96013) 19 p3204 N68-31407

SOLAR ENERGY ARSORBERS

Titunium alloy honey absorber of solar energy [NASA-TN-D-4727] ib with blackened walls as 18 p3007 N68-30751

SOLAR FACULAE

SOLAR FLARES

Explorer 12 observa energetic storm particle [NASA-TM-X-55963] of solar cosmic rays and owing solar flare activity 01 p0130 N68-10084

study charged particles on 2 Sep 1966 01 p0130 N68-10375 emitted during solar flar [NASA-TM-X-63012]

66 solar activity data col-News release on Cor ction and processing 01 p0132 N68-10895

ted poly/vinyl acetate lopment and flare warn ig of solar X rays for en 02 p0292 N68-11449

on monitoring of solar X 02 p0263 N68-11451

enhancement as a structure of dynamo winds [P-3690] 03 p0412 N68-12061 ing geophysical estellite sola solar radio and energetic parti

NASA-CR-915101 04 p0570 N68-13579

nagnetic phes [REPT.-67-18] 04 p0570 N68-13647 res, lunar craters, planets. 06 p0907 N68-15027 le Carlo methodi interplanetary of [NASA-TN-D-4311] 06 µ0906 N68-16000 Lunar maps and solar

08 p1238 N68-17527 Large solar flare and [AFCRL-67-0622] d radio bursto 08 p1233 N68-17935 [NASA-CR-93231] 08 p1234 N68-18027

08 p1234 N68-18640 lar flares, type 4 bursts, Satellite and rocket measurements of galactic countrys, solar plasms, solar flare particles, and radiation (ESRO-SP-19) polar cap absorption, a [NASA-TM-X-63120] 09 p1417 N68-19450 restrial phenomena associated with its on May 23 and 28, 1967 10 p1388 N68-20275

Solar flare effects and very low frequency radio wave observations of lower ionosphere [RAE-TR-67201] 10 p1588 N68-20487 net aids for predicting daily values weed at Ottawa Solar event forecast at f 10.7 cm flux measured REPT.-7668-297]

13 p2098 N68-23228 Data analysis of RF and solar events to determine olar conditions that predict flares followed by polar cap absorption even INASA-CR-620671 13 p2146 N68-23538

Radio brightness temperature and sunspot size ob-reations statistically analyzed for solar flare predic-[AFCRL-67-0670] 13 p2147 N68-23858

nce and flare yearol Reported so (AFCRL-67-0695) 13 p2148 N68-24050 octra of interplanetary flares 14 p2339 N68-24727 Time histories and er relativistic electrons from [NASA-TM-X-63210]

injun sate [NASA-CR-89213] 15 p2548 N68-25710

High energy solar flare proton irradiation tests of Mariner 4 subsecentilies [NASA-CR-93148] 16 p2631 N68-27203

n magnetic field change on to magnetotal on & OGO-C observation of and propagation of pert luly 1966 NASA-TM-X-63247] 16 p2753 N68-28246

and interplanetary mag-round to discussion of ted with solar flares 17 p2964 N68-29174 Structure of quiet solar victic field reviewed as b solar wind disturbant [NASA-CR-95710] Visibility and dis

18 p3159 N68-29606 en lines in spectra of Comparative study of hyd lar flares and unperturbed 18 p3159 N68-29700

Observation and [APCRL-68-0104] 18 p3160 N68-30231 with RF profil tive solar regions, an INASA-CR-922101 9 p3361 N68-31352

Solar particle ob February 1967 corre [NASA-CR-95984] om 24 January to 24 olar flare activity 19 p3361 N65-31506

(RTS-4244) 20 p3584 N68-32302 Intensity time vari of counic radiation and seutron leakage from earth atmosphere [APCRL-68-0277]

20 p3581 N68-32364 Proton flares and ([M-7130] na in 11-year cycle 20 p3381 N66-32456 nergy spectra of solar plar flore

Distribution, intensity, protons in magnetosphere NASA-TM-X-63316] 20 p3581 N68-32900 er finre s field component 20 p3581 N68-32930

Ext 1968, radiat

Prof [M-7]

The

loop p

SOLAR

Diur TR-0

Com and ra

MeV/s

Nucl

1966 M

Solar

Expl of four

netic et

Obse

Polar

INASA

Rock belt

Atten

Obser [AFCR

Inject ured by ess

Obser and alph Aug. 196 [TR-015

NT SU

Light vehicle i [NASA-

Radiat

Zenith

NASA-

dence of determine [NASA-

Bright centimet comparis spheric n [TR-015]

(SU-IPR-

Atmos infrared t

Dispari data and t [W-49]

ESSA : distribution leaving es

[NASA-CR-96315]	ociated with flares 20 p3582 N68-33082
Model study for solar conti- plication to three observed ev [SR-013]	ents 21 p3761 N68-33964
Cosmos 766 heliographic o X ray generation in solar coro	determination of primary ma during flares 22 m1956, N68, 35362
Injection spectra of protos sured by diffusion model that	s from solar flares mea- t considers particle hard-
ness	22 p3956 N68-35494
Observation and interpretat [AFCRL-68-0316]	
Atmospheric motions ded variations associated with solu- time history of solar flare curr- on ionoapheric winds	or flares - extent to which
	23 p4054 N68-36306
Observatory data correlatio flures of Aug. 28 and 30, 1966 [NASA-CR-97019]	n and evaluation on solar
Observations over solar on	23 p4163 N68-36603
Observations over polar ca and alpha particles emitted Aug. 1966	during solar flare of 28
[TIK-0158/3260/20/8]	23 p4163 N68-36880
Model study and observed of sociated phenomena in solar a	inta on transient flare-as- tmosphere 24 p4338 N68-37505
OLAR VLUX	24 pesse (408-37303
Computer program for simp	ulated solar flux incident
on spacecraft in vacuum test cl [ESRO-TM-11]	namber 07 p0982 N68-16555
Effects of core spin-down pr	
solar evolution theory [NASA-TM-X-60923]	09 p1416 N68-19136
Effects of chromospheric pr	
INASA-CR-961381	19 p3361 N68-31651
Solar radio burst data reco	
1967	TARREST MANAGEMENTS
[SR-014]	20 p3582 N68-33223
Theoretical temperature and of E and F ionospheric regions	I electro denuity promes
(NASA-TM-X-63345) OLAR FLUX DENSITY	22 p3956 N68-35750
Solar radio flux density and d	fistinct events tables
(SR-10) OLAR GENERATORS	01 p0131 N68-10672
Thermoelectric and mechan	ical performance of all-
icon-germanium solar thermoe [NASA-CR-72340]	03 p0303 N68-12252
Six converter solar thermioni [NASA-CR-92586]	ic generator 06 p0769 N68-15766
Testing, fabrication, config electrical performance calcula	puration selection, and
electrical performance calculat generator development [NASA-CR-92520]	06 p0771 N68-16074
Lunar surface layer consider	
for generating power during lun	ear night
Optimum Mariner spacecra models	ift solar power system
[NASA-CR-95263]	16 p2594 N68-27974
Design techniques for solar p icon photovoltaic cells	generators based on sil-
to protovonan cem	17 p2814 N68-28740
Space environment simulational solur generator components, as	on facilities for testing and test data application

on spacecraft in vacuum ter [ESRO-TM-11]	or p0982 N68-16555
	process on neutrino flux in
solar evolution theory [NASA-TM-X-60923]	09 p1416 N68-19136
	parameter fluctuations on
iolar radio emission [NASA-CR-96138]	19 p3361 N68-31651
	ecorded during Jul Sep.
1967 [SR-014]	20 p3582 N68-33223
Theoretical temperature	and electro density profiles
of E and F ionospheric regio [NASA-TM-X-63345]	22 p3956 N68-35750
SOLAR FLUX DENSITY	LOCAT BOTTO TOUT ARREST
Solar radio flux density ar (SR-10)	nd distinct events tables 01 p0131 N68-10672
SOLAR GENERATORS	
	hanical performance of sil-
icon-germanium solar therm [NASA-CR-72340]	os posos N68-12252
Six converter solar thermi [NASA-CR-92586]	ionic generator 06 p0769 N68-15766
Testing, fabrication, cor	nfiguration selection, and
electrical performance calci generator development	
[NASA-CR-92520]	06 p0771 N68-16074
Lunar surface layer consi for generating power during [NASA-TM-X-1560]	dered to store solar energy lunar night 10 p1461 N68-20363
Optimum Mariner space	craft solar power system
models [NASA-CR-95263]	16 p2594 N68-27974
Design techniques for sol icon photovoltaic cells	ar generators based on sil-
Committee on the Works	17 p2814 N68-28740
Space environment simul solar generator components to solar generator design	lation facilities for testing s, and test data application
to some growth orange	17 p2814 N68-28745
Design and performance moelectric generators for sol	study of flat plate ther-
moelectric generators for soi [NASA-TM-X-52451]	19 p3202 N68-31018
Effect of boost environme solar array, its release and d in space, and electrical power	ent on design of large area leployment on ground and r source analysis
[NASA-CR-95999]	19 p3284 N68-31404
generators with array deploy	structural design of solar ment and retraction capa-
(NASA-CR-97208)	23 p3994 N68-36630
SOLAR GRAVITATION	
Lunar-solar gravitational satellite with twenty-four hou	perturbations for artificial
[NASA-TM-X-60931]	09 p1427 N68-19355
U HEAT FLUX	POLICIAL STATES
SOLAR HEATING	Contract Contract

Changes in lower exosphere since solar minimum rom atmospheric density measurements by Explorer 9 nd Explorer 14 satellites

21 p3770 N68-34288

s 8-33082	SOLAR INSTRUMENTS NT SPECTROHELIOG	DADUE
and ap-		l advances in equipment an observations
8-33964	[NASA-CR-94365]	12 p1966 N68-2225.
primary	Operational summary	for astronomical observator
8-35362	investigating solar magnet [AFCRL-68-0326]	for astronomical observator tic fields 20 p3584 N68-3238
res mea- de hard-	SOLAR LONGITUDE	
8-35494	Filter evaluation for a solar right ascension deter	solar observation transits is rminutions
omena		23 p4168 N68-3649
8-35889 nagnetic	SOLAR MAGNETIC FIELD Observations related to	
to which		large-scale structure of inter solar origin, and geomagnetic
ide data	[NASA-CR-93309]	09 p1416 N68-1855
8-36306 on solar	Solar magnetograph of brightness, velocity, and n	observation of photospheric nagnetic fields
	brightness, velocity, and n [NASA-CR-94225]	12 p1964 N68-21896
8-36603 protops	Telescopes and spectr distribution and intensity of	oheliographs to photograph of solar magnetic fields 12 p1872 N68-2212:
protons u of 28	[ATR-68/8102/-4]	12 p1872 N68-22125
8-36880	Solar magnetic field me	13 p2147 N68-23978
flare-as-	Measurement of line of	sight component of magnetic ect seen in quiescent solar
8-37505	prominences	17 p2963 N68-28475
incident	Mathematical model ar	nd Explorer 35 measurement ar plasma flow in vicinity of
16555	moon	17 p2949 N68-28901
o flux in	[NASA-TM-X-63270] Model of interplanetar	ry and solar magnetic field
19136	structure above photosp	ry and solar magnetic field here using Green function ions
tions on	[NASA-CR-95709]	17 p2971 N68-29175
1-31651	Magnetic fields of sun	and effects on events near
Sep.	[NASA-CR-95702]	17 p2971 N68-29374
3-33223 profiles	velocity of solar wind and i	ment of discontinuities in in direction of solar magnetic
-35750	field [NASA-TM-X-63287]	18 p3159 N68-29915
sles 1-10672	Calibrating recordings comparison with observati (RTS-4236)	of solar magnetograph by one of Zeeman splitting 20 p3583 N68-32271
-10072	Operational summary for	or astronomical observatory
e of all-	(AFCRL-68-0326)	or astronomical observatory ic fields 20 p3584 N68-32389
-12252	Temporal variations of	of magnetic fields during
-15766	solar regions [RTS-4239]	arance of sumspots in active
n, and		20 p3586 N68-32654
rmionic	[RTS-4713]	olar magnetograph 22 p3873 N68-34852
-16074	Mechanisms of solar at	tmosphere, magnetism, and
energy	(CEA-BIB-121)	23 p4163 N68-37175
-20363	SOLAR OBSERVATORIES NT AOSO	Phoney (Major) and a
system	NT AOSO NT OSO-C	
-27974 on sil-		are of solar observatory in
	Norway [AFCRL-68-0022]	10 p1531 N68-20362
-28740 testing	Telescopes and mectro	heliographs to photograph
ication	distribution and intensity of	heliographs to photograph f solar magnetic fields 12 p1872 N68-22125
-28745	Recent techniques and	advances in equipment and
ther-	instrumentation for solar of [NASA-CR-94365]	advances in equipment and servations 12 p1966 N68-22253
31018	Design and operation of t	triaxial magnetometer facili-
pe area	[TR-0158/9220-02/-5]	triaxial magnetometer facili-
31404		13 p2046 N68-23047
f solar	times compared [AFCRL-67-0695]	currence and flare patrol
свра-		. 13 p2148 N68-24050 far observation transits in
36630	solar right ascension determ	inations 23 p4168 N68-36494
tificial	Orbiting solar observato	ory to obtain data on fine
19355	[ESRO-SP-25]	23 p4177 N68-37107

AR INSTRUMENTS
T SPECTROHELIOGRAPHS Recent techniques and advances in equipment and strumentation for solar observations NASA-CR-94365] 12 p1966 N68-22253 Operational summary for astronomical observatory vestigating solar magnetic fields AFCRL-68-03261 2 20 p3584 N68-32389 AR LONGITUDE Filter evaluation for solar observation transits in lar right accension determinations 23 p4168 N68-36494 AR MAGNETIC FIELD Observations related to large-scale structure of inter-netary magnetic field, solar origin, and geomagnetic [ASA-CR-93369] 09 p1416 N68-18552 Solar magnetograph observation of photospheric ightness, velocity, and magnetic fields (ASA-CR-94225) 12 p1964 N68-21896 Telescopes and spectroheliographs to photograph stribution and intensity of solar magnetic fields ATR-68/8102/-4] 12 p1872 N68-22125 TR-68/8 1027-93 Solar magnetic field measurements 13 p2147 N68-23978 Measurement of line of sight component of magnetic lds from Zeeman effect seen in quiescent solar 17 p2963 N68-28475 Mathematical model and Explorer 35 measurement magnetic field and solar plasma flow in vicinity of 17 p2949 N68-28901 ASA-TM-X-63270] Model of interplanetary and solar magnetic field nucture above photosphere using Green function lution to Maxwell equations IASA-CR-93709] 17 p2971 N68-29175 Magnetic fields of sun and effects on events near ASA-CR-957021 17 p2971 N68-29374 Explorer 34 measurement of discontinuities in locity of solar wind and in direction of solar magnetic ASA-TM-X-63287] 18 p3159 N68-29915 Calibrating recordings of solar magnetograph by mparison with observations of Zeeman splitting TS-4236] 20 p3583 N68-32271 20 p3583 N68-32271

Uperational summary for astronomical observatory realignating soler magnetic fields

FORL-68-03261

Temporalists 20 p3584 N68-32389 emporal variations of magnetic fields during dopment and disappearance of sunspots in active TS-4239] 20 p3586 N68-32654 S-4239 | roblems of calibrating solar magnetograph 22 p3873 N68-34852 TS-4713] dechanisms of solar atmosphere, magnetism, and EA-BIB-121] 23 p4163 N68-37175 AR OBSERVATORIES
AOSO
OSO
OSO-C lower telescope structure of solar observatory in 10 p1531 N68-20362 elescopes and spectroheliographs to photograph ribution and intensity of solar magnetic fields FR-68/8102/-4] 12 p1872 N68-22125 tecent techniques and advances in equipment and rumentation for solar observations ASA-CR-94365] 12 p1966 N68-22253 lesign and operation of triaxial magnetometer facili-faciar observatory t-0158/9220-02/-5] 13 p2046 N68-23047 orted solar flare occurrence and flare patrol es compared CRL-67-0695] ... 13 p2148 N68-24050

Jet Propulsion Laboratory ephemeris tapes for planetary and lunar positions, velocities, nutation and nutation rates in longitude and obliquity from Dec. 1549 to Jan. 2000 [NASA-CR-90422] 02 p0266 No8-11406

NT PERIHELIONS

Gravitation theory - weight growth of particle mass applied to planetary rotation in solar orbits [REPT.-67-27] 07 p1078 N68-16255 07 p1078 N68-16255 Tables of space vehicles launched into heliocentric, lenocentric, and earth-moon systems orbits since Jan. [RAE-TR-67059] 08 p1245 N68-17909 Comprehensive summary of space navigation problems and instruments for interplanery flight [NASA FACTS-NF-37] 09 p1372 N68-19046 IBM 7074 computer program for computation of in-solation tables for surface of Mars (NASA-CR-94531) 13 p2150 N68-23429 Experimental and electronic requirements for solar probe with perihelion of 0.3 AU IR-95-0E 18 p3168 N68-30814 SOLAR PARALLAX Relationship and tasks of astronomical photography to modern practices in astronomy 23 p4168 N68-36496 SOLAR PHYSICS Advances during 1966 in astronomy, exobiology, ionospheric sciences, radio and solar physics, and planetary atmospheres and planetary atmospheres and planetary [NASA-8P-155] 06 p6913 N68-15748 NASA programs on solar physics, and relationship of olar astronomy to solar space astronomy 10 p1596 N68-20379 High altitude observatory research and facilities pro-13 p2062 N68-23793 Solar cosmic ray variations and their relationship to solar physics, solar wind magnetic fields, electromag-netic radiation, and radiation hazards to manned space [NASA-CR-95689] 17 p2964 N68-29032 Review of ionospheric research studies and impact of rudies on understanding radio communications and plar terrestrial relationships solar terrestrial relati [NASA-CR-95699] 17 p2881 N68-29397 Photospheric inhomogeneities effect on emergent radiation field of sun 21 p3760 N68-33848 Mechanisms of solar atmosphere, magnetism, and (CEA-BIB-1211 23 p4163 N68-37175 SOLAR POSITION Computer program for predicting apparent position of sun [WRE-TN-SAD-177] 07 p1081 N68-16682 Spectral radiance measuren [NRL-6615] nts of horizon sky 08 p1169 N68-17659 SOLAR PROBES Design of central data system for advanced deep NASA-TM-X-60801 05 p0631 N68-14643 Theories, measuring problems, and instrumentation for solar wind studies and probes 06 p0900 N68-15025 Design criteria, and concepts for interplanetary solar 06 p0917 N68-15850 DGRR-67-0241 Simulated sequential decoder program in Fortran for solar mission simulation [NASA-CR-73174] 06 p0802 N68-16048 Silicon solar cell concept for Pioneer spacecraft solar [NASA-TM-X-59774] 14 p2195 N68-25622 European-NASA cooperation on solar probe and Ju-[NASA-TT-F-11810] 17 p2964 N68-28338 Experimental and electronic requirements for solar probe with perihelion of 0.3 AU [RF-95-OE] 18 p3168 N68-30814 Design and performance study of flat plate thermoelectric generators for solar probes
[NASA-TM-X-52451] 19 p3202 N68-31018 Design of spacebore central data system for solar NASA-CR-73211) 22 p3844 N68-35627 Stochastic and kinetic interaction processes related to solar probe mission 22 p3962 N68-35784 SOLAR PROMINENCES Tables of profiles on mean intensity photospheric radiation in H alpha line for moving solar prominence 07 p1076 N68-16636 Spectroheliogram analysis of solar calcium rominences by U.S.S.R. observatory atory 13 p2147 N68-23885

and Explorer 14 satellite [NASA-TM-X-61239]

ctroheliogram and spectro c ray limb flare characterist

13 p2148 N68-23991 Measurement of line of sight component of magnetic fields from Zeeman effect seen in quiescent solar

17 p2963 N68-28475

Extraterrestrial radiation, solar eclipse of September 1968, solar prominences and radio bursts, and lunar

17 p2973 N68-29451

Proton flares and solar corona in 11-year cycle M-7130] 20 p3581 N68-32456 [M-7130] Theoretical model of loop prominence flare with compression by magnetic fields causing solar flare and loop prominence

21 p3761 N68-33953

SOLAR PROTONS

Diurnal variations, and pitch angle distributions of low energy cosmic ray ex (TR-0158/3260-20/-2)

04 p0570 N68-12927

Combination Cerenkov and scintillation detector, nd range scintillator for proton and helium nuclei senic ray spectra between 100 and 2000 07 p1076 N68-16723

and energy spectra in Sep. 2, Nuclear charge spectra [NASA-TM-X-63111] 08 p1235 N68-17252

Solar sunspot cycle observations for high energy roton shower predictions

10 p1553 N68-20568

Explorer 26 observations of solar protons at altitude of four earth radii inside magnetosphere near geomag [NASA-CR-94569] 13 p2145 N68-23445

Observation and forecasting of soli f solar proton events 13 p2147 N68-23939

Polar cap absorption study of solar cycle variation in solar proton emissions from sun [NASA-TN-D-4473] 15 p2549 N68-25880 Rocket measurements of protons in inner radiation

15 p2549 N68-25887

Attenuation effects resulting from bombardment of polar D region by high energy protons generated by solar flares - effects on non-inverse frequency squared absorption events 17 p2879 N68-29098

Observation and forecasting of a [AFCRL-68-0104] f solar proton events 18 p3160 N68-30231 Injection spectra of protons from solar flares mea-ared by diffusion model that considers particle hard-

22 p3956 N68-35494

Observations over polar caps of low energy prutons and alpha particles emitted during solar flare of 28 Aug. 1966. [TR-0158/3260/20/8] 23 p4163 N68.34880

SOLAR RADIATION

NT SUNLIGHT NT TYPE 4 BURSTS

Light pressure effect on orbital trajectories of space vehicle interorbital flights [NASA-TM-X-60601] 01 p0134 N68-10285

Radiative thermal energy incident effects on pressure-suited man on lunar surface [NASA-TN-D-4243] 02 p0267 N68-11630

Zenith and azimuthal angles of measurement depen-ence on reflection properties of earth atmosphere

(NASA-TM-X-63045) oz p0268 N68-11802

Rightness temperature measurements or quantitative measurements or quantit ents of quiet sun at spheric models [TR-0158/3230-46/-1]

03 p0406 N68-12234

(SU-IPR-112) ting spheres 03 p0415 N68-12474 lar radiation by ozone Atm

[AFCRL-67-0572] 03 p0340 N68-12497

Disparity between standard ata and temperature of low go d surface air temperature wing crops 03 p0366 N68-12714

ESSA 3 flat plate radiometers for measuring global stribution of reflected solar and long wave radiation aving earth 04 p0505 N68-12824 Balloon-borne scintillation counter and counter telescope for measuring X rays and solar ultraviolet radiation in stratosphere auroral zone (REPT.-10/1963) 04 p0503 N68-13623

Measurement of Martian atmospheric properties on attenuation of solar ultraviolet and X radiation 04 p0581 N68-13885

cal properties of zinc spacecraft thermal control [NASA-CR-61429]

05 p0753 N68-14171 Telephotometers, infrared radio lemetry used for gathering solar strial radiation data during Cosmo ed radiometers, and radio ng solar, coamic, and ter-Coamos 149 flight 05 p0743 N68-14785 restrial radiatio [JPRS-44029]

Solar eclipse program and experimental determina on of solar chromospheric- ultraviolet radiation using

06 p0905 N68-15316

Atmospheric penetration of ultraviolet radiation ith wavelengths of 100 A to 2,000 A calculated from scket flight density data 06 p0842 N68-15968

Mission goals and general information on projected launching of solar Explorer B satellite [NASA NEWS RELFASE-68-36] Or p1084 N68-16204

N/p silicon solar cell cali short circuit from cells expo (ESRO-TN-5) ration by measurement of ed to solar radiation 07 p0938 N68-16340

Scattering and absorption of solar radiation by earths atmosphere [WRE-TN-HSA-123] 07 p0991 N68-16627

Lunar maps and solar flares, radiation, and radio 08 p1238 N68-17527

Excitation of geocoro [NASA-CR-93351] ogen alpha nightglow 08 p1234 N68-18251

Performance characteristics of two passive commu-ications satellite configurations using solar radiation [NASA-CR-66575] 09 p1431 N68-18810

Experimental method for q local solar irradiation with spac [SSD-70530R] for quantitatively measuring spacecraft models 09 p1416 N68-18900

lar sunspot cycle ob on shower predictions tions for high energy

10 p1553 N68-20568 Incoming abort wave, total inco diation measured continuously s lasks in 1964 oming, and net total near Point Barrow,

11 p1691 N68-21475 Angular distribution of so clouds as measured by Tiros [NESC-38] r radiation reflected from

12 p1962 N68-22399 Radiation hazards on exter [NASA-CR-1037] of manned space flights 12 p1963 N68-22849

Carbon dioxide model for radiation heating and coling functions of lower stratified Martian at-complete in thermodynamic equilibrium

mosphere in thermodyna [NASA-CR-1044] 12 p1969 N68-22860 uantitative analysis of solar radiation absorption by brate tissue using spectrophotometric technique 13 p1997 N68-23083

Cloud reflectance propert tenuation of solar and infrared [AFCRL-68-0003] s and atmospheric atergy 13 p2057 N68-23248

Regional distribution of radiation reflected from atural surfaces based on angular distribution measure-13 p2061 N68-23760

Modification of cloud droplet spectrum by introduc-tion of particles that absorb solar radiation [T-R-550]

Radiation balance and total radiation in fog at ground level, at top of fog layer, and within fogs [T-R-552] 13 p2100 N68-23899

Standard total-radiation absolute radiometer with improved accuracy for calibrating radiometers for simulated soler radiation measurement [NASA-CR-94609] 13 p2072 N66-24292 13 p2072 N68-24292 ire spectral energy dis-

Optical equipment to meass tribution of sun and sky radiatic [RAE-TR-67248] 14 p2192 N68-24970 Dynamics of interplanetary particles near sun and scincal dust sink

16 p2764 N68-27514 Spectroscopic analysis of H and K Ca 2 Fraunhofer nes in solar spectra and of total solar radiation flux 16 p2768 N68-27768

Angular dependence of reflected solar rad from Sahara measured by TIROS 7 in tor [NASA-CR-95361] 16 p2753 N68-28002 (NASA-CR-73219) 17 p2890 N68-28689

in altitude balloon in ources 17 p2964 N68-29434 I photosphere flares on Visibility and dis

18 p3159 N68-29606

18 p3073 N68-29841 on of radiant power incident upon earth

Computation orbiting mtellit (CNES-NT-61 18 p3159 N68-30146 Diurnal and monthly variations in wind speed, gust peaks, temperature, and solar radiation in Fishand 19 p3304 N68-31493

m distribution at 14.50 Observations of solar bright GHz [NRL-6692]

20 p3587 N68-32801 o for interpretation of ical autellites 20 p3525 N68-33455 Techniques and instrudiation data from met [NASA-TM-X-63314] Reflectance and scattering of solar radiation by earth

21 p3761 N68-33889

Sounding rocket and satellite investigation of solar and stellar radiation at Utrecht Space Research Laboratory

21 p3762 N68-34065 nos 766 heliograph ermination of primary during flares 22 p3956 N68-35362

Geophysics and space environmental data bulletin featuri [AD-672978] 22 p3872 N68-35704

Sunshine and solar energy received on ground in Uc-cle, Belgium 23 p4057 N68-37063

ity for analysis of cloud tristics 24 p4279 N68-37746 TR-562]

ucture, and variations n, Chapman layer, and 24 p4250 N68-37827

sta - Mie scattering, ab-ments for carbon dioxie vibratio 24 p4253 N68-38122

SOLAR RADIATION SHIELDING

Design concepts for plasma rad [NASA-CR-61640] distion shield 16 p2733 N68-26973 servation transi

23 p4168 N68-36494 SCHOOL TOY IS BELIEVE

AR RADIO BURSTS T TYPE 4 BURSTS

ar radio flux density and dis 01 p0131 N68-10672 [SR-10]

over satellite radiometer ral energy distribution of Radio Astronomy Explosion for measuring spect noter bursts [NASA-CR-91288] 04 p0506 N68-12859

Longitudinal electron lar coronal plasma as a cecillations excited in

[NASA-CR-91665] 05 u0734 N68-14809 (AFCRL-67-0622) of page 50 pag

ns for high energy 10 p1553 N68-20568

Polar cap absorptio ortwave fadeouts, a orthern and Southern its, geomagnetic storms, crowave radio bursts in

11 p1780 N68-21771 om solar flare X rays ob-rd OGO I and OGO 3 12 p1963 N68-23026 served by ion chambe [NASA-CR-94429]

Data analysis of RF and plar conditions that predic solar events to determine nasa-CR-620671

13 p2146 N68-23538 we radio burst activity

13 p2146 N68-23692 Statistical analysis of co-bursts and sudden counic s [AFCRL-68-0100, PT. 3]

SUBJ NAS

[NA SOLAR Rec metic i [NAS

Inte [NAS

NAS/

Solar [LA-D INASA lunar w NASA Energ torial at [NASA Expe CERT

Design for Apol [NASA-NASA-Satelli rays, soli belts and ESRO-S

SRO-5

Continu

Fear or in ESRO REPT

ing from Expos wind flu [NASA-

U.S.S

NASA-Geoma

Behavi [NASA-0

of solar w Relatio netic field [T-R-678

INASA-C

13 p2148 N68-24301 Coronal magnetic field and radio emitting electron nersy from solar radio burst io burst [NASA-TM-X-63234] 15 p2549 N68-25734 Polar cap absorption study of solar cycle variation in solar proton emissions from sun [NASA-TN-D-4473] 15 p2549 N68-25880 Radio bursts at 3.3 m ength as compared with H alpha emission in solar flares [SAMSO-TR-68-141] 15 p2554 N68-26259 Extraterrestrial radiation, solar eclipse of September 1968, solar prominences and radio bursts, and lunar

17 p2973 N68-29451 Polar cap absorption correlated with RF profiles ac-tive solar regions, and associated phenomena [NASA-CR-92210] [9 p3361 N68-31352 Solar radio burst data recorded during Jul. - Sep.

20 p3582 N68-33223 (SR-014) Model study for solar continuum radio bursts and ap-plication to three observed events [SR-013] 21 p3761 N68-33964 Satellite radio noise meas nents during solar radio [NASA-TM-X-60475] 21 p3763 N68-34682

Observatory data correlation flares of Aug. 28 and 30, 1966 [NASA-CR-97019] n and evaluation on solar 23 p4163 N68-36603

NT TYPE 4 BURSTS

Solar radio noise and optical s (AFCRL-67-0508) 01 p0130 N68-10352 Tables of solar ra 2,700, and 960 Mc/s flux data recorded at 10,700, 01 p0130 N68-10426 Correlation of orbitin ng geophysical satellite solar olar radio and energetic parti-

[NASA-CR-91510] 04 p0570 N68-13579

Pharacterial, and experimental stury properties of pharacterial and solar radio physics 07 p1082 N68-16955

Lunar maps and solar flares, radiation, and radio 08 p1238 N68-17527

Abstracts on solar radio mission and very low frequency propagation in lower is [GRAM-27] onosphere 11 p1779 N68-21159 Radio brightness temperature and sunspot size ob-rvations statistically analyzed for solar flare predic-13 p2147 N68-23858 [AFCRL-67-0670]

Solar X rays and radi on by free-free electron transitions in solar corona [NASA-CR-95061] 15 p2548 N68-25666 Effects of chromospheric parameter fluctuations on

(NASA-CR-96138) 19 p3361 N68-31651 SOLAR REPLECTORS

Lunar specular reflections for optical tracking of dies including r satellites, tra of reflector data, and as [D1-82-0648] lunar surface flashes 04 p0577 N68-13486

Ultraviolet-proton rad trator reflective surfaces [NASA-CR-1024] effects on solar concen-13 p2082 N68-23560

is for construction of com-cloth applicable in develop Manufacturing met 16 p2784 N68-27923

musty development of self-deploying elec-netic energy focusing reflector for space or reable ground based operations. 16 p2625 N68-27929

Attachment methods for the system comprised of optical a tilayer insulation to minimize rmal control compositar reflectors and m ng from inci [NASA-CR-73219] 17 p2890 N68-28689

OLAR ROTATION Energy transport analysis for solar zonal and meridional rotation modes of sumpote [UCRL-50224] 03 p0415 N68-12433

Reynolds equation the tion and meridional circu [TR-0158/9260-02/-3] tion theory of solar differential rota-13 p2147 N68-23904

ts of solar and stellar winds of angular velocity for solar ities, and wind densities 20 p3581 N68-32398

Sun-moon tidal resuts on F 2 region and sport layer - world wide geomagnetic data 21 p3685 N68-33983

SOLAR SAILS

Trajectory optimization problems in mechanics of low thrust propulsion for solar sail and power limited space flights 24 p4302 N68-37806

SOLAR SENSORS

Conference on ser auxiliary solar sensor [NASA-CR-90031] ring - proposals for ol p0136 N68-10703 rs as attitude indica-

19 p3276 N68-31199

SOLAR SIMULATION Solar simulation testing of anchored interplanetary conitoring platform D thermal design and protective (NASA-TN-D-4112) 01 p0149 N68-10299 Fluid transpiration ation source for solar

03 p0400 N68-12149 Influence of light source onomical satellite model on heat balance of large as-and solar simulator evalua-

[ESRO-TM/D/-69] 04 p0596 N68-13401 Significance of solar simulation in space suscessible test chambers for satellite design parameters [7 p2868 N68-29004]

Thermal vacuum testing of satellites without use of se solar simulation

17 p2869 N68-29005 Thermal radiative and electrical properties of cadmi-m suffide solar cell at low simulated solar intensities [NASA-TN-D-4818] 22 p3808 N68-35467

SOLAR SIMULATORS Pumping, vacuum, cryogenic, solar simulation, and supporting systems for space simulator facility [NASA-CR-91733] 05 p0641 N68-14105 lated solar flux incident

Computer program for simuli on spacecraft in vacuum test cha (ESRO-TM-11) 07 p0982 N68-16555 Design and perform and solar-radiation sim [NASA-TM-X-1503]

or solar-cell research 07 p0982 N68-16695 g black ball as calibrat-Error analysis tech ing device in space chambe [ESRO-TM-102/ESTEC/]

09 p1448 N68-18465 Development of 50 kW fluid transpiration arc solar [NASA-CR-92067] 12 p1857 N68-22888

Ultraviolet mercury radiation ological simulation experiments m source designed for 19 p3213 N68-32143

Design and instru n of fluid transpiration arc as radiation source for [NASA-CR-96237] 20 p3455 N68-32487 hnique for measuring

NASA-TN-D-4822] 22 p3877 N68-35534 strial radiation in space Simulation of solar and t [ESRO-TM-116/ESTEC/] 23 p4041 N68-37141

SOLAR SPECTRA

High resolution solar spectra [SR-4] 03 p0414 N68-12174 Solar research in extreme ult

aviolet region 03 p0412 N68-12664 Curves of growth con Fraunhofer line widths ructed for center of solar disk 06 p0911 N68-15618

NASA programs on solar phylur astronomy to solar space a ysics, and relationship of tronomy 10 p1596 N68-20379

Effects of photosphere inhoments with solar magnetograp neities on measure-13 p2151 N68-23928

Solar extreme ult [AFCRL-68-0009] 13 p2148 N68-24299 Spatial and temporal Fo field spectrograms of solar p [NASA-CR-94710] lyses on velocity 14 p2339 N68-24528

of K and H alpha line of calcium 2 in solar up [AFCRL-68-0197] 15 p2555 N68-26819

of H and K Ca 2 Fraunh solar radiation flux 16 p2768 N68-27768

tions, and ion produ sections, diurnal and height varia ction rates for D region ionization in solar spec 17 p2877 N68-28692

Comparative study of hydrolar flures and unperturbed pi gen lines in spectra of 18 p3159 N68-29700

in near infrared solar 18 p3160 N68-30430 nical observatory

Operational summary for a investigating solar magnetic fie [AFCRL-68-0326] 20 p3584 N68-32389 m radio bursts and ap-21 p3761 N68-33964

Solar constant and spec 990 aircraft at 38000 feet [NASA-TM-X-63324] n measured from Convair 21 p3763 N68-34697

Observation and [AFCRL-68-0316] n of solar phenomena 22 p3957 N68-35889 trument for ca ination of ratio of [ESRO-TN-23/ESTEC/] 23 p4064 N68-37036 s recording of H alpha Color filters for si

ectrum 24 p4340 N68-37571

SOLAR SPECTROMETERS

Preparations, launch, and test flight of simplified ver-on of balloon-borne solar telescope for observations from stratosphere [BMWF-FB-W-67-38] 11 p1702 N68-21770 Color filters for simultaneous recording of H alpha and K lines of calcium in solar spectrum [NP-17529] 24 p4340 N68-37571

SOLAR STORMS

Time anal dysis of solar flare enhancement as a determining vertical structure of dynamo 03 p0412 N68-12061 (P-36901 Wavelength dependence of bandwidth for solar

[SR-7/75/] 15 p2554 N68-26348 Magnetic storm anisotropic particle fluxes from low energy ion detector aboard synchronous orbit Applica-

board synchro ellite /ATS-1/ tions Technology Sa [NASA-CR-95216] 16 p2753 N68-27386 SOLAR SYSTEM

Tables for parabol [NASA-CR-90250] 02 p0264 N68-11033 Planetary flyby and associated free fall transfer [NASA-TM-X-63029] 02 p0264 N68-11151

Significance for solar system of time varying gravita-05 p0736 N68-14305

Existence and possible effects on solar system of phi 05 p0737 N68-14309

Magnetohydrodynámics, chavior, and celestial meci magnetized plasm cs in relation to orig of solar system [NASA-CR-92575] 06 p0913 N68-15763

th - tolerance levels and commonauts to solar time 08 p1132 N68-17758

Origin of solar system [NASA-CR-93420] 09 p1418 N68-18461 stronomy of Ptolemy 09 p1418 N68-18521

tion priorities, and inter-Lunar and planetary exp planetary con 10 p1595 N68-20377

INASA-TT-F-5151 11 p1787 N68-21802 Galactic cosmic ray modulat on interaction with electron on due to cosmic radia-agnetic fields in solar 13 p2146 N68-23747

system planets 16 p2756 N68-27297 Meteoritic materials in solar system and their origin ad dissipation, self-destructiveness of meteoritic com-lex, and observational model that considers cometary ex, and observational model that con-

16 p2766 N68-27525 active fall out in a system and pluton 244 in meteorites (ORO-2529-17) 16 p2769 N68-28028

SUBJECT INDEX	
Survey of scientific mi maning through solar note [NASA-TM-X-63295]	acion possibilities to comets
NASA-TM-X-63295]	19 p3364 N68-31283
Computer programs system optimization probi	for solving trajectory and lems of electrically propelled for solar system exploration
interplanetary spacecraft ([NASA-CR-73254]	tems of electrically propelled for solar system exploration 22 p3962 N68-35685
THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NAME	decoupling in many body
Approximate partial openium of solar system	23 p4170 N68-36793
SOLAR WIND	23 patro 1400-30793
Recent observations of a	solar and interplanetary mag-
[NASA-CR-90246]	01 p0131 N68-10563
Interaction of magnetop [NASA-TM-X-63046]	launas with moon 02 p0263 N68-11628
Similarity laws for inte	rraction of solar wind with
magnetosphere to produce	os p0724 N68-14032
Theories, measuring pro	
for solar wind studies and p	06 p0900 N68-15025
Solar counic ray behave planetary space, and dynas	
planetary space, and dynas	06 p0904 N68-15083
Interaction of cometar	
NASA-TT-F-11416]	06 p0907 N68-15138
Feasibility study of Eur	
phenomena [ESRO-SP-21]	agnetospheric/ ionospheric
Polytrope mathematical	06 p0913 N68-15729 model for solar wind and in-
terplanetary magnetic field [REPT67-21]	07 p1078 N68-16264
Solar wind observations	by Vela satellites
[LA-DC-8944] Relationship between pr	07 p1076 N68-16503
tern and energy density of q [NASA-CR-93065]	comagnetic activity parame- point solar wind flux
Perturbations of intern	07 p1076 N68-16792 lanetary magnetic field by
lunar wake compared with [NASA-TM-X-63094]	disturbed solar plasma flow 07 p1081 N68-16871
Energy flux values calcul	
[NASA-CR-93064]	07 p1077 N68-17020
Experimental data on	magnetosphere, geomag-
(CERTS-NT-01-5)	08 p1233 N68-17643
Stellar physics and sunq planetary emissions, and o in U.S.S.R.	pots, solar winds and flares, other astronomical rewarch
in U.S.S.R.	09 p1424 N68-19168
Interactions of unconfin	ed magnetic fields emanut-
ing from space vehicles with [NASA-TN-D-4304]	09 p1416 N68-19188
Exposure of simulated is wind flux	unar soil to simulated solar
[NASA-CR-93535]	09 p1428 N68-19381
for Agono numer number exp	t of solar wind spectrometer periment package
[NASA-CR-93667]	09 p1345 N68-19385
General pattern of magne flow past comet	rise reno-carrying some wind
[NASA-CR-93797]	10 p1592 N68-20054
Satellite and rocket meas rays, solar plasma, solar fi	are particles, and radiation
[ESRO-SP-19]	10 p1588 N68-20272
Explorer 34 plasma experimental	eriment data on solar wind-
[NASA-TM-X-63155]	11 p1785 N68-21553
Geomagnetic field interse [AFCRL-68-0047]	tion with solar wind 11 p1694 N68-21695
Behavior of counic rays is (NASA-CR-94129)	
	nalyzed for transition zone
Solar models critically at features and wind dynamics [ESRO-SN-5]	12 p1916 N68-22246
Mathematical model for equations for stationary spi	
of spinz wind	Managania Et activity of the
(NASA-CR-94511) Relationship of solar win	13 p2123 N68-23074 and interplanetary mag-
metic fields [T-R-678]	13 p2153 N68-24182
Continuum fluid theory o	f solar wind and its interse-
tion with geomagnetic field [NASA-TN-D-4482]	14 p2340 N68-25181
	of plasma outflow from oun
[NASA-CR-94915]	15 p2548 N68-25687

Lunar Explorer 35 mes terplanetary and lunar m energetic particles, and of lunar surface	surements of solar wind, in- agnetic fields, cosmic dust lectromagnetic properties of
energetic particles, and el lunar surface [NASA-TM-X-63225] Upper atmosphere and launchings, solar flares as tion, isotropic turbulence,	15 p2563 N68-25732 space research on Cosmos d winds, radio wave absorp- and satellite motion 15 p2458 N68-25827
Formation of shock was pact of solar wind [NASA-TM-X-60257] Photometric and meta	e and magnetosphere by im-
and origin and evolution of tary madium - conference [NASA-SP-150] Filamentary structure a	15 p2530 N68-25986 our observations, acutturing tion and impact, solar wind, f acidiscal light in interplane- ical p2758 N68-27475 ad general characteristics of actrostatic analysors abourd
Mathematical model as	16 p2765 N68-27522 d Explorer 35 measurement
[NASA-TM-X-63270] Solar counic ray variati solar physics, solar wind a metic radiation, and radiati	17 p2949 N66-28901 ons and their relationship to magnetic fields, electromag- ion hazards to manned space
[NASA-CR-93689] Structure of quiet solar v netic field reviewed as b solar wind disturbances ass (NASA-CR-95710)	17 p2964 N66-29032 vind and interplanetary mag- ackground to discussion of cented with minr flores 17 p2964 N66-29174 errials parameters of tropo- nd variations of solar wind 17 p2850 N68-29268
Relationship between c ophere and ionosphere, a velocities [NASA-CR-95698]	ertain parameters of tropo- nd variations of solar wind 17 p2880 N68-29268 sent of discontinuities in a direction of solar magnetic
[NASA-TM-X-63287]	18 p3159 M68-29915
	solids 19 p3360 N68-31001 cts of solar and stellar winds of angular velocity for solar cities, and wind densities 20 p3381 N66-32398
Solar wind disturbances [NASA-CR-96315] Radioastronomical meth	20 p3581 N68-32398 sesociated with flares 20 p3582 N68-33082 and for solar wind measure-
[NASA-CR-96274] Results of observation of obtained by Venera 2 and V[NASA-CR-96661]	20 p3591 N68-33307 solar wind fluxes sear earth Venera 4 satellites 21 p3762 N68-34158
Solar wind and ionosphe	21 p3762 N68-34159 ric conductivity studied for lars magnetospheres
[NASA-CR-96767] Steady state model for so Oscillation of magnetus wind promore and promage [ESRO-SN-90/ESRIN/]	lars magnetospheres 21 p3774 N68-34778 har wind in equatorial plane 23 p4162 N68-36374 heath with regard to solar etic field fluctuations 23 p4058 N68-37133
	23 p4058 N64-37133 reated poly/vinyl acetate/ evelopment and flare warn- ering of solar X rays for en-
Flare warning system bus rays for ensuring astronaut	02 p0292 N68-11449 ed on monitoring of solar X safety 02 p0263 N68-11451
Plux increase of heavy cosmic rays during solar but [NASA-CR-91043] Cosmection between X ra bay-type anomagnetic distan-	nuclei in composition of experiods 03 p0386 N68-12065 bursts in seronal zone and rhance
[TR-0158/9260-02/-1]	04 p0504 N68-13806. d spectrometer analysis of satellite polar orbit 08 p1234 N68-18040
Soft X irradiation of most ing fluorescence of lunar sur Solar X rays and radio on transitions in solar current.	n probably originating dis- face from solar X rays 12 p1963 N68-22957 simion by free-free electron
[NASA-CR-95061]	15 p2548 N68-25666

```
negative effects of scien X may enhancements
17 p2860 NGS-290
                                                                                                                     of on Skylark
                                                                                               19 p3273 N68-31728
             Atmospheric model for calculating midden iono-
pheric frequency deviations caused by solar X ray and
             ER-43-ITSA-43]
                                                                                              20 p3471 N68-32936
         Counic and solar X ray data obtained by Orbit
Solar Observatory (OSO-3)
[NASA-CR-96950] 22 p3960 N68-354
              NASA-CR-96950) 22 p3960 N66-35493
Measurements of solar X ray emission from carbon 6 and nitrogen 7 ions by crystal spectrometers
24 p4336 N68-37659
   SOLDERED JORYTS
       Cracks in sublewed joints on control signal processor [NASA-CR-61422] 05 p0.635 N64-14213 Tantallum-catallic joints asset bimetallic joints asset be determine overall strength of braned joint [NASA-Th4-X-1540] 12 p1861 N66-21996
       Strength characteristics of solder joins of binding alloys with stainless stock and steel

Shouring stress offices on soldered joins strength and amounting plans for visual important of difficitive joins (REPT.-40-56)

23 p4670 httd-37270
       Comparison between comented and soldered cover glass for radiation protection of silicon solar cells [NASA-Th4-X-1667] 24 p4200 N66-37935
                                                         ness self-fluxing solders for sirers
       structures
[FTD-HT-66-626] 02 g0217 N68-11448
                             ing large area silicon single crystals to best
       sinks
[NASA-CR-93195]
                                                                                             08 p1221 N68-17239
       Equations derived for radial and azimuthal streams in
inflaintly long automoids immersed in externally applied
parallel fishin
[EP-43-12] 05 p0748 N66-14507
      Partially stable composite superconducting sciences (RE-318J) 07 p1036 N65-16666
Field analysis of superconducting sciences (RE-318J) 09 p1407 N66-18367
[NYO-2150-36] 09 p1407 N66-18367
                                                                                            19 p3260 N68-31942
       Circuit protection for plasma control magnetic mir-
ror closed solerands
(FTD-MT-47-85) 23 p4140 Nss-36483
  [FTD-NCT-67-85] 23 p4140 N68-36483

BOLID LUBRICANTS
Molybdenum disulfide solid lubricants and reduction

of instrument wear

[FTD-NT-23-920-67] 06 p0849 N68-15095

Solid film lubricant wear life under various test

parameters

[R1A-67-2548] 09 p1346 N68-18377
[RIA-67-2548] 09 p1346 N66-18377
Operational performance tests on dry hibridants half bearings maker simulated glands operated their bearings under simulated glands operated their bearings under simulation in vacuum.
[NASA-TH-X-53707] 10 p1533 N66-19731
Solid film lubricanted gas bearing turbine custed at 80,000 rgm.
[NADC-NA-6009] 11 p1708 N68-21797
Performance of solid bearing behricants in air and in high vacuum.
[DLR-F2-6-18] 13 p2078 N68-24312
Theoretical and experimental studies on malt balatication of annuals throat surface.

Text evaluation of high temperature greates and solid lubricants in threat tooled but bearing.
[NASA-TN-D-4632] 17 p2590 N68-28766
SLep PRASSES
Singula mobiling contained.
     PASACR-001(5)
                                                                                     01 p0003 N66-11003
```

and pr

SOLID I

propell

Long ammor lants w [CARI

Crise lants for [ONE]

Envi

Gas

Parti

OR-7

INOLT

Liqu

Expe perchlo mechan (ME-R)

Static ines to

lant [NASA

Turn

WRE-

Data

se at /

wre-

Experience propelle REPT.

Crite

REPT.

Sport ture, an system i bustion [NASA-

NASA-

Therm

NASA-

Heat of

Biblio

NASA-

Solid shock w

Therm

INASA-

injection rocket m [NASA-

SOLID RO

Perfor

SUBJ

Thermal properties and chemical kinetics of solid phase in combustion process of ammonium perchlorate propeliants during steady state and transient pressure conditions.

02 p0292 N68-11784 [NASA-CR-66487] Semi-empirical equation of state for solids based on representation of metallic crystal as system of simple harmonic oscillations

03 p0384 N68-12353

Molecular physical properties of deuterram amount in gaseous, liquid, and solid phases
04 p0351 N68-13802 (CEA-BIB-87)

Normal freezing of binary systems with cubic spidus and solidus curves [RM-393J] 04 p0524 N68-13903

Nucleation rate of solid phase i reaction of magnesium carbonate [NASA-TT-F-11477] se in thermal dissociation 06 p0793 N68-15857

Heterogeneous nucleation in vapor-solid transforma-

11 p1658 N68-21838 Immersion compensation method and apparatus for cosuring onthalpies of solid phase reactions. [EA-R-3308] 12 p1839 N68-22761

(CEA-R-3308) Phonon lifetim [NYO-3699-21] in solid argon 13 p2132 N68-23238

es for entropy calcula-Phase transition tempera-tions of solid inorganic com-

13 p2170 N68-23823 lonic conductivities of solid mixtures of lithium fluoride-lithium chloride, lithium chloride, potassium chloride, ithium fluoride and sodium chloride, and sodium chloride gotassium chloride [NASA-TN-D-4606] 14 p2329 N68-24510

14 p2329 N68-24510 Heat capacity and other coefficients and related pro-tries of hexagonal close packed and body centered shic solid helium

14 p2335 N68-25605

Turbulence in pipe flows of gas-solid suspensions [TR-118-MAE-F] 16 p2649 N68-28180 Light scattering by molecular rotation in liquids and

17 p2837 N68-28474

Radiative properties of solidified gases exposed to in-frared radiation in aerospace environmental test cham-

17 p2986 N68-29003 Magnetic shielding theory application to solid and gaseous xenon

20 p3572 N68-32966

nts of thermodynamic pro-Strain gage measures rries of solid helium 3

21 p3792 N68-33862 odel potentials for calculating 21 p3753 N68-33883

Measurement of concentration of natural aerosols in solid dispersion phase with high atmospheric humidity [ONI-TRANS-2648] 24 p4219 N68-38289

SOLID PROPELLANT IGNITION

Environmental gases and pressure effects on ignition of solid rocket propellants [NWC-TP-4431] 03 p0410 N68-12210

Flame propagation and ignition in axial head-end, canted head-end, and aft-end solid propellant igniturs [NASA-CR-92677] 07 p1099 N6I-16917

Spontaneous ignition temperature, ignition tempera-ture, and transition temperature for metal-oxidizing gas system models of solid propellant rocket engine com-bustion appears. [NASA-CR-93541] 09 p1450 N68-18929

Preignition product formation in hypergolic nitrogen tetroxide-hydrazine system at simulated high altitude

[TR-0158/9210-02/-1] 11 p1776 N68-20732

Pleat and mass transfer characteristics of liquid film cooling, optimum thrust nozzle contours, liquid propel-lant combustion processes and ignition of solid propel-

[NASA-CR-94386] 12 p1962 N68-22683

Design and test performance of igniter system for solid propellant applications technology satellite apogne rocket motor [NASA-CR-94620] 13 p2145 N68-24000 13 p2145 N68-24000

Summary information on combustion and ignition oblems in solid propellant rocket engines 19 p3358 N68-30962

vements to uprate per-trol rocket 20 p3579 N68-33331 Thermal energy supply is trmance of subliming solid formance of sublimin [NASA-CR-95620]

Surface structure of burning solid propellinits and combustion instability and deflagration to detonation transition of burning explosive substances.

[FTD-MT-24-248-67] 21 p3793 N68-33959

Surface structure of burning solid propellants 21 p3793 N68-33960

Molecular momentum transfer from regressing solid propellant surfaces, and acoustic losses of T-burner 23 p4191 N68-37408

SOLID PROPELLANT ROCKET ENGINES NT ALGOL ENGINE

Mathematical models for determining longitudinal vibration modes of multistage liquid and solid propellant vehicles, and clustered tank vehicles [NASA-CR-936] 01 p0142 N68-10280 01 p0142 N68-10280

Limiting deviations and scatter in ballistic parameters of solid fuel rocket engine

01 p0129 N68-10994 Techniques for full-scale dynamic testing of large solid or liquid fueled booster vehicles [NASA-CR-940] 02 p0273 N68-11054

History of Russian solid fuel rocketry [NASA-TT-F-415] 02 p0262 N68-11829

Comparative analysis of several advanced thrust vec-tor control system designs applied to large, solid propelliant launch vehicles [NASA-CR-66504] 03 p0410 N68-12190

Comparative analysis of advanced thrust vector con-ol systems designed for large, solid propellant launch

[NASA-CR-66505] 03 p0411 N68-12382 Feasibility study and capability evaluation of 44-inch first stage rocket motor for Scout vehicle [NASA-CR-66528] 04 p0568 N68-13839

Solid propellant engi strap-on boosters [ELDO/SP/67/11] es applied to apogee stage and

05 p0731 N68-13998 ethods for solid propellant Thrust vector control a rocket engines 05 p0731 N68-14063

Numerical analysis of gas pressure, temperature, and urning area during ignition transient in hypothetical yrogen ignited solid propellant rocket engines NASA-CR-91778] 05 p0732 N68-14368 NASA-CR-91778)

Acoustic combustion instabilities in solid propellant sucket engines [BBN-1547] 05 p0754 N68-14370

Design, fabrication, and test firing of 260 inch diameter solid rocket engine [NASA-CR-72289] 66 p0897 N68-15188

Survey on solid propellant rocket engine design problems and ELDO launch vehicles [ELDO/SP/67/10] 06 p0899 N68-15898

Additives, oxidizer blend, and plasticizer concentra-tion for solid rucket motor 260-SL-3 [NASA-CR-72262] 06 p0896 N68-16051 06 p0896 N68-16051 Static test firing of 260-SL-3 rocket motor to verify esign concepts, fabrication techniques, and materials

[NASA-CR-72284] 06 p0899 N68-16053 tive testing, and hydrostatic

Fabrication, nondestructive testing, and hydrostatic pressure testing of 260 SL-1 case [NASA-CR-54871] 07 p1073 N68-16477

Optimum relaxation time proven for Maxwell solid core during forced vibration of bonded rocket as-[NASA-CR-92986] 07 p1091 N68-16746

Static tests of 65 inch diameter subscale rocket en-pines to evaluate nozzle fabrication methods, nozzle naterials, liner material, case insulation, and propel-

[NASA-CR-54869] 07 p1075 N68-17198 Quenched residual rocket motor heat for vacuum propulsion [NASA-TM-X-63124] 08 p1231 N68-18066

Solid propellant rocket systems design and com-bustion efficiency and burning rate of solid propellants [NASA-TM-X-52393] 10 p1585 N68-19831

Three dimensional photoelastic determination of stresses in split cylinder case bonded propellants [REPT-14] 10 p1607 N68-20148

Submerged nozzle design for SL-3 260-inch solid propellant rocket engines [NASA-TM-X-1546] 10 p1586 N68-20186 Design, development, and stat kick motor for Radio Astronomy [NASA-CR-93965] static firing tests of apogee omy Explorer Satellite 11 p1777 N68-21097

Design and test performance of igniter system for noisi propellant applications technology assettle apogee rocket motor [NASA-CR-94620] 13 p2145 N68-24000

Conservation equation equation to produce moburning rates in solid pro[NASA-CR-72397] ens coupled with mass balance aethod of computing transient 14 p2336 N68-24572

Spin and centrifuge test facilities for testing solid rocket propellant engines - annotated bibliography [NASA-CR-66625] 15 p2448 N68-25842

Linear viscoelastic and elastic problem in stress anal-ysis of solid propellant rocket engines [NASA-CR-95372] 16 p2751 N68-28261

Thrust vector control for large launch vehicles with

sond propellant first stages [NASA-TN-D-4662] 17 p2976 N68-28690 Static and in-flight firing measurement of radio equency energy absorption in solid propellant rocket 17 p2962 N68-29014

Heat transfer in nozzle of high aluminized solid 17 p2988 N68-29362 [NAL-TR-147]

Summary information on combustion and ignition roblems in solid propellant rocket engines
19 p3358 N68-30962

Computerized prediction analyses of radial spin ac-celeration effects on solid propellant rocket motor bal-listics and heat transfer [NASA-CR-66639] 19 p3359 N68-31305

Load relief autopilot to minimize launch vehicle thrust vector deflection angle required for vehicle stability during flight through design winds.

21 p3721 N68-33756

Literature survey of acceleration spin effects on solid propellant rocket engines [NASA-CR-66641] 21 p3759 N68-34315

Manufacture and firing test results for large proto-type solid rocket motor [NASA-TM-X-61238] 21 p3760 N68-34725 ions of an ELDO-A/PS

Performance and applications of launch vehicle equipped with perigee m [NT/DTA/GI-III/67/NO.115] 21 p3780 N68-34765

Performance evaluation of solid propellant rocket motor ignition to determine igniter design and parame-ters to avoid overpressurization [NASA-CR-72447] 22 p3955 N68-35729

Qualitative analysis of splid propellant rocket engin in acceleration effects on ne performance 24 p4336 N68-37605 solid propellant rocks [NASA-CR-66679]

SOLID PROPELLANTS
NT CASE BONDED PROPELLANTS
NT COMPOSITE PROPELLANTS
NT DOUBLE BASE ROCKET PROPELLANTS
NT PLASTIC PROPELLANTS

Thermal properties and chemical kinetics of solid phase in combustion process of ammonium perchlorate propellants during steady state and transient pressure

[NASA-CR-66487] 02 p0292 N68-11784

Solid propulsion binder studies, propellant binders terminated by acid, chloride groups, application technology satellite motor, and oxidizer particle size ef-fects in propellants 03 p0410 N68-12315

Extinction of burning solid rocket propellant [AFOSR-67-1767] 04 p0562 N68-12984 Combustion physics of solid propellants, and modes 07 p1097 N68-16767

Saturated hydrocarbon polymeric binder for advanced solid propellant and hybrid solid grain [NASA-CR-93172] 08 p1228 N68-17259

Dynamic pressure and velocity coupling mechanisms in steady-state solid propellant combustion [NASA-TM-X-52419] 10 p1613 N68-20042

Solid propellant low pressure instability and extin-

[NASA-CR-94238] 12 p1959 N68-21865 Microwave techniques for measurement of solid ocket propellant burning rates

NASA-CR-66627] 13 p2171 N68-23843 Saturated hydrocarbon polymeric binder for solid ropellant and hybrid propellant grains propellant and hybri NASA-CR-961331

t grains 19 p3357 N68-31729 Saturated hydrocarbon pol vanced solid propellant and hyd [NASA-CR-96284] lymeric binder for ad-brid solid grains 20 p3577 N68-32601

Surface structure of burning solid propellants and combustion instability and deflagration to detonation transition of burning explosive substances [FTD-MT-24-248-67] 21 p3793 N68-33939

Surface structure of burning s olid propellants 21 p3793 N68-33960

Mass exchange during burning of condensed mix-tures and effect of particle size on burning velocity [FTD-MT-24-210-67] 22 p3978 N68-35284

Experimental measurement of rates of energy release in solid propellants subjected to strong shock waves from projectile impact [NASA-CR-66682] 23 p4159 N68-36348 23 p4159 N68-36348

SOLID BOCKET BINDERS

Solid propulsion binder studies, propellant binderminated by acid, chloride groups, application choology satellite motor, and oxidizer particle size

03 p0410 N68-12315

Aliphatic ionene synthesis, strain rate in deformation elastomers, polymerization and structure of nitroso bber, crystallinity in polybutadienes, and therelastomers, polymerization as bber, crystallinity in polyb oplastic rubber binders

03 p0312 N68-12316

ed to composite binders and propellants [AD-6672501 14 p2336 N68-25169

SOLID ROCKET PROPELLANTS

NT DOUBLE BASE ROCKET PROPELLANTS

ematical model of acoustic oscillations in solid ant combustion when amplified by burning sur-

02 p0286 N68-11689

Longitudinal combustion instability - behavior of ammonium perchlorate/polyurethane binder propellants with high solida coutent [CARDE-TN-1746] 02 p0261 N68-11813 02 p0261 N68-11813

Criteria for selecting liquid, solid, or hybrid propel-lants for future missions [ONERA-TP-516] 03 p0425 N68-12036

Environmental gases and pressure effects on ignition of solid rocket propellants [NWC-TP-4431] 03 p0410 N68-12210

Gas dynamic model for response of burning propel-nt surface to pressure pulses induced by shock waves DR-7] 04 p0394 N68-13223 [OR-7]

Particle size effect on explosive behavior of ammoni

INOLTR-67-1121 9 06 p0787 N68-15323 Liquid and solid rocket propellants and propulsion

[NASA FACTS S-1/8-67] 06 p0899 N68-16054

nental investigation of ammonius se composite propellant deflagration perchiorate composite mechanism using analog bur [ME-RT-67006] : 07 p1072 N68-17187

Static tests of 65 inch diameter subscale rocket en-nes to evaluate nozzle fabrication methods, nozzle aserials, liner material, case insulation, and propel-

[NASA-CR-54869] - 15 200 07 p1075 N68-17198 Turn-over point method for determining end of burning of solid rocket propellants [WRE-TN-CPD-137] 08 p1228 N68-17308

Data handling system, equipment, and techniques in se at Australian ballistic installation for solid propel-

(WRE-TN-CPD-136) 08 p1228 N68-17309 n of gaseous flame of solid

Experimental suppression of propellant by arc image furnace [REPT.-799] radiation 09 p1447 N68-18366

Criteria for solid propellant screening and prelimina-engineering design by application of cumulative neering desig (REPT.-1159-81Q-2) 09 p1412 N68-18436

Spontaneous ignition temperature, ignition tempera-ture, and transition temperature for metal-oxidizing gas system models of solid propellant rocket engine cum-(NASA-CR-93541)

09 p1450 N68-18929 Solid propellant rocket sy bustion efficiency and burning [NASA-TM-X-52393] systems design and com-ing rate of solid propellants 10 p1585 N68-19831

Thermodynamics of liquid and solid propellants, and injection and mixing processes for liquid propellants [NASA-TM-X-52391] 10 p1612 N68-19840

Heat conductivity of cylindrics sured between 50 and 500 deg C [DLR-FB-68-23] ical Lift fuel grains mea-

16 p2749 N68-28305 Bibliography on solid, liquid, and hybrid high energy propellants and oxidizers, propellant handling and storage, toxicity and hauards, and safety measures [NASA-SP-7002/04/] 18 p3156 N68-30313

ability due to oscillating Solid rocket combustion [AFOSR-68-0771] 19 p3357 N68-32014

Thermal energy supply improvements to uprate per-formance of subliming solid control rocket. [NASA-CR-95620] 20 p3579 N68-33331

Performance of vortex valve controlled accordary jection threat vector system for solid propellant scket mutor control rocket motor control
[NASA-CR-66692] 23 p4161 N68-36624

SOLID ROTATION
U ROTATING BODIES

SOLID SOLUTIONS

Chemical potentials and activity coefficients of bi ary solid solution components by third component [PA-TT-59] 01 p0025 N68-10823

Surface self diffusion, chemical interdiffusion, marker shift and chemical drift in alloys, magnetic materials diffusion, cation diffusion in solid solutions, and ferrite cation ordering [AFOSR-67-2289] 01 p0125 Ne8-10827

Chemical potentials and activity coefficients of ostassium sulfate-copper sulfate-water and ammonium ulfate-copper sulfate-water binary solid salt solutions

Dielectric properties of solid solutions of baria titanate and lead titanate (NEL-1470) 02 p0258 N68-1120 02 p0258 N68-11210

Specific heat and magnification of yttrium-garantees [ANL-TRANS-513] etic permeability of dilute 03 p0409 N68-12577

Liquid-liquid immiscibility in barium oxide silicon dioxide system [TR-12] 05 a0681 M68.14614

Homogeneous nucleation in condensation, diffusion in ternary interstitial solid solutions, surface self-diffusion on metals, and thermally activated coupled-cur-

rent process [AFOSR-67-2789] 06 p0893 N68-15169 netry of solid ionic systems 06 p0792 N68-15750 High temperature cal [AROD-5107-13-MC1

Irradiation strengthe metals and solid solutio [ORO-3612-4] of body centered cubic

07 p1009 N68-16892 Solid solution and plechanisms, and reinfordirectory metals transformation alloying fibers for strengthening

08 p1189 N68-18213 ing solidified aqu solutions of iron ions in high spin st (KFKI-9/1967) state 10 p1480 N68-19584 Effects of solid solu strength of steels [AMMRC-CR-67-13/F/] itions on fracture

11 p1711 N68-20736 Computation of there namic properties for

13 p2083 N68-23826 Thermodynamic propertie m chloride-potassium ch erties of solid solutions in sodi-chloride-cadmium chloride

13 p2021 N68-24072 Average specific heat of solid iron oxide and alu-inum oxide solutions at high temperatures

13 p2022 N68-24082 Extectic decomposition of cubic solid solutions in reconium dioxide and manganese oxide system
14 p2211 N68-24548

Equilibrium phase compositions and thermodynamic properties of solid solutions in magnesium oxide-iron oxide-afficon dioxide system

14 p2216 N68-25019

lodate and citrate method for measuring free acid in [LA-3876] 15 p2403 N68-25655

Shear stress and activation energy and volume for eformation of silver and niobium alloys in solid solu-(COO-916-131 15 p2486 N68-26826

Reaction Emerics and chemical composition in solid obstion of calcium oxide, iron oxide, and silicon diox-le, in contact with iron at 1080 deg C 17 p2838 N68-28480

Applicability of phase diagrams in predicting dis-on kinetics of binary solutions and multicomponent

[NASA-CR-95399] 17 p2904 N68-28917 Applications and lim effective binary diffusi terdiffusion of multicos [NASA-CR-95400] 17 p2841 N68-28918

malous low temperature thermal expansion or in dilute iron-transition metal alloy solid solu-

18 n3086 N68-29620 spontaneous magnetic talline solid solutions 19 p3348 N68-30934 netic susceptibility and spo it of perovskitic, polycrystalli

logical properties of solid liquid suspensions 19 p3261 N68-30935

Elastic properties of chromium oxide-alum oxide solid solutions

Raman spectra of lead titanium trioxide and solid solutions of sodium tantalum trinside-potamium ten-talum trioxide and potamium substum trioxide [NASA-CR-96362] 20 p3575 N68-33454

Solution and solid state ap 21 p3647 N68-33760

of precipitate initially in rd matrix 21 p3653 N68-34564 Model for dissolution of p equilibrium with its depleted ma [AMMRC-TR-68-14] Dentification and electrical properties of lead zir-conium titanate solid solution [UCRL-18126] 22 p3952 N6E-33879 22 p3952 N6E-35879

Experimental determination of perficient for system of two mensity and viscosity of transverse dispersion miscible fluids of equal

23 p4106 N68-36329
Thermodynamic analysis of solid solutions of carbon, nitrogen, and oxygen in ulchism and tantalum (ORNL-TR-1942)
24 p4354 N68-37960

SOLID STATE Inotopic analysis by infrared spectra in solid state [BARC-281] 03 p0313 N68-12410 Cyclic nuclear magnetic resonance pulses for duced dipole dipole interactions in selids

04 p0558 N68-13467 Solid state chemistry of rare earth oxides [COO-1109-25] 05 p0627 N68-14727

Solid state reactions effect on ad microstructure of refractory

on from solid to solid in metal (REPT.-67-57) (S. NO. 09 p1406 N68-LB448

Kinetics of calcium car te reaction

11 p1644 N68-20633

NASA-CR-860431 11 p1771 N68-21026

Research projects in low temperature physics, solid state physics, stomic physics, comet physics, and physics of quoce related flow problems [NASA-CR-94778] 14 p2300 N68-25369

Photochemistry of allyl chloride in liquid and solid

15 p2411 N68-26099 Summaries of solid state see [ESD-TR-68-17] 16 p2743 N68-27393

effects on ground state Two particle correlationersy of solid belium 3 18 p3128 N68-29765

Rare earth element and compound research conference (CONF-670502) 20 p3423 N68-32834

Solution and solid state spectra of manganese com 21 p3647 N68-33760

Solid state phase equilibria in cobalt tangeten ear-22 p3887 N68-34849

Mass transfer number analysis of solid carbon com-uction at high temperatures

Effect of shear stress on solid state phase trus

[AROD-4953-4-MC] 23 p4075 N68-36456 Structure and fabrication of silver sinc solid electrolyte battery for meteorological balloon environment [NASA-CR-97219] 23 p3993 N68-36588

Solid state diffusion in circonium copper and throm in nickel systems, and study of intermetallic con ounds formed TH/68/28) 23 p4078 NSB-36926

iography on correlation factor and hotope effect I state diffusion

[CEA-BIB-120] CEA-8IB-120] 23 p4156 NosSOLIB STATE DEVICES
NT AVALANCISE DIODES
NT CRYSTAL RECTIFIERS
NT FIELD EFFECT TRANSISTORS
NT GALLUM ARSENIDE LASERS
NT GERMANIUM DIODES
NT JUNCTION DIODES
NT JUNCTION TRANSISTORS
NT METAL OXDE SEMICONDUCTORS
NT METAL OXDE SEMICONDUCTORS
NT PHOTOTRANSISTORS
NT PHOTOTRANSISTORS

plaCing-

5

1

.

SO

- [

.

901

1

8

P.

11

-

80

sit

de

Maria A

SOL

tio (N

pri soi (R

IA

- 6

PHOTOVOLTAIC CELLS
RUBY LASERS
SEMICONDUCTOR DEVICES
SEMICONDUCTOR LASERS
SILICON TRANSISTORS
THERMISTORS
THERMISTORS THYRISTORS TRANSISTOR AMPLIFIERS TRANSISTORS NT VARACTOR DIODES State-of-the-art review of microwave solid state devices and circ [ECOM-2864] 01 p0038 N68-10589 Solid state preamplifier for beta ray thickness gage [NSJ-TR-83] 01 p0064 N68-10640 ristics of charge controlled image storage display panels [ECOM-02482-4] 01 p0039 N68-10733 Solid state and optical devices suitable for generation and modulation of electromagnetic waves in microwave, millimeter and optical frequency ranges [NASA-CR-90751] 02 p0260 N68-11878 Research projects on solid state devices, optical cliniques and equipment, materials, and physics of [ESD-TR-67-467] 03 p0330 N68-11930 tate detector for measuring ing magnetic spectrometer 04 p0506 N68-12830 ition-sensitive of rties of double-Hysteretic cadmius de syn state display devices [RADC-TR-67-490] 04 p0486 N68-13230 Research summaries on a topics in solid state physics [AD-661330] ectroscopy of crystals and 04 p0558 N68-13449 nd physics and electronics levelopment Fourteen papers on appli electronics metromental (BNWL-481, V. 2, PT. 4) 05 p0614 N68-14326 wave modulator for static stabil (IDO-17221) olog multiplier with full-05 p0661 N68-14372 Thermal noise in space charge limited current flow in olid state devices 11 p1696 N68-20651 Summary of research on solid state devices, optical techniques and devices, materials research, and physics of solid (ESD-TR-67-562) 11 p1770 N68-20816 nent of microwave [PR-16] 11 p1753 N68-20952 Solid state device concepts for electroluminescent diodes and thin film gallium arsenide diodes for computer storage devices

11 p1674 N68-21471

11 p1674 N68-21471 atic control systems for nuclear reactors, matruction, and threshold logic 7/14] 11 p1678 N68-21561 reactor construct (RT/EL/67/14) Summary of research on electronic equipment, solid ste devices, automatic control and electrical power [AD-666380] 11 p1678 N68-21598 Energy ion, range, and stopping power of charged particles in afficon or germanium detectors CEA-R-3371) 12 p1876 N68-22678 Design criteria for solid state detectors for orbiting cophysical observatory inhourd electron flux and VASA-TM-X-63195) 12 p1876 N68-22703 mance of solid state ul-Dosign and opera metry transmitter 14 p2222 N68-24919 NA A-C #- 617/6/1 procedures and theories etry transmitter 14 p2222 N68-24991 Operating and maintent for prototype solid state to [NASA-CK-94657] eres and test data for prototype solid Test proced state telemetry transm [NASA-CR-94671] 14 p2222 N68-24992 Nuclear beta spects scopy using solid state detectors 14 p2313 N68-25117 ses in solid state r Trapping proce ne radiation desimetry 14 p2334 N68-25281 diathermy instrument 14 p2258 N68-25290 [NASA-CR-4757] Solid state million amplification studies [NASA-CR-94970] ive power generation and 15 p2436 N68-25915 Onin, impedance, frequition purameters, and madevices and solid state devices [AFCRL-67-0685] ey response, noise, junc-reals for semiconductor 15 p2436 N68-26260

Neutron energy threshold detector systems using olid state nuclear track detectors and finile radiator units [ORNL-TM-2120] Theoretical and experimental measures to obtain solid state and vacuum type infrared image converters [J-255-5] 15 p2438 N68-26863 Gallium phospi state display devic [ECOM-0407-2] Physical chemistry, solid state devices, optical, mag-netic, chemical, and mechanical properties and appli-cations to devices, and chemical and structural en-[AR-7] Network Analysis for Systems Application Program /NASAP/ applicable in analysis and design of solid [NASA-CR-95773] ctronic bread inasa-cr-73221] Stability requirements tributed amplifiers, and se perty data Nuclear physics research, solid state studies, and diation detector developments [AECL-3157] Characteristics and perfe agrated microwave circuit [NASA-CR-96449] Solid state plan posit RD-68-29] lustrial plant au and temperature senso [FTD-MT-24-298-67] (STI/PUB-21/23) [FTD-HT-67-59]

22 p3876 N68-35296 bility of transfor ng solid state switches into [NASA-CR-86103] 22 p3848 N68-35634 sensing devices developed for te applications Solid state image a [NASA-CR-96104] 23 p4035 N68-36267 Solid state dominetry bibliography with keyword and 23 p4004 N68-37225 OLID STATE LASERS bliography, theory, and experiments on optical ing in bulk semiconductors for millimeter wave NASA-CR-860071 02 p0259 N68-11439 neration capacity of solid mation of laser resonator 04 p0518 N68-13426 Enhanced lumineso ty of solid state lasers e effect on generation capaci-04 p0518 N68-13427 04 p0518 N68-13428 Principles and applications of la lasers 09 p1350 N68-18860 Optical properties and stimul groups of mixed fluorides with a [RRE-TRANS-162] ed emission of crystal 12 p1956 N68-22427 Correlated magnetical properties of laser [MC-63-172-R1] tic states with optical and electri-13 p2131 N68-23235 Solid state later radii (WRE-TN-PAD-146) 20 p3492 N68-32447 SOLID STATE PRYSICS physics, fluid mechanics, is and thermodynamics pplied mathematics and Soviet articles on plasma phy olid mechanics, detonations randated from journal of app al of applic translated from jor technical physics [FTD-HT-66-261] 02 p0241 N68-11661 Research equipment aries for various n coretical physics inve nce and progress num-meral, neutron, and [PR-P-75] 02 p0249 N68-11814 try of high dynamic pressure 03 p0428 N68-12567 Physics and che Progress report in a (AERE-PR/SSP-10) id state physics research 04 p0556 N68-13120 unaries of research activities in solid state s, chemistry, metallurgy, and electronic, mag-and optical properties of materials 06 p0994 N68-15732

15 p2467 N68-26437

mitting diode array solid

16 p2631 N68-27077

16 p2743 N68-27326

17 p2866 N68-29345

of solid state earth abilized probes 18 p3171 N68-30223

20 p3453 N68-32415

20 p3456 N68-32505

20 p3452 N68-33329

21 p3660 N68-34313

using solid state devices

indicator resolved sween

rformance of solid state in-nit components, devices and

ts for linear solid state dis-semiconductor materials pro-

f in solid state physic cs, fluid physics, soli NP-17117] 07 p1035 N68-16556 Research projects of and theoretical physics [AECL-3009] 07 p1047 N68-16624 nagnetic resonance, X ray, and sen-sce spectra of solid solutions of sodi-magnetics. 08 p1227 N68-17998 ch in solid state physics, radio physic (DOR-533) os p1130 N68-18078 Very low frequency propagation, solid state physics, stomatic control, communications, computer inputs ad outputs, ferromagnetic and ferroelectric materials, d outputs, fer (SAPR-74) 09 p1317 N68-18453 d lattice dynamics of solids, ICOO-623-1271 09 p1409 N68-19080 State of art in soil (BNWL-SA-1543) 09 p1409 N68-19086 Interdisciplinary materials research in inorganic non-etallic materials, metallic solids, polymers, and solid [NASA-CR-93718] 10 p1538 N68-19692 Nihon University physics projects related to atomic sergy research assumarized for 1967 NUT-A-68-2] 11 p1760 N68-20875 Jummary of basic stud electrical, engineering prop [REPT.-770] on chemical, physical, is of materials 11 p1773 N68-21302 (IEFT-70) Solid state physics, information theory, biomiss, phermetics research - progress report [1 p1748 N68-21563 Data systems, radio physics, radar equipment, and solid state physics [ESD-TR-68-10] 13 p2042 N68-23151 lear and some lics, and chemistry 13 p2020 N68-24058 Soviet articles on nuc geophysics, thermodynan [FTD-MT-64-358] Research in as theoretical physics [AECL-3108] 14 p2306 N68-24785 Research projects on defect to behavior, electrical and optical modynamics of solid materials at [NASA-CR-95358] et structure, mechanical cal properties, and ther-16 p2746 N68-28194 Metallurgy and metallography, solid state physics, basic chemistry, and research facilities [ATR-7] 18 p3191 N68-30727 functionals of matrices quantum chemistry 19 p3315 N66-31333 Dynamic properties of perfect and imperfect crystals 20 p3565 N68-32644 [AFOSR-68-1545] Solid state reactions, structural properties, and characterizations of polymers and other materials [NASA-CR-97202] 23 p4084 N68-36830 Progress report for electronic sci [SAPR-7] 24 24 p4335 N68-38480 OLID SURFACES NT CRYSTAL SURFACES Three dimensional model of monatomic gases in-tracting with solid surfaces represented by similar, noninteracting hard sphe [NASA-CR-933] 01 p0051 N68-10499 Indium solid-solid ad n tester for surface con-(SC-DC-67-2001) Satellite experiment for surface interaction studies [NASA-CR-90101] 01 p0115 N68-10905 tors and in solid state 02 p0259 N68-11603 on in dynamic action. olids 02 p0278 N68-11672 Surface roughness resistance between o [NASA-CR-91440] nem effects on thermal olids 04 p0394.N68-13170 on friction and wear 04 p0516 N68-13637 [NASA-TM-X-52380] Computer studies of a face and atom interac-

(NASA-TT-F-11470)

Feasibility of supported atting liquid core in [NASA-TN-D-4413]

quid fuel on solid wall in rocket concept 07 p1072 N68-17093

Heat transfer in thermally decom-ires in turbulent flow past solid surf surface 10 p1614 N68-20137 ique of analyzing solid surface separation (REPT.-67-C-199) 11 p1650 N68-21057 us and heterogeneous Gas adsorption on I 15 p2415 N68-26326 as and distribution, in Electron acattering, energy to magnetic copper and nickel solid [ORO-2755-20] surfaces 15 p2542 N68-26658 FORTRAN I lotting and drawing of three dimensional soli [NASA-TM-X-1598] 16 p2699 N68-28240 id surface study by m of expelectrons after X ray irradiation [UCRL-TRANS-10225] 17 p2959 N68-29118 and interfacial tension 18 p3086 N68-29603 recti 19 p3261 N68-31004 6d surfaces 21 p3649 N68-33946 mally incident mole [AFOSR-68-1746] 24 p4321 N68-38308 Theoretical analysis of a normally incident on solid [AFOSR-68-1734] ring of molecular beam 24 p4321 N68-38311 Turbulence in pipe flo [TR-118-MAE-F] s-solid suspensions 16 p2649 N68-28180 tive spectrochemical 23 p4008 N68-36388 SOLIDIFICATION ite structure studied in Microsegregation at lidified high-strength d high-strength st BC-CR-63-04/5] 03 p0347 N68-12286 Directional solidific 8B to enhance potent gine application of nickel base alloy TAZ-r advanced gas turbine en-NASA-TN-D-4390] 06 p0855 N68-15637 Transient solidification plate, including heat or lowing liquid on cold is of frozen layer and NASA-TN-D-4353] 06 p0926 N68-15742 Extrusion castin mophysical propert [FTD-MT-64-257] d nanels and ther-16 p2667 N68-27358 ng and prior to extru-16 p2668 N68-27360 recific heat, and 16 p2668 N68-27362 growth rate of gallium defects 16 p2679 N68-27420 fication of unic alloy 16 p2681 N68-27779 cal evaluation of tem-osition as function of sergoing solidification 18 p3 [86 N68-30023 eady two-dimensional iquid flow 19 p3387 N68-32073 solidification on cold [NASA-TN-D-4771] Crystal structure, tions, and physical pr films, and bulk solids [NASA-CR-89535] ectromagnetic interaction of single crystals, this 01 p0121 N68-10097 non effect, and pair adiation absorption in 01 p0122 N68-10159 ible viscos solids [AM-67-6] 01 p0144 N68-10691 Propagation of ela plastic strain pulses in 01 p0145 N68-10831 (AD-6594221 AD-0279224, Stationary motion of vapors from some Stationary motion of lateral spreading distion in presence of lateral spreading 02 p0280 N68-11027

[TR-12] [ESD-TR-67-467] terface th [TR-55] High energy ru lids, and radia Optical and a luted and verified [UCRL-70723] Solid strength e of spherical and pi (BRL-R-1375) NYO-3578-71 Magnetic proj and thin films [COO-623-127] Rain impact di ructural materi Thermal expe [IS-T-1[4]

resonance absorption in solids [NEL-1472] 02 p0210 N68-11150 11 p1770 N68-20817 nd effects on losses in a computer simulated m 02 p0274 N68-11257 11 p1771 N64-21044 te devices, optical ux effects on d 03 p0330 N68-11930 11 p1772 N68-21135 Shock wave-induced crystal surface of solid do onon emission 03 p0408 N68-12462 (AFCRL-48-00 n macro and micro 04 p0595 N68-13225 Techniques for ge frequency acoustic v [NASA-CR-91338] d detection of very high 12 p1982 N68-22182 04 p0557 N68-13261 ements on square graphite nel and on solid graphite on optical properties of (IAE-1363) 12 p1912 N68-22941 04 p0558 N68-13682 d Von Hippel metho ation of state for d on porous plate [ISS-67/37] 13 m2136 N68-23720 [NASA-CR-91675] 05 p0745 N68-13965 ith physical propertie bibliography of publi ic electron energy loss during large angle scattering on solids (BMWF-FBK-67-64) 05 p0712 N68-14423 13 p2136 N68-23769 th on inorganic nonmetallic polymers, and solid state on properties of m NASA-CR-91779] 06 p0893 N68-15143 tion times and normal fumped solids 06 p0894 N68-15629 Ine solids [AD-660385] ationship betwe 13 p2137 N68-23860 ONR-TR-RLT-100 solids and cour systems of solids an (REPT.-67SD262) ermal properties calcu-nolecular solid 07 p1100 N68-17216 14 p2355 N68-24519 crystals and polycrystaltion and attermatio 14 p2277 N68-24854 06 p1163 N68-18010 on in solids by shock Kinetics of ph ave compression Structure of Jose omagnetic field, ar ally dilute solid current produced by elec-induction decay in magneti-14 p2330 N68-24928 unics of deforma 09 p1406 N68-18520 14 p2357 N68-24954 of solid particles for plasma etic relaxation n solid belium 3 14 n2334 N68-25299 09 p1403 N68-19050 ster code for sto and retrieving data on tice dynamics of solids, solids for radioactive waste f [ORNL-3824, SUP. 1] 14 p2229 N68-25602 09 p1409 N68-19080 Brittle rupture analysis on body with linear disloca ter erosion effects on 16 p2778 N68-27586 of state for solid bodies com 09 p1337 N68-19401 16 p2794 N68-27592 on polymers, cera (AD-669502) 09 p1337 N68-19403 18 p3150 N68-29826 Inelastic no groups in solida [INP-600/PS] es of molecular olids eroded by reper 09 p1445 N68-19409 18 p3140 N68-30821 nt of single is oratory device for surface temperate transients in sliding of 09 p1324 N68-19410 19 p3385 N68-31400 cal properties of soild sion studies, and analy-amage data 09 p1324 N68-19412 ion effects on materials [JPRS-462091 20 p3576 N68-33508 rity effects in compres osion effects on o Thermody: in of solids supersonic speeds 9 p1356 Not-19415 21 p3752 N68-33705 High velocity sand ero metal, and polyurethane tests on glass, steel, calculate strength and uniaxial stress 21 p3787 N66-33830 etic theory of fr elastic properties of [NASA-CR-96550] 09 p1445 N68-19418 ace of impinged [ANL-TRANS-627] plick by argon ions 21 p3755 N68-3448 rposed on finite defor-elastic solid 22 p3969 N68-34890 09 p1446 N68-19426 ngle droplet impacting on 09 p1446 N68-19427 ions for determination isture of two selids 22 p3972 N68-35330 se concentrations and le solids 10 p1603 N68-19740 (AM-68-4) draffy bonded solids at 23 p4159 N68-37329 10 p1578 N68-20030 ion of imp n spectroscopic identifi-lids and solutions 10 p1489 N68-20118 balance for stud [LA-3939-MS] 4 p4256 N68-37546 e solids 11 p1770 N68-20791

24 p4350 N68-38100

7.47.424)

SU

h

200

tri en

tio [A

(A)

tion tion [CE

solv n-ba

SOLV

R

liqui

Ri with [AF

AF

(BN

E

Eli

TE

tors (OR)

C

High speed photographic analysis of initiation of ex-osion in liquids and single crystals of explosive solids speed to the seed of the se plosion in liquids an AFOSR-68-17891 SOLIDUS Normal freezing of binary systems with cubic figuidus and solidus curves [8tM-393J] 04 p0524 N68-13903 SOLUBBLITY Conjugate liquid phases in immiscibility region of sodium compounds [USNRDL-TR-67-86] 01 p0025 N68-10772 Dinonylnaphthalene sulfonates of cesium, sodium, burium, magnesium, and zinc studies as solubilizing agents for methanol, normal propylamine, and acetic 02 p0174 N68-11120 Solubilization of centigram and kilogram plant samples of some elements and isotopes
[UCLA-12-613] 03 p0313 N68-12330 Liquid-liquid immiscibility in barium oxide silicon ioxide system [TR-12] 05 p0681 N68-14914 Electrochemical unidation of zinc, thermal decomposition of silver oxide, and solubility determinations o silver oxides in potan [NASA-CR-92346] 06 p0770 N68-15856 Qualitative analysis of dis plution and mobility of hydrogen in copper [AERE-TRANS-1083] 06 p0795 N68-16019 Gas solubilities and transport properties in fuel cell electrolytes [NASA-CR-92997] 07 p0955 N68-16374 Solubility of helium, nitrogen, and argon in liquid drazine, methylhydrazine, and nonsymmetrical methylhydrazine at various temperatures and pres-[TR-0158/3210-10/-2] 10 p1583 N68-20087 Fusion solubility of tin in gallic [FTD-HT-66-557] 11 p1770 N68-20836 Solubility, segregation, and diffusion of sulfur in alpha-iron 12 p1832 N68-21984 Solubility of transition metals kaline earth metals - annotated b [UCRL-50315] is in liquid alkali and al-12 p1838 N68-22642 scibility in boron trioxide silicon Metastable imm (REPT.-67-C-244) 13 p2089 N68-23776 Solubility of niobium and vanadium in magnesium determined by isothermal aging and subsequent (UCRL-TRANS-10219) 14 p2217 N68-25138 Solubility and diffusivity of hydrogen in zirconium by [WAPD-TRANS-86] 14 p2219 N68-25520 Solubility of chromium in liquid plutonium [LA-3850] 15 p2404 N68-25670 Thermodynamics of solution of mercury metal in hydrocarbons, aliphatic compounds, ethers, water, and other solvents 15 p2575 N68-26226 Crystal structure and orientation, and solubility effects on adhesion and sliding friction of four metal single crystals in vacuum [NASA-TM-X-60090] 16 p2680 N68-27612 Solubility of aluminum oxide in rutile titanium diox-16 p2611 N68-27826 Radiographic studies on U-Ce-Zr ternary oxides, nitrides, and carbides for solubility and crystal structure temperature dependence [EURTRR.387] 17 p2842 N68-29045 Solubilities of several gases in liquid methane and 18 p3156 N68-30077 Synthesis and molecular structure of thermostable soluble polyimides.
[NASA-TT-F-11768] 18 p3025 N68-30213 18 p3025 N68-30213 Gas solubilities and transport properties in fuel cell electrolytes [NASA-CR-95957] 19 p3203 N68-31340 Heat transfer by direct contact of immiscible liquids in spray column 20 p3611 N68-33139

olution kinetics and thermodynamics for 23 p4012 N68-36902 Chemical analysis of copper solubility in sodiu using colorimetry and atomic absorption spectromet techniques [AF-AEC-12671] 24 p4266 N68-374 24 p4266 N68-37442 Phase equilibrium diagrams of trilaurylamine, dodecane, nitric acid, and tetravalent plutonium [CEA-R-3478] 24 p4216 N68-37790 SOLUTES H-cell for stirring and solute addition in sealed, iso-lated, and heated systems using molten salt electrolytes [LA-3733] 05 p0607 N68-14182 Dislocati 11 p1715 N68-21350 Spectrophotometric data analysis for determining radiogold sol concentration [CNEA-200] 14 p2209 N68-24438 Temperature dependence of conduction electron scattering in gold and platinum alloy solutes using potentiometric analysis 17 p2953 N68-28435 Supercooling in Zn-Cd alloys, crystal growth in juid solute, mold and coating effects on ingot surface, agnetic field effects on ingot crystal structure, and am boundary migration TR-2] 17 p2902 N68-29367 Operating variables affecting solute elution and per-formance of preparative gas-liquid elution chromatog-raphy column and bed 18 p3022 N68-30059 Transport relationship for sorption-desorption laracteristics of son-biodegradable solute ORO-490-12A] 23 p4006 N68-36230 [ORO-490-12A] Relative partial molar heats of solution calculated for lected solutes in liquid plutonium A-3951] 24 p4211 N68-37562 ILA-39511 SOLUTION Solution of Einstein gravitational field equation by 19 p3362 N68-30890 NT DETO NT GAS DETONABLE GAS MIXTURES
GAS MIXTURES

NT NUCLEAR EMULSIONS
NT PHOTOGRAPHIC EMULSIONS
NT SOLID SOLUTIONS

Method for calculating partial volumes of com-NASA-TN-D-4199] 02 p0178 N68-11621 Theoretical analysis of moving boundary systems /concentrated and dilute solutions/ and derivation of

transference nur [UCRL-17807] 05 p0619 N68-14139 Methods for determining lithium hydroxide solutions - acid-base titration with hydroxhloric acid, acid-base titration with benzoic acid, and sulfate and carbonate 05 p0625 N68-14581

Mechanisms of oxidation-reduction reactions in solution treated in terms of electron transfer processes [BNL-50070/T-469/] 07 p0953 N68-16143 Viscosity of concentrated solutions of calcium in liquid ammonia in temperature interval of minus 40 deg C to minus 70 deg C [UCRL-17858] 07 p0953 N68-16192

[NASA-TN-D-4297] 08 p1145 N68-18219

Rediometric automatic analyses on phosphates, and sulfates in aqueous solutions
[EUR-3738.F] 09 p1293 N68-18492 Time-resolved spark emission spectroscopic identifi-cation of ionization levels in solids and solutions 10 p1489 N68-20118

Magnetic properties of dilute liquid He 3-He 4 solu-

11 p1744 N68-20612 Electrolytic conductivity of aqueous solutions of hydrofluoric acid [NASA-CR-94359] 12 p1834 N68-22224 Electrodeless conductivit curacy and sensitivity for so of inorganic products ctivity meter with improved ac-

[CEA-1-3344] 12 p1880 N68-23021

13 p2020 N68-24068 Viscosity and nuclear magnetic resonance studies of vinyl aromatic polymer solutions [NASA-CR-94786] 14 p2277 N68-25010

Precipitation of thorium and uranium by ion exchange resins in nitrate solutions [CEA-R-3222] 14 p2217 N68-25142 Capacitance of electrical boundary layers at silver odide aqueous solution interface 15 p2413 N68-26169 Preparation of thorium oxide-uranium oxide solu-ions of low nitrate content from thorium uranyl nitrate obuttions [ORNL-TM-2128] 16 p2612 N68-28021 ental studies of concentrated electrolyte solutions [COO-1712-1] 16 p2615 N68-28186 Plutonium 238 dioxide microspheres prepared by the sol-gel process [MLM-1450] 17 p2843 N68-29170 Nonuniform magnetic field effect on ferromagnetic olloidal solutions [NASA-TN-D-4676] 18 p3022 N68-30044 Analysis of free acidity in plu [EUR-3934.E] 18 p3026 N68-30284 Separation and purification of manganese leaching solution using high temperature and pressure methods [BM-RI-7166] 18 p3028 N68-30495 Zinc corrosion in solution hydroxide over wide pH range [ARL/MET-67] of water and sod 19 p3231 N68-31890 Mass transfer of water from single thoria sol droplets fluidized in 2-ethyl-1-hexanol [ORNL-TM-2163] 19 p3231 N68-31908 Stress corrosion cracking of titanium and titanium aluminum alloys in methanol iodine solution [RIAS-TR-68-4C] 20 p3495 N68-32518 Absorption of purines, aqueous solution by m nidines, and nucleoside orillionite occurring as [NASA-CR-89254] 21 p3636 N68-34245 Comparison of structure of insulin in crystalline and slution state 22 p3810 N68-34940 onance absorption of solvated alkali onia ethylamine mixture 23 p4008 N68-36392 Electron spin resor

Properties of oxygen-containing radicals in radiation chemistry and photochemistry of aqueous solutions [NYO-3753-3] 23 p4013 N68-36959 Ion exchange and solution che and alkaline earths [NYO-2269-12] emistry of alkali metals, 23 p4015 N68-37094 Prediction method for diffusion coefficient calcula-ions on polymeric solutions

24 p4271 N68-37764 Phase equilibrium diagrams of triburylamine, dodecane, nitric acid, and tetravalent plutonium (CEA-R-3478) 24 p4216 N68-37790 Aqueous solutions as emergency coolants for reactor (SNE-40)

24 p4295 N68-37858 SOLVENT EXTRACTION

Spectrophotometric determination of platinum /4/ by solvent extraction with metal chelate [NASA-TT-F-11380] 01 p0019 N68-10336 Plant for extraction by solvent of strontium-90 and rare earths from cesium 137 free fission product solu-[EUR-3612.F] 01 p0026 N68-10863 Pilot plant for solvent extraction of strontium 90 from fission products [EUR-3613.F] 01 p0026 N68-10864

Organometallic molecular chelate extraction into or-ganic solvents, and chromatographic analysis of quin-linol chelate adsorption onnot chelute adsorption [ARL-67-0191] 04 p0465 N68-12885

Extraction behavior of cerium group lanthanides in imary amine-chelating agent system ethylemetrismine partnersis and challen diethyleuetriamine pentracetic acid chelate (BM-RI-7100) 05 p0619 N68-14113

Isotopic labeling used for determining 8-hydrox-quinoline complexes of trace elements during solvent straction from tungsten solutions BM-B1-7072 NSS-14496 [BM-RI-7072] 05 p0624 N68-14496 Progress reports for eight studies on separation of

05 p0624 N68-14518 Inotopic tracer analyses on dissociation constant extraction yields of aromatic Schiff bases as fu [INP-573/C] 07 p0953 N68-16159 Column-chromatographic separation of curium 242 in 100 Ci range from neutron-irradiated americium 241

10 p1480 N68-19563

Solubility of sintered uranium of of sintered u

Review of solubility, per

polymer diluent syste NASA-CR-972181

m oxide-plutonium oxide

21 p3725 N68-34404

bility, and diffusivity in

23 p4083 N68-36640

Experimental study of basic alpha-elimination of ydrochloric acid from chloroamines evolopment of United program, technological 10 p1480 N68-19591 04 p0441 N68-13122 Solvent extraction to of organic racemates an ues for partial resolution tically active neutral che-18 p3022 N68-30058 om produced by XBcoxyribonucleic acid, tobacco mosaic virus, and its acleic acid by ultraviolet radiation Structural responses 70, B-58, and F-104 air [NSBEO-2-67] 11 p1658 N68-21750 04 p0588 N68-13270 [AROD-3909-3-C] of rare earth lity constants of rare ed from solvent extrac-Monohydrate stra sacetylacetonales an ffect on shock wave a generated by super-20 p3408 N68-33479 Effect of structure and solvent polarity on ultraviolet sorption spectra of carboxylate derivatives 21 p3648 N68-33814 sonic aircraft [ISAS-416] 05 e0701 N68-14558 tion data [ORO-2124-12] 12 p1840 N68-22857 Peak press ced by Mirage 3 cobalt in ammoniacal sol-id nickel-cobalt ores 13 p2017 N68-23827 Separation of nickel and vents from autoclave leacher Birefringence and viscosity used to determine dependence of optical anisotropy of macromolecules on properties of polyvinyl solvents
[FTD-MT-24-212-67] 22 p3823 N68-35286 (ISL-T-30/67) 06 p0766 N68-15019 methods and instru-Standardization mentation to mean [ISL-T-23/67] 22 p3823 N68-35286 Separation of mercury from silver in nitric acid solu-06 p0844 N68-15270 Low concentrations of acid and water effect on metal corrosion in organic solvents 23 p4017 N68-37367 [AERE-M-2008] 14 p2214 N68-24728 Shock wave-vortex alects of winds and inhora action concept for ef-s atmosphere on sonic Dissociation of lithium and sodii (TR-17) ts and basicities determined for Protonation consta selected organic oxide [NUS-R-518] m tetramethylalu-14 p2216 N68-24982 [NASA-CR-92676] 07 p0936 N68-16916 Mathematical model sieve plate, solvent ex dispersed phase holdup fu [ORNL-TM-1229] odel for flooding rate in pulsed, at extraction column, based on 24 p4220 N68-38363 Airport-community is [NASA-TM-X-57689] 09 p1271 N68-19212 SOMMERFELD APPROXIMATION Transient response of Hi lication to senic boom res itz resonator with ap-Nonstationary plane wave diffraction by impedance wedge solved by Sommerfeld integral and special tabu-lated functions 14 p2218 N68-25180 9 p1384 N68-19278 Radiochemical and reactor technological articles on elvent extraction, chromatographic separation, and Sonic booms, explosive I ns, and flyovers by jet 12 p1862 N68-22353 nuclear fuel proce (ORNL-4075) aircraft [ARC-R&M-3475] 14 p2219 N68-25581 SOMMERFELD WAVES 10 p1459 N68-20365 Thermodynamic properties of nonideal liquid mix-res, excess Gibbs free energy, and mixed solvents for Sonic boom research/confere [NASA-SP-147] ransient ground wave propagation, electric field, se fronts, and Green function for Sommerfeld waves 11 p1624 N68-21413 Sonic boom theory /review/ 16 p2792 N68-27215 16 p2655 N68-27664 11 p1624 N68-21414 lon exchange, solvent extraction, and electrolysis in purification of high grade indium. [BARC-324] 18 p3030 N68-30591 tion for and scattering of Sommer-NASA research on sonic boom generation /review/ 11 p1624 N68-21415 ng annulus 16 p2715 N68-27727 ffects of aircraft opera-com signatures 11 p1624 N68-21416 Sonic boom flight resear Purification of cyclohexane as solvent for ultraviolet NT SONOBUOYS 20 n3420 N68-32606 Redundancy in binary patterns from sonar signals treated as Markov information source and as finite Sulfur extraction from molybdenite flotation concen-ate by thermal reduction Atmospheric effects on sonic 11 p1624 N68-21417 trate by therma [BM-RI-7185] 22 p3822 N68-35094 Dynamic response of people and buildings to son [USL-854] 03 p0320 N68-12015 Solvent extraction and recovery of nuclear fuels for Rapsodic nuclear react [ANL-TRANS-619] 22 p31 very of plutonium and and wedge shaped sonar displ [TR-750-9] of ring shaped sweep-line, 11 p1624 N68-21418 22 p3828 N68-35713 Atmospheric effects on sonic boom characteristics [NASA-TN-D-4588] 14 p2184 N68-24662 05 p0631 N68-14632 Actinide elements study wi ith preparation by dissolu-tion vitrification by induc-Elastic surface transformati playing passive sonar and pho [TM-775-1] on for processing and dis-ographic information 06 p0845 N68-15567 tics and use as ock expansion tu tion heating ionic boom simulat (NASA-CR-1055) 22 p3829 N68-35739 14 p2236 N68-24966 Model tests of pictorial sonar using broadband sound projection and data processing of target echo returns to form high resolution beams [GJ-2510-1641] 13 p2030 N68-24198 High performance stacked Clone contactor for solvent extraction of nuclear fuels

[ORNL-4267]

22 p3854 N68-35961 ques for microphones Precision calibrated in sonic boom [NASA-CR-1075] 14 p2258 N68-25316 Determination of americium 241 in plutonium by obvent extraction using alpha counting and di-n-butyl-Variations of sonic b ic effects on flight tests [NASA-TM-X-59633] esulting from atmospher-Near field array technique es applied to sonar trans-14 p2186 N68-25342 n-butylphospi [ARH-SA-1] [NRL-6734] 18 p3033 N68-29722 23 p4010 N68-36757 atistical detection theory applied to adaptive signal and processing for active sonar system 18 p3034 N68-29860 Aircraft configuration, operating conditions, and en-ronmental factors studies for effects on sonic boom SOLVENTS Role of reactive solutes in radiation chemistry of liquids using ethane as solvent [COO-1273-4] 01 p0019 N68-10341 INASA-TM-X-604291 14 p2188 N68-25517 State variable techniques for solving Fredholm in-tegral equations used in sonar array processing Mathematical analysis of statistical magnifications of sonic booms by atmosphere [FFA-104] 15 p2383 N68-25739 hanisms of solvent exchange reactions etal ions in solution Rates and mecha [AD-670557] 19 p3244 N68-31824 Statistical analysis of atm boom magnification [FFA-112] [AFOSR-67-2387] 02 p0176 N68-11362 heric effects on sonic Electrical and mechanical characteristics of 20-hannel telemetry system using vertically suspended Isotope effect studies of solvolysis of alkyl halides in 15 p2384 N68-25801 atures 06 p0789 N68-15619 [AFUP-67-1] tion on sonic boom research in (TR-147) 24 p4227 N68-38048 Commercial solvent for sodium removal and hard-NT DROPSONDES NT IONOSONDES NT RADIOSONDES NT RAWINSONDES 15 p2388 N68-26852 13 p2012 N68-23374 nearch projects on sonic and minimization 15 p2388 N68-26853 Equilibrium constants for association of various phenols in low dielectric nonaqueous solvents [SC-CR-68-3521] 15 p2419 N68-26725 Summary of government re com generation, propagation Research and development guide for operational neteorological sounding rocket system stressing vehi-Electron structure influ ave potential, and magne ansition metal complexes ence on polarographic half 15 p2388 N68-26854 INASA-CR-91057] 16 p2617 N68-28325 03 p0417 N68-11977 iversities research projects on sonic booms and to of research on generation and propagation of Mission profiles, and tra ory criteria for asteroid Resolution of optical is solvents and sorbents ers using optically active (RF-86-O) 15 n2388 N68-26855 17 p2837 N68-28446 05 p0735 N68-14137 Performance require and economic costs to apersonic transport 17 p2805 N68-28831 ntation, launcher, and testing for iding rocket system 16 p2699 N68-26971 Design, instrumer meteorological soun [AFCRL-68-0132] TBP solvent, solvent extracti ad filtering in development of traction, leaching of ceramics nent of French breeder reac-INASA-TN-D-46771 IORNL-TR-17651 Atmospheric scattering of a vortices along boundary layers [NPL-AERO-1260] 17 p2916 N68-29114 nic booms by turbulent SONIC ANEMOMETERS rement of nonvolatile residue of Circuitry and design of continuous wave sonic semometer for wind velocity measurements BBN-1311] 18 p3076 N68-30383 18 p3001 N64-29892 c boom and sound pres-analyzed 18 p3179 N68-30286 17 p2888 N68-29326 (BBN-1311) Solvent purity meters for monitoring nonvolatile residue content of cleaning solvents analyzing and evaluating Aircraft sonic boom characteristics predicted from near field data obtained in wind tunnel [NASA-TM-X-1477] 02 p0160 N68-11772 17 p2888 N68-29327 Computer program for as spectra and loudness of sonic b Solvents for electrolyte batteries screened by conductivity, viscosity, and density and studied by gas chromstography. Kurl Fischer citration, X ray distraction, and voltammetry [SC-CR-67-2855]

17 p2816 N68-29462 18 p3003 N68-30587 Mathematical models of supersonic boom based on nonlinear short wave theory [ONERA-TP-521] 03 p0302 N68-12694 Sonic boom origin based on nonlinear theory of short (NASA-TT-F-11474) y ... 18 p3003 Nes-30792

SU

Ira i

71

(FA

F-II

SOUNI

O

So along [NA

in w

SCL

Uni outlin nonic

Disa shock mediu

Aco nature (FTD-

Aco

AD-6

Acor

SOUND I

Azim and cor [ECON

Acou for somi [ECOM

Math

Station waves a mospher technique [CP-21,

19 p3197 N68-30871

19 p3197 N68-30932

Theoretical and experimental data on effects of com-lex signal reflections on acoustic pressure spectra of

Electromagnetic and hydromechanic methods of SONOBUOYS mulating sonic booms 19 p3197 N68-30872 Whitman equations for calculating relation between peak values of pressure and signal duration in sonic popular comments. 19 p3197 N68-30873 mulate sonic boom for an and structures 19 p3315 N68-31197 Linear explosive charges to simula field scale studies of effects on man a Design of bodies to produce specified sonic boom [NASA-TN-D-4704] 19 p3194 N68-31484 Awakening and startle effects of simulated sonic [NASA-CR-1193] 20 p3407 N68-33005 response of simply supported plate to n waves at nor[NASA-CR-1175] 21 n3782 NCC-Summary and reconduction according nendations for aircraft noise 21 p3623 N68-33880 Exposure pattern develop inhomogeneous atmosphere structures of sonic boom [NASA-TM-X-61240] opment, propagation through re, and effects on people and 21 p3626 N68-34432 Conference on sonic boom reduction in supersonic transport flight - shock wave propagation and refraction, prediction methods for acoustic attenuation, and aerodynamic engineering aspects [NASA-SP-180] 22 p3802 N68-34907 Statistical analyses of test flight data for atmospheric effects on sonic boom 22 p3802 N68-34908 Sonic boom ground pressure measurements for SR-22 p3802 N68-34909 Test data evaluation and prediction method for hypersonic boom signatures 22 p3802 N68-34910 Supersonic transport near field design concepts for plateau pressure signature to reduce sonic boom 22 p3803 N68-34911 Sonic boom efficiency factor analyses for rectangular configuration, high aspect ratio arrow wing, and delta wing models 22 p3803 N68-34912 ssure prediction methods, Mach number effects, onic boom reduction for supersonic transport 22 p3803 N68-34913 Digital computer with visual display for sonic boom flow field analysis 22 p3803 N68-34914 Integrated supersonic transport engine design for reduced lift connected sonic boom effects 22 p3803 N68-34917 Expansion series method for analyses of shock wave profiles in far field sonic boom 22 p3803 N68-34918 Second order supersonic flow field effects on sonic 22 p3803 N68-34919 Linearized supersonic aerodynamic design theory for large sonic boom reduction 22 p3804 N68-34920 Second order wave structure of aerodynamic body in supersonic flow 22 p3855 N68-34921 Ray expansion method for predicting shock wave propagation and sonic boom intensity 22 p3804 N68-34923 Computer program for calculating aircraft sonic boom agnatures on ground 22 p3804 N68-34924 Similarity rules for ray analysis in nonlinear acoustic 22 p3855 N68-34926 Effects of various simulated sonic boom waveforms on human subjective response [NASA-CR-1192] 22 p3810 N68-35103 Measurement and interpretation of ground vibra-tions, produced by seismic effect of sonic boom [NASA-CR-1137] 22 p3868 N68-35151 SONIC FLOW

U TRANSONIC FLOW SONIC NOZZLES Equations of motion and method of characteristics for two dimensional jet flow from sonic nozzle [ME-1058-6608F] 06 p0831 N68-16060

SOOT cle counting [LA-3821-MS] SORBENTS SORPTION (GA-8574) SORTING U CLASSIFYING U ACOUSTICS SOUND BARRIER SOUND FIELDS Reynolds numb [AF-1754/3] [NASA-CR-1118] [REPT.-0424-SR-2]

Reduction of secondary device-scattered emission exploration of low energy discharges, bubble pulse suppression, and effects of gas disolved in underwater electrodeless spark sound source [AVSSD-0399-67-CR] 01 p0037 N68-10282

01 p0037 N68-10282

Control of magnesium compounds during operation of silver chloride magnesium sea water battery for sonobuoy applicati (NOLTR-67-120) 11 p1627 N68-20936 Analytical and experimental study of electrical con-uctivity of rubber - carbon black vulcanizates under ductivity of rubber - carbon i 06 p0857 N68-15148 High intensity noise ge accoraft systems and or Techniques for deagglomerating and preparing car-bon black samples for electron micrography and parti-[NASA-CR-95991] 08 p1189 N68-17261 NT ABSORBENTS NT ADSORBENTS Resolution of optical isomers using optically active sivents and sorbents 17 p2837 N68-28446 NT ADSORPTION NT CHEMISORPTION Corrosion and porosity of electrodeposited metal protective coatings by hydrogen sorption measurements [RIA-68-717] 16 p2675 N68-27223 SOUND INTENSITY NT ZERO SOUND Kinetics of air sorption in nitrogen cooled ultrahigh 20 p3538 N68-32999 Cesium sorption tests in porous materials for ther-tionic converters Linearized, and nonline estimating atmospheric n aerological observations [NASA-CR-61187] 22 p3809 N68-35962 Growth of noisiness for to oise at various frequencies w sure levels [FAA-DS-67-21] SOUND AMPLIFICATION Hopping conductivity effect on acoustic attenuation sound waves in CdS 19 p3353 N68-31258 U ACQUISTIC VELOCITY Flow and sound field calculations of two dimensional spinning vortices using method of matched asymptotic expansions 04 p0544 N68-13205 Shadowgraph of sound field from cold supersonic Sound level measurem mula for acoustic perception of [NASA-TT-F-11926] [NASA-CR-91337] 04 p0545 N68-13394 SOUND LOCALIZATION Contour charts of sound speed fields in Pacific Ocean computed from hydrographic data [HIG-67-7] 05 p0653 N68-14781 Porous trailing edge effect on blade generated sound field in moving air stream [NASA-CR-66565] 10 p1455 N68-19791 Experimental deter Response measurements of sound fields of variable intensity [NASA-CR-66576] ents of model structures to 11 p1794 N68-20995 Convective heat transfer from horizontal cylinder rith buoyancy in sound field of large streaming leynolds numbers SOUND PERCEPTION
U AUDITORY PERCEPTION 14 p2369 N68-24413 Predictions of response characteristics of aircraft anel exposed to pseudo-sound fields of jet wake D6-9944, V. 4] 17 p2804 N68-29281 SOUND PRESSURE simulating vertical takeoff [D2-2463] Acoustic near field mea rements of model air jet ONERA-TP-4911 20 p3398 N68-32217 Subjective response to far field noise characteristics of V/STOL aircraft sized to carry 60 passengers over aircraft [INC/C1/P18] 20 p3411 N68-33009 Numerical evaluation of the series expansion method for prediction of far field intensity from near field 22 p3917 N68-35368 Structure of edgetone flow field 23 p4044 N68-36127 Acoustic holography demonstrates recording at one space point, wave front may be synthesized, and object siluminated by changing wave field [DOUGLAS PAPER-5150] 24 p4257 N68-38000 SOUND GENERATORS

SUBJECT INDEX Mechanisms causing heat driven pressure oscilla-tions in gas-thermoacoustic generator design [SC-CR-67-2759] 05 p0725 N68-14685 Performance tests of rotating gas jet generator for strong traveling transverse acoustic modes [NASA-TN-D-4380] 07 p0988 N68-16998 07 p0988 N68-16998 Generation of shock waves and acoustic energy conversion in wide band noise generator
[AFFDL-TR-67-88] 15 p2509 N68-26370 eration for acoustic testing of nents 19 p3260 N68-32129 Submerged circular cylindrical shell reaction to pres-ire wave propagated at superionic speed in direction sound generator 21 p3788 N68-34112 Test instruments and methods - noise generator and spectrum analyzer for measuring system random noise and impulse noise signals 22 p3874 N68-35131 Low frequency plane wave sound generator and im-edance measuring device applicable in environmental utilification testing of spacecraft and subsystems 23 p4042 N68-37407 Sound pressure and intensity, human tolerance to noise, and automatic loudness measuring device 02 p0210 N68-f1168 Sound pressure, fields, and levels related to loudness casurements with humans 02 p0210 N68-11169 ear ray tracing methods for noise field intensities from 06 p0881 N68-15870 for tones and narrow bands of cies with respect to sound pres-07 p0950 N68-16677 Stimulus intensity and adaptation level as determi-nts of simple reaction time 13 p2004 N68-23387 Physiological factors involved in evaluation of loud-ness of short duration sounds 18 p3011 N68-30585 High intensity sound tests of acoustic fatigue strength of turbofan engine nacelle modification to reduce fancompressor souse propagation [DAC-33770] 20 µ3399 N68-32220 ents and approximation for-23 p4001 N68-36316 Electrophysiological study of sound localization and auditory discrimination in monkeys [NASA-CR-82338] 16 p2597 N68-27436 n of lateral signal percepntinuous masking noise 20 p3435 N68-32410 Noise origins in axial compressors 20 p3392 N68-33010 SOUND MEASUREMENT
U ACOUSTIC MEASUREMENTS cer to measure acoustic pres-03 p0348 N68-12696 Acoustic noise data on wind tunnel scale model of Titan 3 booster with varying payloads 14 p2182 N68-25486 Calculating maximum sound pressure spectrum of jet 14 p2189 N68-25628 Target pressure and damage data from impacts by explosively propelled aluminum projectile [NASA-TM-X-1597] 15 p2566 N68-25819 NASA-1 m-A-1971
Vibration and sound field of flat plate excited by turbulent boundary layer pressure fluctuations with development of analytical computer program 16 p2781 N68-27735 Transient response to sonic boom and sound pres-ire of rectangular structure is analyzed 18 p3179 N68-30286 Calculating sound pressure spectra of stationary jets and jets in flight

U ACOUSTIC VELOCITY

SONIC WAVEGUIDES

U ACOUSTIC DELAY LINES

[CP-21, PT. 2]

DUND TRANSDUCERS

NT ELECTROACOUSTIC TRANSDUCERS

NT HYDROPHONES

u iv se

NT JET AIRCRAFT NOISE NT LAMB WAVES NT NOISE (SOUND) NT SONIC BOOMS NT THERMAL NOISE NT MICROPHONES iques for ger m of very high 19 p3207 N68-30948 NASA-CR-913381 Snapping mechanics acoustic shock wave press [PB-177581T] 04 p0557 N68-13261 es of sylindrical panel under Audio transluctri ECOM-0204-2] 19 p3380 N68-31739 NASA-TT-F-11334] maximum jet aircraft static and flight condi-werall sound pressure ffects of non-ideal sup-ibrations of structural ity levels for gro coverting value (USL-822) 09 p1439 N68-18275 requency accounts NASA-CR-91338 [D6-15082TN, REV. A] 04 p0557 N68-13261 20 p3396 N68-32197 or device for mea Predicting noise inter from jet aircraft exhaust [D6-2357TN, REV. A] d sound pressure levels 10 p1537 N68-20024 Accentic array with c for sonic observation of g [ECOM-5166] Acoustic measurements of pressure levels during in floor 707-320B model [T6-2418] Iterative met 06 p0035 N68-15361 20 p3397 N68-32209 (SR-1) 19 p3277 N68-31395 gine far field noise specays of small magnetos-at air-water surfaces 22 p3876 N68-35298 Acoustic interaction trictive-stack sonar tra [AD-672926] (TR-R-549) 06 p0880 N68-15549 20 p3398 N68-32213 ments for SRrum produced by large NT TELEPHONY 22 p3802 N68-34909 Cavity ion effects, shallow and sents, acoustical instru-08 p1210 N68-17959 FAA regulation criteria pr craft for noise reduction [FAA-68-34] cond for certifying air-Ray represes Production of unifor transmic scattering of is [DLR-FB-67-91] os poess Nes-14669 23 p3987 N68-36068 REF-67-65) ound pressure levels of an up 23 p3991 N68-36913 Acoustic measurement F-[11A aircraft during gr [AMRL-TR-68-14] Meteorological, ined during SOTRAN TNT Mexico (ECOM-5129) 09 p1383 N68-19117 OUND PROPAGATION NT VOICE 05 m0453 N68-14678 Jet aircraft tion and choke [QPR-8] e reduction by absorp-Octave band movable surface [TR-6705.289] 05 p0732 N68-14808 emical installations 02 p0196 N68-11780 Cardiovascular system ects on transmission ch er and property ef-tics of sounds and Sound and ult n and absorption NASA-TT-F-11455] 05 p0728 N68-14497 07 p0943 N68-16389 rasonic sound waves act material for ul-Optical methods for a [TR-17] 10 p1559 N68-20003 (SCL-DR-67-110) 05 p0681 N68-14601 Finite difference a equation in near field (TR-7) of acoustic radiation (TR-7) 13 p2109 N68-23323 Propagation of zero sour nd in liquid helium 3 11 p1749 N68-21725 13 p2109 N68-23323 Shock front propagation absorbers in interaction of boundary layer measured wi [AMRL-TR-67-120, V. 1] nd nonlinearity of poros ir flow and sound in du h schlieren photography of sound in condensing mixture downstream of walled circular ducts (NASA-TM-X-52442) 13 p2110 N68-23986 15 p2508 N68-26118 15 p2510 N68-26451 seismic data compila-urat detoration 15 p2462 N68-26493 13 p2056 N68-24344 Universities research projects on sonic booms and etline of research on generation and propagation of t on sound insulational 14 p2300 M66-2 (ECOM-5162) Aircroft some and its Spatial percepti sice in streophon [FTD-MT-67-73] INC/CS/P41 ns for signal transc 15 p2388 N68-26855 on and dispersion by dense particles 15 p2511 N68-26596 ects of sou 15 p2508 N68-26002 16 p2712 N68-27169 Azimuth to gun firing of and corrected by rawimon [ECOM-5165] ed by sound rangi (FTD-MT-66-174) on and path curvature effects on acoustic e propagation through nonhomogeneous Dissipation and pa shock wave propage 18 p3123 N68-29969 Viscosity and external ints studied for effects 16 p2645 N68-27579 (NASA-CR-95802) y, D and E region turbu-pheric waves and loss-18 p3000 N68-30029 Acoustic clir ous aspects of sound in entinuous wave sonic essurements 18 p3076 N68-30383 Circuitry and design [AFOSR-68-0737] 16 p2652 N68-27350 BBN-1311] m dissociating and dif-Sound transmiss multifamily buildin (AD-669933) and noise reduction in 16 µ2646 Nnsi-27603 t and theory on sudio beams in crystals 16 µ2717 N66-28259 tohydrodynamics, and fusing gas [AD-670087] 18 p3125 N68-30757 18 p3125 N68-30736 Fitzgeralda piezoel frequency resonances [NASA-TN-D-4625] Acoustics and sound to from volume and surface d [NRL-MEMO-1865] sion and propagation in aqueous dextran 18 p3125 N68-30802 19 p3296 N68-30966 cavity on bone-elicited als of cut ear 21 p3628 N68-33698 Fluid level effects in ea lar shell submerged [TM-619.3111-07] 19 p3375 N68-31103 louized gas d waves, electron d of column instabil (SU-IPR-226) SOUND RANGING AMRL-TR-67-120, V. 31 17 p2949 N68-29017 current instabilities in 5 from sound wave and ophones 14 p2261 N68-25563 19 p3318 N68-31963 Azimuth to gun fire and corrected by rawi [ECOM-5165] ikm translation n firing de 15 p2460 N68-26198 p3383 N68-32127 18 n3149 N68-29691 Acoustic array with capacitor microphone sensors for sonic observation of gun probe projectiles [ECOM-5166] 15 p2471 N68-26926 nd transmission in ab-tofan ongine rotational 18 p3123 N68-30252 20 p3398 N68-32212 ric absorption tests for erminations 23 p4012 N68-36903 20 p3476 N68-32320 20 m3458 N68-32337 Stationary wind effects on propagation of sound waves and variation of sound velocity due to at-neapheric temperature - ultrasonic propagation SOUND VELOCITY
U ACOUSTIC VELOCITY exceptoric temperature techniques for ranging in ear [CP-21, PT. 2] SOUND WAVES

NT AERODYNAMIC NOISE

HT AERCEAFT NOISE

HT ELECTROACOUSTIC WAVES

NT ENGINE NOISE

21 p3732 N68-34187

22 p3855 N64-34925

Z Williams

LEADI WASHING

5

1

(ES

D

AD

SOUR

So

Ce

[NAS

Cer

SOUTH

Amer [NAS

Bib!

Geo

sula co

Nike of Sou

INAS

Balle during 1966 [SC-T-

Aero (M-720

OUTHE

NT A

ospher shere NASA-

Project Twinkle - aerodynamics and ballistics of pache-Dart and Tomahawk-Dart rocket and arachite systems used to study atmospheric causes to Normal velocity distribution on arbitrary three incessional scattering surface struck by weak acoustic REPT.-321 22 p3972 N68-35395 Superconductivity of confined electrons of negligible thickness studied using quantized sound waves 23 p4148 N68-36168 cal data gathered above 30 kilo Theoretical study of acou teraction of turbulent enviro [NASA-CR-61985] atic wave generation in in-mment with shock wave 23 p4107 N68-36382 Aerodynamics of wing planforms and vertical takeoff sircraft - jet lift system effects, lift augmentation for rectangular wing, and design of recoverable rockets with parayring. SOUNDERS SOUNDING with parawings [DLR-MITT.-67-18] SOUNDING NT BALLOON SOUNDING Design, and aerodynamic evaluation of recoverable high altitude sounding rocket models with flexible NT HONOSPHERIC SOUNDING NT ROCKET SOUNDING Aircraft acundings between 30 m and 6 km to deter-ine electric properties of atmosphere over arctic re-Gun launched missile system for scientific probing of [SRI-TL-1] 09 p1332 N68-18432 Data format converter of pulse position modulation ground station for sounding rocket flights [NASA-TM-X-63070] 06 p0811 N68-15745 Electromagnetic field formation and use in geological exploration (JPRS-44637) 09 p1335 N68-19113 High altitude meteorological soundings in United States to obtain rawinsonde and rocket data WBTM-DATAC-1] 07 p1016 N68-16139 Five inch gun meteorological sounding site at Highwater, Quebec [BRL-MR-1929] 23 p4092 N68-36190 Diffuse dayglow data evaluation for upper at-mosphere missile observation [ISL-6/66, PT. 2] 07 p0989 N68-16151 Acoustic measurement of tropospheric turbulence by portable sounder [WRE-TM-CPD/T/141] 23 p4057 N68-37072 Upper atmosphere sounding rocket data on diffuse SOUNDING ROCKETS

NT AEROBEE ROCKET VEHICLE sky radiation (ISL-T-22/66, PT. 3) NT - ASTROBEE ROCKET VEHICLES ASTROBEE 1500 ROCKET VEHICLE BLACK BRANT SOUNDING ROCKETS Construction, and electric equipment of modified rocket sonde for measuring light diffusion during BLACK BRANT 2 SOUNDING ROCKET BLACK BRANT 3 SOUNDING ROCKET BLACK BRANT 5 SOUNDING ROCKET NT (ISL-11/66) Chronological order of events concerning satellite, scientific sounding rocket, and spacecraft missions tracking, command, and data acquinition facilities [NASA-TM-X-60838] 07 p1084 No8-16193 DORNIER PARAGLIDER ROCKET VEHICLE NT SKYLARK ROCKET VEHICLE NT VERONIQUE ROCKET VEHICLES NT WASP SOUNDING ROCKET Acquisition, conditioni in ionospheric top-side sor [ESRO-TM-99] Meteorological rocket network firings summary 01 p0087 N68-10501 Pulse height and pulse shape data telemetered from sounding rocket flight of directional neutron detector [NASA-CR-92683] 07 p1086 N68-16913 ment of secondary neutron flux in balloon and rocket experiments [AFCRL-67-0493] 01 p0058 N68-10514 Attitude control and guidance systems for sounding Research and development guide for operational meteorological sounding rocket system stressing vehi-Attitude control of sounding rockets by inertial and stellar sensor for stellar oriented experiments 08 pl 199 N68-17420 [NASA-CR-91057] 03 p0417 N68-11977 Arctic D region studied b ed by integrated rocket-borne and ground based et [AFCRL-67-0282] -03 p0339 N68-12070 (NASA-CR-93209) Tabulated data on so satellite observations Ionospheric D region electron densities and collision frequencies measurement techniques using low 03 p0417 N68-12171 Characteristics of Tacite, Tibere, Titus, Lex, and Crapel sounding rockets [ONERA-NT-118] Tabulated meteorological rocket sounding data for eteorological rocket network stations 03 v0418 N68-12666 Unguided Rockets Ballistics Meteorology Con-Six degree of freedom digital computer program for ajectory simulation of unguided, fin stabilized, wind 04 p0583 N68-13581 Sounding rocket vehicle configuration determination and design problems related to selection of existing vehicle design for new applications [ECOM-5158] Rocket sounding data on several of stratospheric reulation over Chamical, Argentina during spring 04 p0583 N68-13583 New low cost rocket ande system for routine high altitude measurements of temperature and wind verti-cle profiles [CNIE-PE-12] Atmospheric rocket sounding ternational Geophysical Year - ta [NASA-TT-F-11422] 04 p0583 N68-13585 Empirically derived approximations for describing variation with launch angle of sounding rocket per-formance parameters Sounding rocket-satellite experiments for neutral at-mosphere, ionized atmosphere, magnetosphere, and as-04 p0583 N68-13586 Coast phase control system for reducing trajectory ispersion and shaping trajectories of Nike-Apache bunding rocket vehicle Development of lunar a trols for sounding rockets [AFCRL-67-0646] 04 p0583 N68-13587 an for Athena, Aerobee 150, un, and Arcas rockets fired e Range, New Mexico 04 p0584 N68-13588 Calibration and flight perfo-ir densitometer using electro-rahlung X radiation ot prediction data for a pache, Nike-Cajun, and hite Sanda Missile Range (SR-1) Wind varie Ballute device for re cting impact poi mosphere for accurate wind and to [UDRI-TR-67-144] 04 p0501 N68-13590 Wind profiles and shear derived from rocket smoke

04 p0501 N68-13591

04 p0502 N68-13595

d effects on dispersion of

04 p0584 N68-13598 ds for analyzing meteorologioters 04 p0533 N68-13605 05 p0602 N68-13982 05 p0602 N68-13983 06 p0833 N68-15320 07 p0989 N68-16151 07 p0990 N68-16154 07 p0995 N68-16166 and transmission of data 07 p0962 N68-16418 in in rocket-grenade experiment 08 pt167 N68-17595 08 pl170 N68-17855 08 pl 198 N68-18194 09 p1417 N68-18264 09 p1370 N68-19380 g in U.S.S.R. during In-10 p1519 N68-19571 10 p1596 N68-20383 d solar biaxial pointing con-11 p1672 N68-20837 mance of rocket borne beam excited bremss-11 p1696 N68-21015 ing rocket descent 11 p1736 N68-21586 Wind and temperature measurement data from meteorological sounding rockets, and radiosende ob-servations - June 1967 11 p1736 N68-21827 Low energy nuclear reses mosphere rocket soundings [NP-17106] arch program for upper at-12 p1856 N68-22726

related parameters 13 p2057 N68-23225 netospherie radio noise 14 p2344 N68-24733 [NASA-TM-X-63216] Wind and temperat meteorological soundin servations - July 1967 ture measurement data from 14 p2286 N68-25593 Catalog of rocket and satellite data from World Data Center A for period January 1966 to December 1967 15 p2564 N68-26240 Computer analysis on wind frequency response data sounding rockets of sounding roc [ECOM-5177] 15 p2497 N68-26576 using sounding rockets in strat [ECOM-5169] ouphere 15 p2462 N68-26635 Design, instrumentation, lau meteorological sounding rocket [AFCRL-68-0132] incher, and testing for system 16 p2699 N68-26971 Conference papers on aerodynamic stability of sounding rockets, wind tunnel tests, and wind measurement techniques
[AD-667928] 16 p2700 N68-27126 Smoke trail rocket technique for daytime wind mea-surements to 3000 feet [PUBL.-132] 16 p2700 N68-27131 16 p2700 N68-27131 ero temperature measurement data from eteorological sounding rockets, and radiosonde ob-rvations - August 1967 16 p2701 N68-27677 European Space Research Organization satellite operational program and scientific results from sound-ing rocket launchings 17 p2966 N68-28460 CNES annual review of su nunches, educational fun ite and sounding rocket ms, and budgeting of ace programs 17 p2968 N68-28712 Wind and temperature measurement data from eteorological sounding rockets and radiosonde obser-tions - September 1967 17 p2909 N68-29398 Meteorological sounding forecasting of onset of southeast Asia [ETAC-TN-68-2] ng rocket data and weather monsoon over India and 18 p3108 N68-29725 Service manual for Capa satom for sounding rockets of apache payload recovery ts of Nike-Cajun and Nike [NASA-TM-X-63277] 18 p3002 N68-30228 or, /thermistor/, used in tmospheric temperature 18 p3076 N68-30415 Thin film temperatur sounding rocket [ECOM-5188] Operating characteristics of zinc-silver and nickel-dmium batteries for sounding rockets 19 p3202 N68-30961 Stellar and inertial ser system for sounding rockets 19 p3202 N68-31091 nting and acceptance tests for sounding rocket 19 p3372 N68-31198 ments for auroral parti-n measurements 21 p3765 N68-34062 ESRO sounding rocket exper cle and solar and stellar radiation ESRO sounding rocket prog m, and results of scien tific experie 21 p3777 N68-34063 ts at Kiruns Observato-ellite experiments, and ry by sounding rockets at polar cap absorption studi 21 p3761 N68-34064 Sounding rocket and satellite investigation of solar and stellar radiation at Utrecht Space Research Laboratory 21 p3762 N68-34065 Progress in ESRO sounding gram, and Skylark and Dragon rocket and satellite pro-rocket launchings 21 p3777 N68-34066 Progress in ESRO sounding gram with launchings over And 21 p3777 N68-34075 Progress in ESRO sounding a gram, and launching of ESRO 2 ocket and satellite pro-21 p3777 N68-34085 Progress in ESRO sour iding rocket and satellite pro-21 p3777 N68-34098 Antennas for sounding rockets 21 p3659 N68-34167 rocket by paragliders 21 p3778 N68-34171 Guided recovery of at [BMWF-FB-W-68-26]

el.

1

ol

1

et

n

ń

12

n-

63

o-nd

64

lar

66

75

10-

85

148

67

natology of South America

mastrahlung flux-energy spectra inside Gemini 10 craft during flight through south Atlantic mag-anomaly region

Astronomical comparison between South Africa and ile, meteorological observations and photometric ipment at ESO observatories, and three-day ESO increase on photometry

Meteorological wind, and temperature data from at-cemberic radiosonde soundings in Southern Hemi-

Southern oscillations in East Indies and Indonesia re-lated to meteorological and oceanographic data from other parts of world (REPT-88)

20 p3470 N68-32669

05 p0659 N68-14153

06 p0907 N68-15124

09 p1369 N68-19084

NASA-CR-94338

Single versus multiple Voyager capsule bus propu [NASA-CR-94539]

n on capsule mech

aion and subsystem parametric analyses to evalu-rect and orbital entry modes for soft landing cap

e configurations for

13 p2142 N68-23181

19 p3366 N68-31831

Aeroclim (M-72081

SOUTHERN HEMISPHERE NT ANTARCTIC REGIONS

NASA-TN-D-44291

Reliability analysis for with flexible wings [BMWF-FB-W-68-32] ding rocket Polar cap absorption ortwave fadeouts, as orthern and Southern 21 p3778 N68-34206 11 p1780 N68-21771 ESRO sounding rocket program for upper at-couplere wind and temperature measurements and au-eral particles study stronomical transit for observing Southern Hemi-ere stars at observatory in Chile 14 p2255 N68-24655 21 p3779 N68-34241 easurements in lower Nike Apache pitot tube rocket sou Southern Hemisphere stratosphere propagation 22 p3866 N68-34941 along west coast of Sou [NASA-TN-D-4264] rica 14 p2286 N68-25617 dal motion in upper atmosphere 22 p3869 N68-35365 Atmospheric tida [AFCRL-68-0309] al distribution of orbits of Radio survey and streeteers observed in So Infrared radiation emissic upper atmosphere near geom sounding rockets [ASE-1950] ion spectra of earth and metric horizon obtained by misphere 16 p2763 N68-27505 Upper atmospheric wir 28X flight over Southern I [NCAIL-TN-34, V. 2] ul data from GHOST balloon Hemisphere - tables 17 p2908 N68-28905 22 p3870 N68-35370 Transducer syste or recoverable sounding rocket with paraglider [BMWF-FB-W-68-42] Upper atmospheric wi 79R flight over Southern [NCAR-TN-34, V. 10] d data from GHOST balloon lemisphere - tables 17 p2908 N68-28906. 22 p3878 N68-35650 Design and flight test data on Super Loki Dart sounding rocket system for obtaining high altitude win profiles with low cost rocket vehicle and radar-reflective chaff systoad [NASA-CR-61238] 22 p3806 N68-3565 d data from GHOST balloon emisphere - tables 17 p2908 N68-28907 Upper atmospheric wie 34J flight over Southern F [NCAR-TN-34, V. 3] 22 p3806 N68-35655 Balloon data of barotro for Southern Hemisphere [NCAR-TN-34, V. 7] ic flow in upper atm Systems and reliability engineering of winged ecoverable sounding rocket for use over cities BMWF-FB-W-68-44] 22 p3966 N68-35707 17 p2908 N68-29300 Balloon data of barotropic flow in upper atmosp for Southern Hemisphere [NCAR-TN-34, V. 5] 17 p2908 N68-29 Analog to digital conversion system for data obtained by rocket-borne mass spectrometer [BMWF-FB-W-6843] 2 p.369 N48-35709 17 p2908 N68-29301 Balloon data of barote for Southern Hemisphere [NCAR-TN-34, V. 6] se shape and fin geometry effects on static stabili-sounding rocket models in supersonic wind tunnel SA-TM-X-1661] 23 p3985 N68-36509 w in upper atmosp ty of sounding rocket m [NASA-TM-X-1661] 17 p2909 N68-29302 Balloon data of barotropic flor Southern Hemisphere [NCAR-TN-34, V. 1] rw in upper atmosp Occultation of sun's disk during eclipse as seen from 17 p2909 N68-29303 sounding rocket (ESRO-SM-68/ESDAC/) 23 p4172 N68-36992 Balloon data of harotropic flow in upper atmospl for Southern Hemisphere [NCAR-TN-34, V. 11] 17 p2909 N68-29 Wind and temperature measurement data from eteorological sounding rockets, and radiosonde ob-ervations - January 1968 17 p2909 N68-29304 Balloon data of barotropic flo for Southern Hemisphere [NCAR-TN-34, V. 4] w in upper atmosp 23 p4096 N68-37119 rnal tide near stratopause over White Sanda Mis-tange determined from meteorological rocket 17 p2909 N68-29305 sile Range determ w in upper atmosphere [AD-667909] 24 p4280 N68-37867 for Southern Hemisph [NCAR-TN-34, V. 8] 17 p2909 N68-29306 Tabulated noctifucent cloud data as observed from alta, Canada, Greenland, lockand, and Southern misphere during period 1885 - 1966 AG-R-191] 22 p3866 N68-34883 Sources of electrical noise in in 22 p3915 N68-35120 (UAG-R-191) Composition of lunar highla nds, and implications for evolution of earth crust [NASA-TM-X-63348] Temperature change effects on F region electron 22 p3962 N68-35765 SOUTH AMERICA (CSIR-263) 22 p3870 N68-35555 Cerenkov light experiment - Bolivian air shower joint Geomagnetic asymmetric response as function of polarity pattern of interplanetary magnetic field [NASA-CR-97262] 23 p4060 N68-37390 [AFOSR-68-0179] 09 p1333 N68-18711 lonospheric distortion of minitrack signals in South Climatological summary and bibliography of cold regions in Southern Hemisphere
[CRREL-CRSE-1-A3C] 24 p4283 N68-38321 [NASA-TM-X-63136] 09 p1306 N68-19383 Bibliography on climate of Ver [WB/BC-27] 10 p1551 N68-19565 SOYBEARS shic data on Antarctic penin-th South America 14 p2244 N68-24380 Geological and geographic sula connecting region with Sc [NIC-TRANS-2560] Nutritional value of algae and soybean protein diet for suts 04 p0453 N68-13187 Nike Apache pitot tube rocket sounding measuring of Southern Hemisphere stratosphere and mesosphere along west coast of South America [NASA-TN-D-4264] 14 p2286 N68-25617 SOYUZ SPACECRAFT Commonaut selection and training for space flight 24 p4207 N68-38010 Balloon and aircraft measurements of neutron flux during South American solar eclipse - November 12, 1966 SPACE BIOLOGY U EXOBIOLOGY PACE CAPSULES

NT MERCURY SPACECRAFT

NT SIGMA 7 SC-T-68-1516) 19 p3273 N68-31843

netric data, systems analyses, and quice capsule concepts - direct versus orbital entry for Mars (NASA-CR-46660) 19 m3366 N68-31832 Large radioisotope heat see for operation in space environ ture of 2000 deg F for 5 years [Al-AEC-12676] 20 p3532 N68-33205 Selection of capsule for 1973 lau lander mission (NASA-CR-66665-1) 21 hing of Mars soft 21 p3775 N68-34050 Mission and systems paras lander to define entry and la Mars probe in 1970 time per [NASA-CR-66665-2] 21 p3776 N68-34051 Parametric studies for 1973 Insaching, capsule environment effects [NASA-CR-66665-3] rs soft lander capsule for metric analysis, and Mars 21 p3776 N68-34052 Conceptual design | for 1973 launching [NASA-CR-46663-4] 21 p3776 N68-34053 Conceptual design 2 for 1973 launching [NASA-CR-66663-5] ie for Mars not lander 21 p3776 N68-34054 Conceptual design 3 for 1973 issaching [NASA-CR-66663-6] 21 p3776 N68-34055 Conceptual design 5 for 1973 launching [NASA-CR-66663-7] de for Mars soft lander 21 p3777 N68-34056 Summary of designs eferences for Mare las NASA-CR-66678-1] nstraints for Mars bard ad direct entry reference Mission objectives and conder to define out-of-orbit [NASA-CR-66678-2] 22 p3966 N68-35981 Mission lander maps for parametric data, entry eroshell, and parachule subsystem used in Mars hard [NASA-CR-66678-3] 22 p3967 N68-35982 ard lander and preentry for systems analyses 22 p3967 N68-35983 ubsystems - computer p NASA-CR-66678-41 Design and performa lander capsule point d constraints for capsules [NASA-CR-66678-5] racteristics of Mars h and criteria and miss 22 p3967 N68-35984 or capsules 3 and 4 in the Analytical design da Mars hard lander study [NASA-CR-66678-6] (NASA-CR-66678-6) 22 p3967 N68-35985 Engineering design of Mars hard lander capsules 5 and 6 and illustrations for increasing payload size (NASA-CR-66678-7) 22 p3967 N68-35986 n planning and desi Supporting data for mission planning and design criteria of Mars hard landing system [NASA-CR-66678-8] 22 p3968 N68-35987 PACE CHARGE field effects on particle move ment in magneto (CEA-R-3262) 03 p0403 N68-12661 Magnetic system cu cyclotron in study of sp surrent coils for strong focusing space charge influence on protor [JINR-P9-3448] 05 p0844 N68-14599 on beam space charges on of incloses O6 p0890 N68-15727 during electromagn [FTD-MT-66-148] Power dissipated or generated by excited in CEA-R-3288) 06 p0892 N68-16098 Passive compensation of le effects in circular accelerators cal inserts [CERN-68-1] longitudinal quace charge rs - feasibility of using heli-Flammability and flame propagation test data on on composite materials for space capsules [NASA-CR-65809] 01 p0081 N68-10306 10 p1563 N68-19677 troutatic space charge waves propagating in his immersed in constant and uniform magnet Algorithm for computer processing of biodynamic otion indices during prolonged human stay in space NASA-CR-938181 10 p1574 N66-20176 04 p0461 N68-13197 e crystals for space charge Growth of boron plu Effect of radioisotope thermal generators in flight capsule on Voyager spacecraft configuration [NASA-CR-93563] 09 p1433 N68-19099 [AD-665820] ---11 p1643 N68-20588 Thermal noise in space charge limited current flow in slid state devices Heavy ion plasma accelerator for highly stripped lies 12 p1824 N68-22523

AVCO-EVERETT RES. REPT.-2881 11 p1679 N68-21014

[AFCRL-68-0045]

sizing radiation effects on oxidation conditions pettering on radiation produced space charge and

[NAS

Hu

The

(NAS

[NAS/

Space ble elec [NASA

Proposition space plasma NASA

Physi mosphe (JPRS-4

INASA-

and com

Space

Gas p

ONERA

Launch

Thickness thermal rade and inorgan (NASA-TM

[NASA-]

SUBJ

Electron drift mobility and space charge limited cur-rents in single crystal lithium doped zinc oxide 12 p1955 N68-22296 Electric fields in two dimensional model of synchro-cyclotron accelerating gap in presence of spatial charge 12 p1940 N68-22871 ical theory of klystron waves 13 p2127 N68-23809 (RADC-TR-68-137) Magnetic field and voltage charge oscillations in cylindrica [WRE-CPD-140] dependences of space 13 p2127 N68-23813 Annual variation of space charges and electric potential of atmosphere [T-R-569] 13 p2064 N68-24181 rensation of ion beam d in rerefled ear Plasma instability and cor space charge by electrons for [IAE-1277] d in rarefled gas 14 p2321 N68-24381 Space charge electric field effects on synchrotron of betatron frequencies and marticle learners [PPAD-637-D] 14 p2314 N68-25159 eory for crossed field 15 p2439 N68-25996 Noise transport of crossed field space charge flow in extren guns 15 p2452 N68-26182 Landaus electrostatic space charge waves in inctrop-ic hot electron plasmas 16 p2735 N68-27322 Space charges and particle b ims and motion 16 p2730 N68-28102 Space charge effects on be and minimization of its value [PPAD-636-D] 16 p2731 N68-28173 Microwave aimplification Gunn effect in GaAs oscilla [NASA-CR-95728] n in high resistivity GaAs and 17 p2960 N68-29505 (AFCRL-68-0149) 18 p3143 N68-30116 ematical expression for approximating space spreading of ion beam in uniform accelerating charge aprea electric field [GEPP-28] 19 p3326 N68-31159 Current voltage characteristics of space charge current in gas diodes 21 p3671 N68-33700 Mathematical models and experimental precipitation rates for charged particles in laminar flow 21 p3679 N68-33868 Feedback model on shot noise phenomena in space charge limited crossed field electron guns 21 p3667 N68-33987 mmary information on stud ient space charge limited cu ties of steady state and arrest problems 22 p3949 N68-35017 Space charge escilla anode magnetron [WRE-TN-CPD-140] in smooth cylindrical 23 p4032 N68-37106 Experimental study of space charge effect on elec-on motion in magnetic mirror trap with external in-24 p4324 N68-37912 d charge interaction in crossed fields (BCOM-0227-4) 24 p4334 N68-38259 SPACE COMMUNICATION
NT INTERPLANETARY COMMUNICATION
NT LUNAR COMMUNICATION
NT REENTRY COMMUNICATION
NT SPACECRAFT COMMUNICATION 01 p0134 N68-10164 Optical design conce ground station requirems cal technology Apollo ext [NASA-CR-90530] ept, optical communications, sents, and applications of opti-02 p0241 N68-11864 Data handling system for 8 bit biorthogonal telemo-r coded pulse code modulation with efficient (NASA-TM-X-63043) 03 p0323 N68-12543 (ESD-TR-67-182) 04 p0476 N68-13209

04 p0477 N68-13212

Digital computer control for satellite cospes terminal 04 p0477 N68-13213 ech processor for satellite 04 p0477 N68-13215 systems and dat [JPRS-44462] 07 p0962 N68-16350 Radio frequency aerospace communic [NASA-CR-92672] 07 p0962 N68-16460 Harmonic filter, electron gun, performance tests, and design of traveling wave tube amplifier for space [NASA-CR-93192] 08 p1153 N68-17620 ch in solid state physics, Summary reports on research in solid state physics, radio physics, data systems, and communications [DOR-533] 08 pl 150 N68-18078 and circularly polarized airborne 09 p1301 N68-18344 Parallel system and ons, input-output acl oint to point communica-and organizational opera-09 p1308 N68-18536 Digital techniq [CM-R46-10.5] 10 p1502 N68-20419 laser for applications technology satellites (NASA-TM-X-63233) 15 p2477 N68-25773 ations 16 p2625 N68-27929 communication systems for deep at of aid spacecraft can provide 17 p2849 N68-28794 ds of optical radar, space application, and space Laser applications in the i 17 p2897 N68-28949 eans for high data rate are probes, and deep 17 p2855 N68-29521 formance of deep space and tracking and naviga-17 p2855 N68-29522 Electronic computer y timum design of space co [NASA-CR-86081] ram user manual for opcation system 18 p3035 N68-30039 19 p3243 N68-31762 onsiderations and feasibility of optical space tions and tracking 19 p3243 N68-31766 grams and plans for optical communications in ed deep space missions and laser radar for Lunar sion Module 19 p3288 N68-31769 Microwave deep space communications and tracking approvement potential for lunar and planetary explora-20 p3438 N68-33180 Carbon dioxide laser devel-22 p3886 N68-35175 [NASA-TN-D-4794] 22 p3960 N68-35492 FTD-HT-67-2871 Self-synchronizing, gonal coded pulse code for communicating with [NASA-TR-R-292] 23 p4018 N68-36333 eristics of 100 watt, 50 ng wave tube for space Design and operating ercent efficient, S-band [NASA-CR-97222] 23 p4031 N68-36587 23 p4024 N68-37417 techniques, microwave thermal frequency breakdown in coaxial f coaxial cavity radiator develop-23 p4024 N68-37418

21 p3744 N68-34586 SPACE DENSITY ility and density in metal crystals 01 p0076 N68-10598 [CALT-473-21] cyclotron ion sources 14 p2310 N68-25013 15 p2494 N68-26544 drogen gas corre-16 p2757 N68-27320 Evaluation of space detection and tracking systems for European space programs 17 p2911 N68-28659 Evaluation of errors in space detection and tracking systems for European space programs 19 p3306 N68-31222 PACE ELECTRIC ROCKET TESTS 15-cm diameter, hollow-cathode Kaufman thrustor for SERT 2 mission [NASA-TM-X-52376] 04 p0363 N68-12849 04 p0563 N68-12849 Mercury electron-bo SERT 2 spacecraft and so [NASA-TM-X-52423] ent thrusters, and lar cell array 11 p1777 N68-21233 Techniques used to prevent high voltage breakdown in ion engine used on NASA SERT-I flight
15 p2446 N68-26903 PACE ENVIRONMENT
U AEROSPACE ENVIRONMENTS PACE ENVIRONMENT SIMULATION NT WEIGHTLESSNESS SIMULATION Space activity suit designed for active astronaut working in vacuum environments for up to four hours (NASA-CR-973) 02 p0171 N66-11510 Prototype space flight experiment package for study of circadian periodicity in pocket mice [NASA-CR-91062] 03 p0306 N68-12342 ainability criteria develop-Integrated space m [AFAPL-TR-67-93] 03 p0368 N68-12534 on of solar wind with Similarity laws for magnetosphere to produce space simulation [ESRO-SN-16] 05 p0724 N68-14032 Feasibility of simulation of Martian atmospheric processes - atmospheric transportation and deposition of dust and sand, absorption properties, and thermodynamic propertie [NASA-CR-61188] 05 p0738 N68-14583 at evaluation of direct current motor materials [NASA-TM-X-53675] 06 p0815 N68-15529 adgments of perceived vehicle under conditions simulating outer spa [NASA-CR-73172] 06 p0778 N68-15785 Disassembly and component examination of SNAP 10A FS-3 following 10,000 hr test operation in space [NAA-SR-12504] 07 p1023 N68-16144 two vacuum chambers or solar-cell research 07 p0982 N68-16695 sign and perfe NASA-TM-X-15031 proton, and ultravio [NASA-CR-73160] 07 p1099 N68-16904 Gemini extravehiculi [NASA-CR-65935] 07 p0951 N68-17162 g of nonflammable space suit 08 p1134 N68-17380 [NASA-TM-X-60897] Equations and logic for d of environmental pressure [NASA-CR-61582] 08 p1238 N68-17589 Numerical simulation of lation and climate on Mars [NASA-CR-93196] eral atmospheric circu-08 p1239 N68-17791 en dried balsa wood load carry-Vacuum effects on or 08 p1191 N68-17910

n telemetry system - bit-sync lock de-23 p4024 N68-37419

SPACE DEBRIS

Measuring photonium 238 radioactive space debris particle density resulting from SNAP 9A satellite billions

SPACE DETECTION AND TRACKING SYSTEM

Error analysis technique using black ball as calibrat-ing device in space chambers (ESRO-TM-102/ESTEC/)

09 p1448 N68-18465 of modified space en-aft testing Design, and instrumer vironment simulator for s [NASA-CR-93689] 10 p1511 N68-19511 man perform ng distances in simu-

lated space environs (NASA-CR-73206) 10 p1473 N68-19593

cal systems in simulated metric scaling laws 10 p1611 N68-19627 Thermal modeling of coace environment based od used for distance

ccessive comp space environment 10 p1474 N68-19705 (NASA-CR-73205)

s on dry lubricated ball oscillation in vacuum 10 p1533 N68-19731 Operation tional perfo bearings under simulai [NASA-TM-X-53707] ssion sickness in man

Measures to avoid d ring space flight simu 10 p1471 N68-20552

irements during pro-Nutrition and san nged space flight er 10 p1473 N68-20567

Accuracy of verbal de simulated space envir on distance perception 11 p1641 N68-21615

experiments on possild replica gratings 11 p1748 N68-21648 ble electron impact ([NASA-CR-94081]

Proposals for envir odification experiments s of field, particle, and plasma processes in a [NASA-CR-94330] 12 p1867 N68-22402

ilots in rarefled atmosphere simula [JPRS-45211] 12 p1825 N68-22556

Biochemical, phys simulated Apollo mis [NASA-CR-94588] nd metabolic effects of sace diet on humans 13 p2001 N68-23716 d infrared source detection Technique for short-live [ESRO-TM-110/ESTEC/]

13 p2172 N68-24130

mulated spaceflight traini bular apparatus of astronau ng, and conditioning 14 p2204 N68-24634

ace environ ation facilities for satellites 14 p2235 N68-24780 [RAE-TR-67152]

Space environmenta metallic materials (NASA-TM-X-59743) 14 p2278 N68-25294

Gas pumping by cold walls for space simulatio

(ONERA-NT-124) 14 p2243 N68-25301 dom vibration resp ysical observatory -acoustic, and vibration se data for orbiting emparative analysis of

14 p2363 N68-25501 m vibration test level control using input and

14 p2363 N68-25502

Launch phase simulator /spacecraft test facility/ 14 p2238 N68-25512

Short duration shock tunnel simulation of rodynamic noise environment of booster rocket unch vehicle during transonic portion of launch 14 p2183 N68-25514

assurement and analysis of Mariner type craft separation transient response 14 p2364 NoS-25326

Susceptibility of Apollo service module to mechanical shock transmitted from pyrotechnic separation line echnic separation line 14 n2365 N68-25527

Magnetic shield simulator structor as shield for small volum dy of quasi-hoflow con-e toroidal vehicle 15 p2551 N68-26136

surements of electrical discharges caused by , glow discharges, and voltage breakdown under ions encountered in aerospace vehicles operathin high altitudes

15 p2445 N68-26895 Thickness and space environmental radiation properties of and inorganic coatings for space [NASA-TM-X-59389] environment simulation on es of high emittance ceramic

16 p2793 N68-27441 lites - space environ-(LRBA-28-64-EN) 17 #2976 N68-28618 Thin film cudmium sulfide solar cell models, and or-bital and balloon flight test data compared with labora-tory assess environment simulation results. 17 p2814 N68-28742

tion facilities for testing and test data application 17 p2814 N68-28745

State-of-the-art survey of low pressure and thermal diation environment space simulation test chambers 17 p2868 N68-29000

ar flux and equive ire in space en-

17 p2868 N68-29001 ance of solar a bers for satellite n in space sim

parameters 17 p2868 N68-29004 Analytical method for fin lated OGO experiment pack data and without solar simula [NASA-TN-D-4644] heat balance of insu from thermal stabilit

17 p2870 N68-29478 Visual perception in ted space environment

[AFOSR-68-1212] 18 p3015 N68-30611 n tests of cadmium sulfide thin film solar cells (NASA-TM-X-52436)

19 p3202 N68-31095 elop methods of manu and intravehicular wo

INASA-TM-X-61160] 20 p3413 N68-33452 Design, fabrication, vironment simulation fa [NASA-TM-X-60461] of space magnetic en-spacecraft testing 21 p3676 N68-33735

Experimental space puman behavioral and sace flight simulation erology for studying

21 p3634 N68-33922 slated lunar rock d in vacuum and ther-

(NASA-CR-922511 21 p3767 N68-34180 ulation of para

[NASA-TM-X-612171 21 p3774 N68-34769 Dynamic model for low fracture mechanics of m re ductility effect and sum during space en-

[TR-0158/3250-20/-7] 23 p4075 N68-36529

nd methods for training ation self-locomotion 23 p4002 N68-36545 astronauts in lunar and [NASA-TM-X-60686] iation on mechanical rubbers Effects of simulated

properties of synth [RAE-TR-68042] al rubbers 23 p4085 N68-37114 Biophysical evaluation in closed [NASA-CR-97363] s during space flight rt system 24 p4203 N68-37876

SPACE ENVIRONMENTAL LUBRICATION
U SPACECRAFT LUBRICATION

SPACE ERECTABLE STRUCTURES
NT BEACON EXPLORER A
NT BEACON SATELLITES

EXPLORER 22 SATELLITE INFLATABLE SPACECRAFT

Large space parabolic expandable truss antenna ex-NASA-CR-93837] 10 p1500 N68-20267 antenna experiment design for Apollo app [NASA-CR-93833] 10 p1500 N68-20304

Design evaluation crit ture concepts and flight of tions Program experimen [NASA-CR-90550]

17 p2982 N68-29536 Systems analyses of cepts for Apollo Apollos [NASA-CR-91559] gram 17 p2983 N68-29537

Apollo Applicationsed-H interferom y experiments and o ram space erectable ing wave radio astrono-of EVA in space main-

[NASA-CR-91560] 17 p2855 N68-29538 Focusing X ray tele esign and analysis as large ith man in extravehicular INASA-CR-915613 17 n2974 N68-29539

Apollo Applications Program m parabolic entenna ex-INASA-CR-905571 17 p2856 N68-29540 SPACE EXPLORATION

agineering and scientific work on Mariner 4, riner Venus, Mariner Mars 1969, Voyager, and Sur-Veyor projects 02 y0272 N68-11643

Review of Soviet de [NASA-TT-F-11454] 05 p0742 N68-14215 Roving vehicle mot tary and lunar explora [NASA-CR-92643] of for unmanned plane

06 p0915 N68-15246 Annotated biblic research [APCRL-67-0518] our and planetary

06 p0910 N68-15366 rendezvous, docking, ctual space exploration

06 p0778 N68-15733 INASA-CR-925931 on for lunar and Extraterrestrial reso space exploration and li [NASA-TM-X-60870] 08 p1235 N68-17330 of extraterre

Detection and exploita 08 p1236 N68-17332

ets for interp INASA-TM-X-523971 08 p1241 N68-18061 ray diffraction m design for lunar

[NASA-CR-93665] 09 p1427 N68-19361 Mission planning a interplanetary space ([NASA-CR-93680] ruft design criteria for

10 p1598 N68-19612

10 p1598 N68-19613

endations on lunar and ny, exobiology, NASA stellite developments eraity progra and biomedicine [NAS-NRC-1403] 10 p1595 N68-20376

ion priorities, and inter-Lunar and placetary exp anetary communication

10 p1595 N68-20377 concepts for un-

10 p1598 N68-20546 Formulation of law codes for manned space explora-

10 p1470 N68-20550 rical survey of Ru rocketry and space ex-

NASA-TT-F-4261 12 p1971 N68-22262 ibliography of books and teaching aids on space flight subj

14 p2344 N68-24637 ternational space prog [TUB-IR-5/1967] 15 p2579 N68-25695

nd and estin 15 p2564 N68-26004

one for fact ma Flight opti interplanetary spac [TUB-IR-4/1966] 15 p2562 N68-26840

nary eve rface sampling as in NASA-CR-956241 7 p2970 N68-28890 Conference proc

in space explorati (NASA-SP-152) 17 p2821 N68-29128

national relations and new treaty 19 p3368 N64-31479 Space flight effects of formulation of estraterre [NASA-TT-F-11881] strophysical instrum pace optical technological

19 p3280 N64-31773 e and courte

y exploration 20 p3528 N68-33182 nd data systems for

20 p3479 N68-33184 ct of space exp

NASA-CR-96812] 21 p3771 N68-34390 Planetary atmosphere field interactions with a dies for future planetary d dynamics, particle and wind, and exobiology stu-

22 p3958 N68-34928 law relating to ortificial n in outer space 24 p4357 N68-37766 hedies, space stations, an [NASA-CR-97320]

[NASA-CR-97317]

PAGE PLOOPED

SPACE FLOCHT

NT GEMINI FLIGHTS

NT GEMINI 4 FLIGHT

NT GEMINI 4 FLIGHT

NT HYPERBOLIC REENTRY

NT HYPERBOLIC REENTRY

NT INTERPLANETRY FLIGHT

NT INTERSTELLAR TRAVEL

NT LINER FLIGHT

LUNAR FLIGHT MANNED SPACE FLIGHT MERCURY MA- 8 FLIGHT MERCURY MA- 9 FLIGHT

NT NT NT

Legal aspects of satellite communications, liability and space activities, natural resources, and pollution aspects of space exploration (NASA-CR-97307) 24 p4357 NAS-37747

Scientific questions and experimental design for lanetary exploration of Jupiter, Mars, Mercury, and

NT RETURN TO EARTH SPACE FLIGHT NT SPACECRAFT REENTRY

NASA special publications on space flight data and space-related science and technologies

24 p4341 N68-37875

ologies 03 p0414 N68-12136

Priority model concept for flight operations planning manned spacecraft [MTR-256] 03 p0414 N68-12227 Space computer progr Naur form with descriptio [SDC-TM-3719/000/00] ramming language in Backus-on and applications 04 p0483 N68-13294 ncial, commercial, and technical aspects of sub-, arc-orbital, and jet-orbital transportation systems (DOUGLAS PAPER-4668) 05 p0605 N68-14574 Payload type and density effect on space flight systems performance (BMWF-FB-W-67-18) 06 p0916 N68-15519 Encapsulation of radio long period space flights [NASA-CR-91907] ctive source materials for 06 p0852 N68-16023 Acceleration effects on susceptibility of organisms to radiation during space flight [NASA-TT-F-11397] 07 p0942 N68-16163 Testing and responses system during space flights [NASA-TT-F-11395] es of human cardiovascular 07 p0946 N68-15644 Counic radiation and space flight factor effects on lysogenic bacteria and human cell cultures (FTD-HT-67-200) 07 p0946 N68-16895 Visual work capacity, ception during space flig [NASA-TT-F-1 | 404] al activity, and color per-07 p0950 N68-16911 Development of nuclear thermionic space power system using thermionic diodes, and heat pipe flow for temperature control [NASA-TN-D-4299] 09 p1378 N68-19146 History, spacecraft, and m rogram since 1957 sions of U.S.S.R. space NASA-TT-F-11500] 09 p1424 N68-19198 Dynamic flight data analysis for Mariner 5 space flight [NASA-CR-93911] 11 p1788 N68-20988 Selected and annotated bibliography of books, reference works, periodicals, and teaching aids on space flight subjects [NASA-EP-48] 14 p2344 N68-24637 Alertness and psychomotor responses in two mon-keys during flight 14 p2199 N68-24870 Summary information on technical activities of deep space network, space flight projects, communication systems, and deep space instrumentation facilities [NASA-CR-94802] 14 p2226 N68-25631 Complexities of orbital spacecraft rendervous and docking maneuvers [JPRS-45653] 15 p2559 N68-25975 Relative importance of German participation in global space travel programs
[TUB-IR-3/1966] 15 p2579 N68-26031 North Atlantic Treaty Organization Advisory Group for Aeronautical Research and Development con-ference on fluid dynamic aspects of space flight (AGARDOGRAPH-87, V. 2) 17 p2872 N68-28999 ory of NASA Goddard Space Flight Center through 1963 [NASA-SP-4301] 18 p3056 N68-30317 ammary data on Soviet manned space flight achievements (FTD-MT-66-139) 20 p3584 N68-32323 g after space tumbling 20 p3406 N68-32800 (SAM-TR-68-32) A-1164

Literature survey with abstracts on Soviet radiobiological investigations [ATD-68-105-108-9] 20 p3407 N68-33037 Adhesive repair system for application in weightless NASA-CR-980031 24 p4261 N68-37901 SPACE PLIGHT PEEDING Organoleptic acceptability of liquid and fresh diets for space flight feeding [NASA-CR-90379] 02 p0166 N68-11290 Onboard food production for prolonged manuspace flights [JPRS-43664] 03 p0308 N68-12194 Minimum protein and caloric requirements for pro-longed manned spaceflight and space stations [NASA-CR-91287] 04 p0457 N68-13776 Space station green ing plant productivity [JPRS-43943] e design concept for increas-05 p0608 N68-13920 Biological, medical, and engineering studies for unned space flight - acceleration stresses, human derances, space flight feeding, protein metabolism, d life support systems PBS_447431 and life suppor 09 p1280 N68-18906 Wet burning method to mineralize human waste products for Chlorella cultivation 09 n1282 N68-18918 Survey on food requirements for manned space [NASA FACTS NF-41/12-67] 12 p1823 N68-22045 Biochemical, physiological, simulated Apollo mission with [NASA-CR-94588] nd metabolic effects of pace diet on humans 13 p2001 N68-23716 Nutritional properties of Hydrogenomonas eutropha diets for manned space flight 15 p2393 N68-26214 Biochemical, physiological, and metabolic analysis of subjects in life support system on liquid food diets during space environ [NASA-CR-94860] 15 p2398 N68-26777 Forced feeding of dogs during 22-day Cosmos 110 iosatellite flight 17 p2818 N68-28503 Chemical feasibility and r of edible fatty acids and lip for space flight feeding [NASA-CR-1104] ical feasibility as d nutrional value in synthesis lipids from metabolic wastes 17 p2820 N68-28829 Cultivating plants for close ig long manned space flights ed ecological systems during long manne [JPRS-46306] 20 p3407 N68-33269 Biological and physicochem regenerative food supply of spa [NASA-TM-X-61201] ical reaction systems for ce flight crew 21 p3636 N68-34494 SPACE FLIGHT STRESS Medical experiments conducted tronauts from space flight stress

ted to protect Gemini 01 p0009 N68-10191 Physicological mechanic perimental data on humas effects during space flight [JPRS-43412] of acceleration, and ex-01 p0012 N68-10616 Macaca nemestrina pigtail monkey used for deter-mining space flight effects on physiological functions -Biosastellite project [NASA-TM-X-60822] 05 p0609 N68-14106 05 p0609 N68-14106 Morphological and physiolomans and lower animals induction, and other space environm ogical impairments in hu-ced by hypoxia, accelera-08 p1131 N68-17745 Dynamics of threshold and differential sensitivity of uman acoustic analyzers during prolonged space flight 08 p1132 N68-17757 Physical methods evaluated analyses under space flight cond [NASA-CR-93831] ted for use in biochemical 10 p1464 N68-20120 Soviet articles on aerospace medicine, exobiology, and radiobiology research to determine space flight [JPRS-45798] 17 p2817 N68-28499 Space flight stress effects on cardiovascular system of dogs after 22-day flight of Cosmos 110 biosatellite 17 p2817 N68-28501 Functional state of blood coagulation system in dogs after 22-day flight on Cosmos 110 biosatellite 17 p2818 N68-28504

Methods and techniques for determining psychocar iovascular reactions during conditions of weightless

20 p3408 N68-33333

niology and medicine - life ed space flight, human

ness in orbiting astellite [NASA-CR-96450]

U.S.S.R. studies in space bupport systems for manne

Spacecraft systems, launch vehicle configurations, mission profiles and life support systems of orbiting primate spacecraft [NASA-CR-66508] 05 p0612 N68-14889 05 p0612 N68-14889 ons, life support systems, at-nization of spacecraft design Spacecraft configuration tude control, and optime and instrumentation for or orbiting primate spacecran 05 p0743 N68-14890 Performance, design construction and operation test recedures for laboratory test model of orbiting pri-(NASA-CR-66510) 05 p0743 N68-14891 Orbiting primate spacecraft project planning and documentation on systems design and engineering, experiment design, tests programs, and manufacturing [NASA-CR-66511] 05 p0744 N68-14892 Biological experiments and effects on two primates to determine versatility of design of orbiting primate [NASA-CR-66512] 05 p0744 N68-14893 Reentry vehicle and experiment packages of Bio-satellite 2 spacecraft [NASA-TM-X-61080] 13 p2154 N68-23326 Annotated bibliography on space law 01 p0154 N68-10230 Historical analysis of space treaty development [NASA-TM-X-60833] 06 p0929 N68-15538 Formulation of law codes for man ned space explora-10 p1470 N68-20550 Space flight effects on intern formulation of extraterrestrial sp [NASA-TT-F-11881] rnational relations and pace treaty 19 p3388 N68-31479 Reduction to practice of spi [NASA-TM-X-60468] e inventions 21 p3797 N68-33768 National and inten w relating to artificial bodies, space station [NASA-CR-97320] sen in outer space 24 p4357 N68-37766

SUBJECT INDEX physiological and psychological stress tolerances, and exobiological experiments [JPRS-46456] 21 p3631 N68-33909 21 p3631 N68-33909 Amobarbital and pituitary hormones for sleep pro-longation of mice under space flight stress 21 p3632 N68-33911 Experimental determinations of visual fitness criteria and selection standards for space travel /static and dynamic stress situations/ 21 p3641 N68-34527 Electrophysiology of changes in work capacity of uman muscle after exposure to hypokinetic conditions [FTD-HT-23-36-68] 21 p3637 N68-34619 Proposed activities during off duty time in prolonged manned space missions [NASA-CR-96721] 21 p3645 N68-34674 nation summary on weightlessness in 71 U.S.S.R. informa space environment [FTD-MT-66-157] 24 p4209 N68-38453 SPACE FLIGHT TRAINING Broad assessment of physical training requirements for Soviet spacecraft crews based on individual special-(FTD-HT-66-427) 04 p0462 N68-13489 Conference papers on Soviet applications of ex-obiology, bioengineering, and space flight training research to clinical medicine 24 p4203 N68-38008 ut selection and training for space flight 24 p4207 N68-38010 SPACE GLIDERS
U LIFTING REENTRY VEHICLES SPACE GLOSSARIES NASA Thesaurus - A through L alphabetical listing of terms for indexing and retrieving aerospace related [NASA-SP-7030, V. 1] 02 p0292 N68-11307 NASA Thesaurus - M through Z alphabetical listing of terms for indexing and retrieving serospace related [NASA-SP-7030, V. 2] 02 p0292 N68-11308 rus for indexing scie dices to NASA Thesa Appendice ific and tech and technical information - category term listing, rehical display, permuted index, and postable [NASA-SP-7030, V. 3] 02 p0292 N68-11309 SPACE LABORATORIES
NT MANNED ORBITAL LABORATORIES
NT MANNED ORBITAL RESEARCH LABORA-

Apo Cros my exp NAS/ Miss flyby m Char duratio PACE N AS CEI KEI MI

SUB

SPAC

Prorbit [NA

SPACE

A

AF

LM

[NAS

ment [AFA

long o

Exp

[NAS

INAS.

[NAS

in-spar sions

Net

Prin

Spi

Lu

U OR SPACE M Appli tic mi NASA-Abstra JPRS-4 Prelau NASA I

rocket p AGARI sources, i

Mission RF-86-0 Gemini

Confere

and comp

Jurisdiction over acts in outer space, domestic use of immunication satellites, UN and other international pencies in controlling space, and bibliography on space laws INASA-CR-973231 24 p4357 N68-37768

SPACE LOGISTICS

Maximum transport capacity analyzed and estimated or one-way systems to Moon and Mars

15 p2564 N68-26004

Performance and vehicle design concepts for earth orbital logistics spacecraft [NASA-TM-X-61216] 21 p3780 N68-34393 SPACE MAINTENANCE

Astronaut boom attachment system for maintenance tasks in space
[AFAPL-TR-67-14] 01 p0016 N68-10548 Lunar gravity effect on astronaut performance and maintenance task [LMSC-6-77-96-0] 02 p0172 N68-11657

Space tool configurations for extravehicular main 03 p0308 N68-11948 [NASA-CR-91052]

Integrated space m ment technique [AFAPL-TR-67-93] bility criteria develop-03 p0368 N68-12534

Maintenance task analyses and expendables data on long duration, manned spacecraft flights [NASA-CR-73152] 07 p1085 N68-16403

Experiment designs for collecting human factors en-ineering data on advanced space systems maintenance 09 p1290 N68-19296 [NASA-CR-61650]

Neutral buoyancy si tions encountered in ap [NASA-CR-61649] on of zero gravity condi-intenance and repair 09 p1291 N68-19493

Principal design features of extravehicular work plat-[NASA-CR-94927] 15 p2563 N68-25874

Requirements and role of extravehicular activity /EVA/ in deployment, assembly, and maintenance of in-space erectable structures during earth orbital mis-

16 p2773 N68-27934

Apollo Applications Program space erectable crossed-H interferometer for long wave radio astrono-my experiments and evaluation of EVA in space maincro

INASA-CR-915601 17 p2855 N68-29538

ission requirements, maintenance and repair con-nts, and crew capabilites for 690-day planetary [NASA-CR-73236] 19 p3371 N68-32160

Characteristics, con duration space mission ware and maintenance [NASA-CR-73239] constraints, and implications of long ions based on use of available hard-ice/repair actions in space 19 p3218 N68-32163

SPACE MECHANICS

ASTRODYNAMICS
CELESTIAL MECHANICS
KEPLER LAWS
MINIMUM VARIANCE ORBIT DETERMINA-

U ORBITAL MECHANICS

SPACE MISSIONS

10

Application of inertial navigation principles to bal-listic missile guidance, aircraft and ship detection, and space mission control [NASA-TT-F-10667] 01 p0088 N68-10048

Abstracts and news items on Soviet bloc research in geophysics, astronomy, and space [JPRS-43359] 01 p0058 N68-10605

Prelaunch news release on Pioneer C spacecraft mission objectives and specifications [NASA NEWS RELEASE-67-293] 02 p0270 N68-11048

Lecture series on nuclear, ocket propulsion systems and thermal, and electric space mission applica-

[AGARDOGRAPH-101] 03 p0370 N68-12184

Electric propulsion systems surces, flight mechanics, and m and spacecraft power 03 p0410 N68-12193

Mission profiles, and trajectory criteria for asteroid (RF-86-O) 05 p0735 N68-14137

RF-86-O]
Gemini extravehicular activity mission summary
05 p0616 N68-14951 Propulsion, and instrum ter spacecraft sounding m on for proposed Ju-

06 p0915 N68-15202 Conference papers from spaceborne multiprocessing and computer aids [NASA-CR-91825] 06 HORDS NAS-15437

al requirements of spa d manned missions

06 p0808 N68-15439

and automatic reconfigu-ter systems featuring muln for spaceborne or cemors and micron ned circuits 06 p0808 N68-15442

Surveyor 4 lunar probe escription and performance [NASA-CR-92707] 07 p1085 N68-16262 Core sequential decoding program for advanced

INASA-CR-731751 07 p0968 N68-16375 orseback analysis of con-lations in sequential cod-l solar missions 07 p0968 N68-16388 Random tree code revi catenation schemes, and ing system design for adva [NASA-CR-73176]

Extraterrestrial resources in life support systems for stended space missions

08 p1134 N68-17366 Data processing systems, thermal subsystems, design, and mission performance summary for Surveyor 1 spacecraft (NASA-CR-93493)

09 p1429 N68-18654 sions by orbital ele-Classifying Cosmos satellites miss

10 p1599 N68-19652 Mission constraints and trajectory interfaces for launch, rendezvous, spatial, deorbit, and entry phases of earth orbital mission [NASA-CR-1015] 10 p1597 N68-20468

nstraints, cost estimates, as flyby/entry probe mis-Systems engineering and ad program schedule for V [NASA-CR-94234] 12 p1964 N68-21888

SNAP developme at for electric power sources in SC-DC-67-21191 12 p1911 N68-22898 Gravity assist opt technique for variety of

space missions (NASA-TM-X-63179) 12 p1969 N68-22922 Launch window analysis for round trip Mars missions

13 p2149 N68-23360 INASA-TM-X-610871 Performance analysis for Lunar Orbiter 5 mission [NASA-CR-66608] 14 p2351 N68-24923

Parametric analysis and syst omachinery performance in yele space power plants d system optimization of tur-e in reactor heated Brayton cycle space power pr [NASA-CR-89172] 15 p2505 N68-26838

German space mission places, and project combina ing, program effective-ELDO program [TUB-IR-5/1966]

15 p2565 N68-26950 ng mission mode com-Mars excursion module ta

NASA-TM-X-16291 18 p3164 N68-29988 oulated data on worldwide unmanned and ed spacecraft launchings for period 1957-1967 19 p3372 N68-30903

Tracking and data acquisiti Mars 1964 mission - cruise to po [NASA-CR-95989] tion report for Mariner 19 p3240 N68-31419

Parametric data, systems analyses, and space capsule esign concepts - direct versus orbital entry for Mars

[NASA-CR-66660] 19 p3366 N68-31832 Titan 3 launch sechanics analyses ele performance and flight rect versus orbital entry for Mars missions [NASA-CR-66661]

19 p3367 N68-31833 Entry and terminal phase performance analyses of configurations for direct versus orbital entry for Mars

[NASA-CR-66662] 19 p3367 N68-31834 Aeroheating and aerosh and ablative heat shield de orbital entry for Mars missic [NASA-CR-66663] Il configuration analyses, on criteria - direct versus

19 p3367 N68-31835 metric data on configu-ntry for Mars missions 19 p3367 N68-31836 Subsystems analyterations for direct ver [NASA-CR-66664]

ced technology prod space missions 20 p3590 N68-33172

on Surveyor 7 mission 20 p3599 N68-33553 Principal scient [NASA-SP-173] mary on mi es for auxiliary electric propul-

NASA-CR-96633] 21 p3758 N68-34023 Technology requirements and spacecraft design stu-dies for atmosphere braking to orbit about Mart and

NASA-CR-11311 21 n3766 N68-34086 thermionic reactor system [NASA-CR-96782] pace applications 21 p3728 N68-34737

ns of an ELDO-A/PS launch vehicle equipped with p [NT/DTA/GI-III/67/NO.115]

21 p3780 N68-34765 Handbook of techn teristics and performan (NASA-CR-97200) a on operating charac-ariner 5 23 p4176 N68-36560

Mission support, advanced engineering, operation of systems analysis, and technical facilities program related to Deep Space [NASA-CR-97346] 24 p4224 N68-37714

SPACE NAVIGATION
NT INTERPLANETARY NAVIGATION

Space navigation, tracking, and telecommunication engineering for deep space instrumentation network [NASA-CR-90199] 02 p0179 N68-11006

Factors affecting design and use of photographic sex-(NASA-TN-D-4285) 02 p0236 N68-11902

Markov chain proc NASA-CR-91041) 03 p0358 N68-12011

Principles of earth-orbi igation 04 p0574 N68-13084 ing hand held sextant to ig flushing light and simu-

Navigator perform measure angle between lated star - space navi [NASA-TN-D-4174] 04 p0535 N68-13558 and orbital elements for any spacecraft 06 p0871 N68-15773

Space navigations earth antellites and in [NASA-CR-92568] Earth infrared horizon vigation, control, and ition for space guidance, ting systems - feasibility

[NASA-CR-66432] 08 p1200 N68-18056

of space navigation terplanery flight 09 p1372 N68-19046 NASA FACTS-NF-371

tion of boost and sp FNASA-CR-10011 10 p1590 N68-19676 Navigation and guidance a unched from manned flyby sp analysis of Mars probe [NASA-TN-D-4512] 11 p1738 N68-21754

variate regression anal-tion systems 12 p1902 N68-22175 Optimization theory for a yais of satellite and space na

Analysis of space st d inertial navigation

[NASA-CR-94735] 14 p2287 N68-24709 Space navigation usin [NASA-CR-82554] 16 p2702 N68-27803

Alternative types of communication systems for deep sace probes and extent of aid spacecraft can provide for deep space navigati [NASA-CR-95573] 17 p2849 N68-28794

Laser applications in the firemunications, industrial acking and navigation elds of optical radar, space application, and space racking and navigation NASA FACTS, V. 3, NO. 6)

17 p2897 N68-28949 Comparison of alternative m communication from deep space navigation by orbiting spa [NASA-CR-95571] means for high data rate space probes, and deep securaft 17 p2855 N68-29521

Systems analysis and performanication equipment, a rmance of deep space d tracking and naviga-mission 17 p2855 N68-29522 tion studies on Earth [NASA-CR-95572]

les in orbit and landing 20 g3584 N68-32377 FTD-MT-24-369-671

Telescope objective lens size, aperture size, and mag-fication effects on operator performance using 20 p3527 N68-33006 gnitude on sextant Effects of irradiat

NASA-TN-D-4780 20 p3529 N68-33456

Aerospace vehicle navig 24 p4291 N68-38017 SPACE ORIENTATION

Ability of man to orient himself and move about in reduced gravity of hunar environment [NASA-TM-X-57241] 09 p1289 N68-19011 09 p1289 N68-19011 ic space ori Human dynamic s of control theory INASA-CR-962901 20 m3411 N68-33241

Acoustic holography demospace point, wave front may illuminated by changing wave [DOUGLAS PAPER-5150]

S

f

[]

100

SPA

SPA

SPA

IN

SPAC

0

0

C

dock [JPR

Allinea

Vis

Mo [MD

Operadial

SPACE U SI

SPACE

NT I

Pum

INAS

Gerr sink, a technic

cally or

Option

NASA

Safet inside a [NASA

Tech

NASA-

Gravi

SPACE PERCEPTION 24 p4257 N68-38000 SPACE PERCEPTION NT AUTOKINESIS Three-dimensional contact analog display system development for use in surface, subsurface, air, and space vehicles [NASA-CR-89978] 01 p0016 N68-10535 Effect of observer distance and posture on size per-[FTD-HT-67-162] 02 p0171 N68-11423 caption and electrops; on and fusion in stereopsis 41 04 p0451 N68-12977 Binocular percepti dies of suppression as [SRRC-CR-67-36] Distance and size perception in human beings [NASA-CR-91702] . 05 p0613 N68-14166 Cue enhancement as function perception tests under simulated [AM-67-18] ns of task sets in depth sted flight conditions 06 p0777 N68-15196 Magnitude estimation judgments of perceived distance for stationary space vehicle under conditions simulating outer space [NASA-CR-73172] 06 p0778 N68-15785 Pilot performance in depth perception between familiar objects [AM-67-20] 07 p0951 N68-17066 Influence of otolith organs on visual horizontal per-(NASA-CR-93657) 09 p1284 N68-19295 Successive comparisons method used for distance discrimination tests in simulated space environment [NASA-CR-73205] 10 p1474 N68-19705 Design criteria for spatial disorientation flight simu-[SAM-TR-67-90] 11 p1639 N68-21017 Accuracy of verbal decisions in simulated space environment ns on distance perception 11 p1641 N68-21615 Astronaut training, vestibular apparatus conditioning, and circadian rhythm disruption during interplane-tary flights [JPRS-45478] 14 p2204 N68-24633 Temporal estimation in perception of occluded mo-15 p2537 N68-26167 Visual masking using different test stimulus patterns relationship between human visual perception latency and object luminance during high velocity flight 21 p 3642 N68-34531 Position judgment accuracies of three perceiver groups of stationary targets of Ames trapezoid illusion 22 p3815 N68-35053 SPACE PROTOGRAPHY SPACEBORNE PHOTOGRAPHY SPACE POWER UNIT REACTORS

NT SNAP 2 NT SNAP 8 NT SNAP 10A

Pneumatic actuator servo loop system and fluidic devices for SPR-6 reactor control [UCID-15204] 03 p0380 N68-12705 Impact tests on thermoelectric hardware for space

96 p0771 N68-16071 Evaluation of nuclear reactor, and radioisotope space power systems for large booster rockets [Al-MEMO-7385] 07 p1034 N68-17191

Design, fabrication, and testing of Large Radioisotope Heat Source Capsule /LRHSC/ for space environment operation [NAA-SR-12578] 08 p1202 N68-17292

Size and shield weight requirements calculated for fast-spectrum, liquid-metal cooled nuclear reactor for space power application [NASA-TN-D-4315] 08 p1207 N68-18197

Gas pressure effects on cavitation resistance of struc-tural materials in liquid metal space power systems [NASA-TM-X-52414] 10 p1538 N68-19745

Point kernel shiekling code for parametric surveys on space power reactor shielding designs [UCID-13284] 14 p2290 N68-24590 Cross section uncertainties in compact space power

[UCRL-70797] 14 p2292 N68-25044

Analysis and selection of design for plutonium 238 for Brayton cycle space powerplant [NASA-TN-D-4600] 15 p2389 N68-25829 Thermionic space power reactor design critical ex-

15 p2502 N68-26455

Nuclear reactor space power using out of pile ther-mionic diodes and heat pipes cooling with control rods [NASA-TM-X-52446] 16 p2702 N68-27003

Design studies of condensers and radiators for cesi-um and potassium vapor cycle space power plants [NASA-CR-93671] 17 p2915 N68-28928

Verification experiments for prediction of per-rmance and operating characteristics of nuclear 17 p2815 N68-29062

Principles, characteristics, and technology develop-nent status of conversion systems for converting reac-per heat into space electric power NASA-TM-X-52472] 18 p3113 N68-29921 tor heat into space elect [NASA-TM-X-52472]

Minimum radiation shield weight for nuclear reactor used as electrical source aboard spacecraft [NASA-TT-F-11651] [8 p3114 N68-29922

Characteristics of liquid metal cooled reactor gase-ous fission products vented or contained, for space power systems [NASA-TM-X-1631]

18 p3117 N68-30516 Inductor alternators for space nuclear electric power

[SAN-679-6] 18 p3007 N68-30704 Neutronic calculations of fuel and poison drum con-trol of refractory metal, fast spectrum space power

[NASA-TN-D-4709] 18 p3120 N68-30750 Development and testing of alternator assembly, ump motor, boiler, condenser, and electrical control pump motor, boiler, condenser, and electrical control for SNAP 8 space power system [NASA-CR-72103] 22 p3910 N68-35068

Reactor materials studies, operation of W-Re-Mo capsule containing circulating Li, and space power reactor 4 reference design [UCRL-30004-68-1, PT. 1]

24 p4298 N68-38328

SPACE PROBES

NT EXPLORER IS SATELLITE

NT LUNAR PROBES

NT LUNIK 9 LUNAR PROBES

NT LUNIK 9 LUNAR PROBES

NT LUNIK 9 LUNAR PROBE

NT MARINER SPACE PROBES

NT MARINER SPACE PROBE

NT MARINER SPACE PROBE

NT MARINER 2 SPACE PROBE

NT MARINER 4 SPACE PROBE

NT MARINER C SPACE PROBE

NT MARINER C SPACE PROBE

NT MARINER SPACE PROBE

NT PIONEER SPACE PROBE

NT RANGER LUNAR PROBES

NT SURVEYOR LUNAR PROBES

NT SURVEYOR LUNAR PROBE

NT VENUS PROBES

NT VENUS PROBES

VENUS PROBES ZOND 5 SPACE PROBE

State of the art surveys of electro-optical sensors and rapdown inertial guidance system instruments and ensor assemblies for space probe applications strapdown inertial guidance system instruments and sensor assemblies for space probe applications [NASA-CR-86013] 03 p0368 N68-12383

Payload considerations for interplanetary probe-easuring solar corpuscular radiation, magnetic fields, and meteoroids at perihelion

06 p0915 N68-15024 Design, and operation aspects of space probe flight mission to Jupiter [BMWF-FB-W-67-20] 06 p0909 N68-15268

Design criteria and calibration techniques for low frequency radio astrono [NASA-TM-X-63129]

my space probes 09 p1304 N68-19081 Dual mode hydrazine for attitude control and maneuvering propul [NASA-CR-93663] op p1415 N68-19360

Prelaunch press kit on souther probe (SAAP) for evaluating radiation environment (NASA NEWS RELEASE-68-97K) 14 p2350 N68-24722

Alternative types of communication systems for deep space probes and extent of aid spacecraft can provide for deep space navigation
[NASA-CR-95373]

17 p2849 N68-28794

Comparison of alternative communication from deep space navigation by orbiting [NASA-CR-95571] ative means for high data rate leep space probes, and deep tine spacecraft 17 p2855 N68-29521

nt in D-region of ionosphere ion density mean with rocket probes [ESRO-SN-89] 18 p3168 N68-29654

Development of high pres probe vehicles [NASA-CR-96285] re squibs for deep space 20 p3402 N68-32603

ESRO sounding rocket experiments for auroral parti-cle and solar and stellar radiation measurements 21 p3765 N68-34062

Space probe data on gr plasma sheet [NASA-TM-X-63330] etic tail and imbedded 21 p3762 N68-34633 Earth-moon trajectory of Zond-5 space probe [NASA-CR-97016] 22 p3965 N68-35600

Upper atmosphere wind profiles from gun launched vertical probes - 15-16 Feb. 1967 [REPT.-9] 23 p4092 N68-36151 Upper atmosphere wind profiles from gun launched vertical probes - 19-20 Sep. 1966
[REPT.-8] 23 p4092 N68-36153

Theoretical and experimental valves of meteoroid flux density and micrometeoroid distribution in relation to Jupiter probe shielding

23 p4178 N68-37246 ectron space probes of energy spectra in earth tion belts

24 p4338 N68-37456

SPACE PROGRAMS

NT APOLLO PROJECT

NT LUNAR PROGRAMS

NT RADIO ATTENUATION MEASUREMENT
PROJECT NT SURVEYOR PROJECT

Space optics experimental studies for development of optical technology Apollo extension system [NASA-CR-90297] 02 p0266 N68-11345

Space programs supporting research and development in systems, guidance and control, engineering mechanics, propulsion, and telecommunications [NASA-CR-91047] 03 p0414 Ne8-12306

Presidential report to Congress on aeronautics and 06 p0928 N68-15088

Conference papers on Swiss national space program including scientific satellite applications
06 p0929 N68-15226

Proceedings of AGARD meeting of September 1967 [AGARD-67/3] 06 p0929 N68-15349

Space develops ent and space-related technology in Japan [NASA-TT-F-11531] 06 p0912 N68-15722

Economic, and cost effectiveness analyses for space system studies [TR-1001/2515-01/-2] 06 p0930 N68-15843

rison of spacecraft resources 07 p1081 N68-16809

Impact of space program on Huntaville, Alabama [NASA-CR-93066] 07 p1103 N68-17161

Public planning for national space program in peacetime economy following cessation of Vietnam [NASA-CR-93356] 08 p1263 N68-18120

Research in geophysics, astronomy, and space in U.S.S.R. and Soviet-bloc nations [JPkS-44734] 09 p1335 N68-19167

Appropriations for NASA research and development, facilities construction, and administrative operations for facal year 1969
[REPT.-1181]

09 p1333 N68-19167

09 p1335 N68-19167

Soviet-bloc research abstracts on space programs, upper atmosphere, meteoroids, and cosmic rays 10 p1526 N68-20534

Summary review of Soviet space program
[PB-177192T] 12 p1967 N68-22343 Space research and related activities in United States, and data exchange and international programs at NASA - bibliography of 1966 publications and conference proceedings

13 p2151 N68-23770

Soviet-bloc research in geophysics, astronomy, and space - news and abstracts [JPRS-45446] 14 p2245 N68-24530

Electron concentration, comic radiation, magnetic disturbances, satellite motion, and other upper at-mosphere and space research efforts reported in Soviet-Bot literature 14 p2246 N68-24535

Space program research projects on systems analysis and engineering, telecommunications, guidance and control, propelsion, and data systems [NASA-CR-94676] 14 p2349 N68-25601

Political and economic in ternational space programs [TUB-IR-5/[967] tives for cooperative in-15 p2579 N68-25695

Experimental and theoretical studies on sporadic E layer, and summary information on other French space 17 p2966 N68-28461

French five year sp ranches and budgeting development program 17 p2989 N68-28706

CNES annual review of sate llite and sounding rocket ons, and budgeting of 17 p2968 N68-28712

Economic model for space research activities in Ger-20 p3614 N68-32721 [TUB-IR-4/1968] Major impacts of manned space missions and related technology on public health, medicine, and biological [NASA-CR-96811] 21 p3636 N68-34380 Economic impact of NASA research, production, and testing programs on southern communities [NASA-CR-96809] 21 p3797 N68-34387 New jobs created in industry and government as result of national space effort [NASA-CR-96808] 21 p3797 N68-34391 NASA-CR-96808] 21 p3797 N68-34391 Improvement of effectiveness and economics of stelline project by proposed optimization management [ESRO-TM-132/ESTEC/] 23 p4192 N68-36920 e technology transfer to developing nations using Brazil as mod [NASA-CR-1222] 23 p4192 N68-37216 Space Programs Sum advanced development [NASA-CR-97170] - supporting research and 23 p4042 N68-37397 SPACE RADIATION
U EXTRATERRESTRIAL RADIATION SPACE RADIATORS
U SPACECRAFT RADIATORS SPACE RATIONS Survey on food requirements for manned space [NASA FACTS NF-41/12-67] 12 p1823 N68-22045 Conversion of hu a, carbon dioxide water. and urea into food for space rations [NASA-TM-X-59839] 16 p2597 N68-27463 Food rations for astronauts on long duration space flights [JPRS-46002] 19 p3216 N68-31511 SPACE RENDEZVOUS NT ORBITAL RENDEZVOUS Operational rendezvous techniques demonstrated during Gemini project Onboard operations for Gemini rendezvous mission 05 p0741 N68-14944 05 p0740 N68-14942 Pursuit-evasion games and soluti ons to rendezvous 13 p2090 N68-23094 Complexities of orbital spacecraft rendezvous and docking maneuvers [JPRS-45653] 15 p2559 N68-25975 Algorithm for fixed-time fuel-optimal control of near state-constrained systems used in solution of sace rendezvous problem 0.12.0723 D1-82-07231 20 p3587 N68-32803 Visual rendezvous, rendezvous docking, and visual ocking simulators 21 p3641 N68-34529 Mobile aircraft-type launchers for space rendezvous [MDC-TR-67-98] 22 p3959 N68-35351 Optimal two dim dial constraints sional orbital rocket transfer with 24 p4340 N68-37567 SPACE RENDEZVOUS MANEUVERS U SPACECRAFT MANEUVERS PACE SCIENCES
U AFROSPACE SCIENCES SPACE SIMULATORS NT HIGH VACUUM ORBITAL SIMULATOR Pumping, vacuum, cryogenic, solar simulation, and supporting systems for space simulator facility [NASA-CR-91733] 05 p0641 No8-14105 Germanium resistance thermometer, lead wire heat nink, and high thermal conducting epoxy fastening techniques to measure wall temperature in cryogeni-cally cooled space simulators [NASA-TM-X-52386] 07 p1099 N68-17044 07 p1099 N68-17044 Optical, structural, and thermal design criteria and fabrication techniques for collimating mirror in space [NASA-CR-93792] 10 p1513 N68-20261 Safety instrumentation inside space simulation ch [NASA-CR-92056] n package for persons working 12 p1828 N68-22326 Techniques and hardware for simulating ionospheric NASA-TM-X-63226) 15 p2527 N68-25775

Gravity gradient momentum dumping analysis, and conceptual design for Apollo telescope mount simula-

15 p2562 N68-26740

[NASA-CR-61815]

3

N

1

10

57

42

16,

34

43

70

30

335

501

in

695

e E

461

ram

cket

712

Gas removal by physical adsorption and chemisorp-tion in space simulation test chamber 17 p2868 N68-29002 Digital and hybrid simulation of orbital and mentry [AMRL-TR-67-139] 22 p3963 N68-35944 Incidence angle and layer thickness effects on water and carbon dioxide cryodeposit reflection from space simulator walls [AEDC-TR-65-144] 24 p4242 N68-38174 SPACE STATIONS
NT ORBITAL SPACE STATIONS Material composition, weight, size, and unfole ctors entering into design of inflatable space sta [NASA-CR-92596] 06 p0919 N68-15239 FORTRAN 4 program for predicting uncontrolled dynamic response characteristics of spinning, cable-connected, two-body space station (NASA-TM-X-58018) 19 p3368 N68-31895 Mission planning and space station concepts for pollo Applications Program, and requirements for named interplanetary flights 20 p3589 N68-33170 Mathematical model for analyzing free vibration of rotating beam-connected space station [NASA-TN-D-4753] 20 p3604 N68-33225 Earth orbital program objectives for manned space stations and unmanned spacecraft [NASA-TM-X-61213] 21 p3771 N68-34323 System and component design analyses of gelled, space-storable propellants for spacecraft engines [NASA-CR-91808] 05 p0730 N68-14346 Self evacuating multilayer insulation panel systems for liquid hydrogen space tankage [NASA-CR-72363] 11 p1796 N68-21218 Static and dynamic behavior of space storable, cryogenic liquid rocket propellants in low gravity and transient situations [NASA-CR-92082] 12 p1959 N68-21975 Treatment of metallic surfaces for use with space storable propellants (NASA-CR-97062) 23 p4076 N68-36651 Mathematical analysis of rot of space stored liquid cryogens [RM-5693-PR] is of rotational destratification 24 p4355 N68-38144 SPACE SUITS High strength abrasive resistant flame resistant flexi-e impregnated nickel-chromium fabric for space suits 01 p0068 N68-10234 [NASA-CR-65801] Thermal conductance measurements of multilayer, luminumized polymeric films for space suit insulation [NASA-CR-65797] 01 p0150 N68-10401 Space activity suit designed for active astronaut working in vacuum environments for up to four hours [NASA-CR-973] 02 p0171 N68-11510 Apollo space suit temperature measurements during mulated extravehicular activities in space and on (NASA-CR-65856) 03 p0308 N68-12218 Journalistic account of space walk and life support FTD-HT-66-443) 04 p0574 N68-13229 ns from pressurized Gemini peruture microbiotank 04 p0462 N68-13436 Leakage of microorgi space suit into ambient t [NASA-CR-91468] Techniques for passive humidity in space suits for [NASA-CR-73168] trol of temperature and svehicular activity 03 p0613 N66-14195 Biological isolation garments for spacemen returning from lunar flights to prevent contamination from potential hunar microorganisms—evaluation sets (NASA-CR-92809) 07 p6948 N68-16237
Thermal and space environment simulation testing of Thermal and space environment simulation testing of Gemini extravehicular space suit [NASA-CR-65935] 07 p0951 N68-17162 Temperature data plots of Gemini Bravo active space [NASA-CR-65936] 07 p0951 N68-17171 Environmental testing of nonflamn materials [NASA-TM-X-60897] 08 p1 nable space suit 08 p1[34 N68-17380 Environmental and mobility constraints of manthropomorphic space suit configuration 09 p1287 N68-18729 Thermal insulation, and fire protecting properties of candidate space suit materials

09 p1288 N68-18752

Passive thermal control of rigid and flexible ex-(AMRL-TR-67-128) 13 p2005 N68-23412 ental problems affecting Physiological and environment of full pressure suits 14 p2205 N68-24882 Thermal emittance from quarter-mil aluminized apton space suit material and from sun and protective (NASA-CR-921331 14 p2207 N68-25365 Automatically controlled heat removal in water cooled space suits [NASA-CR-1085] 15 p2402 N68-26701 Pressure regulated thermal conductivity layer and eat sink conductive cooling unit for man wearing pres-16 p2602 N68-27046 of space suit face shield Emittance measuren and test chip [NASA-CR-92198] 18 p3013 N68-29984 Evaporative Cooling Garment System /ECQS/ for body cooling during extravehicular activity in space [NASA-CR-92332] 23 p4003 N68-36566 Evaporative Cooling Garment System /ECGS/ for body cooling during extravehicular activity in space-typical design verification test run [NASA-CR-92333] 23 p4003 N68-36567 ion test run 23 p4003 N68-36567 Thermal conductance mes thermal insulation candidates (NASA-CR-92329) surements on space suit 23 p4190 N68-37110 SPACE SURVEILLANCE [GROUND BASED] Ambiguity resolution for SPASUR radio inter-ferometer direction finding system [NRL-6603] 05 p0630 N68-14378 Technical feasibility and implementation for Satellite Prediction And Display /SPAD/ device [NRL-6694] 24 p4224 N68-37726 PACE SURVEILLANCE [SPACEBORNE] Space surveillance system for ocean observations [PB-177726] 19 p3274 N68-31894 SPACE SYSTEMS ENGINEERING U AEROSPACE ENGINEERING PACE-TIME CONTINUUM U RELATIVITY SPACE-TIME FUNCTIONS introduced for quantum scaler tal de Sitter space time 01 p0105 N68-10391 Fock representation in fields in two-dimensional [JINR-P2-3392] ace-time synthesis with discontinuous expa [KAPL-M-6711] 01 p0085 N68-10656 invariance properties of local emation groups involving arbitrary functions 01 p0112 N68-10666 Wind variability in time and space and role in pre-dicting impact point of unguided rocket or diffusivity of itmosphere. 04 p0501 N68-13590 Significance for solar system of time varying gravita-05 p0736 N68-14305 Converse to contraction mapping principle
11 p1722 N68-20629 Relativistic quantum field theory with local interac-(SU-1206-131) 12 p1916 N68-22392 Approximation model for synthesis of three dimensional space-time group diffusion problems
[WAPD-TM-736] 12 p1908 N68-22621 inelastic particle scatter-atomic excitation 15 p2515 N68-26008 Mathematical expression celerities of filtered turbu [AFOSR-68-0798] r space-time correlation elecity fluctuations 16 p2643 N68-27148 r space-time correlation elocity fluctuations 16 p2643 N6E-27150 Irreducibility of infinite rep gebra of rotation group R sub 3 [ITF-67-34] mations of Lie al-17 p2941 N68-29428 Normal form of operators in Fock space [JINR-P2-3739] 17, p2941, N68-29429 n space-time neutron dis-Eigenfunction expan tributions [RT/FI/68/14] 17 p2945 N68-29555 Green function for characterizing structures and recasting vibration effects in unstable environment 19 p3374 N68-30933 e synthesis model for calcu-[KAPL-M-6742] 19 p3308 N68-30986

SUB.

popul

Re Fig for sq

forms gravit NAS weigh (AD-Tor

SPACE Spa

(NAS

Con [NAS Pass traveh (AMR Mag Lun system [NAS/

SPACEC NT R INAS/ Ante perime for void [NASA Reiz Mark develo

> Com terferer [NASA Single apacect 25 watt NASA Feasi lite opt

NASA Time tions, a cy synci [NASA

Conference proceedings on nonlocal quantum field ory, Hilbert space, form factors, S matrix theory, I space-time functions and space-time for [JINR-P2-3590] 19 p3336 N68-32107 Statistical model for time development of neutron density in energy space (EIR-133) 20 p3543 N68-32717 Quantum theory of scalar field in De Sitter space-time functions [JINR-P2-3777] 20 p3547 N68-33077 20 p3547 N68-33077 SPACE TOOLS Space tool configurations for extravehicular main-[NASA-CR-91052] 03 p0308 N68-11948 Support manual cor procedures, and maint descriptions, operating instructions for Apollo [NASA-CR-63971] 09 p1347 N68-18599 Design, fabrication, and evaluation of hand held electron beam gun and external power supply for electron beam welding in space [NASA-CR-62059] 12 p1882 N68-22611 12 p1882 N68-22611 Power tools for in spa [NASA-TM-X-53730] 22 p3884 N68-35766 Feasibility of developing plasma electron beam welding system for earth orbiting vehicle [NASA-CR-98040] 24 p4260 N68-37603 Feasibility of develo SPACE VEHICLE CHECKOUT PROGRAM Systems safety checklists for use in preparation and review of launch, operating, test, checkout, maintenance, handling, calibration, and ordnance procedures for space webicles [NASA-TM-X-53664] 01 p0047 N68-10975 Ground installation and testing facilities for checkout and acceptance testing of Apollo Saturn 5 [NASA-TM-X-60664] 02 p0194 N68-11067 Test matrix technique for checkout and launching of Apollo-Satura spacocraft [NASA-CR-91056] 03 p0334 N68-12531 Components, and functions of checkout system for third stage of ELDO launch vehicle [DGRR/WGLR PAPER-66-06] 06 p0804 N68-15211 Automatic testing and checkout of Saturn 1 launch [NASA-TN-D-4328] 06 p0916 N68-15570 Voyager spacecraft design standards, and opera-onal support and mission-dependent equipment [NASA-CR-93558] 09 p1435 N68-19105 Computer progra checkout [ELDO-TM-E-12] g method for prelaunch 10 p1504 N68-20395 Test program summ gram combined minio [NASA-CR-61789] ary for Apollo Applications Pro-n payload integration 14 p2350 N68-24553 on payload Subsystem develops or Apollo application nt and qualification test plan program combined mission payload integration [NASA-CR-61787] 14 p2350 N68-24554 Prelaunch checkout and payloud integration test equirements for combined mission flights of Apollo [NASA-CR-61784] 14 p2350 N68-24576 Payload and module integration development and salification test plan for combined mission flights of [NASA-CR-61786] 14 p2350 N68-24577 Checkout systems for a nellites with scientific RF-94-O] 23 p4065 N68-37218 ound generator and im-icable in environmental ft and subsystems 23 p4042 N68-37407 Low freques pedance m

SPACE VEHICLE CONTROL
U SPACECRAFT CONTROL SPACE VEHICLES
U SPACECRAFT SPACEBORNE PHOTOGRAPHY NT SATELLITE-BORNE PHOTOGRAPHY ssearch proposal for extra-atmospheric observa-s of stellar ultraviolet sources on rockets and satel-

[NASA-TT-F-11233] 01 p0066 N68-10986 Geologic applications of orbi lustrations from Gemini flights [NASA-TN-D-4155] a of orbital photography with il-02 p0207 N68-11714 sticn of potential lunar landing areas for early sissions based on lunar orbiter photographs TM-X-38014] 04 p0379 N68-13750 Scientific experimentation during Gemini 10 fli measurements on magnetic field, sky radia spaceborne photography, electron and ion envimental density, and bremastrahlung [NASA-TM-X-60791] 05 p0735 N68-14 03 p0735 N68-14150 Synoptic color photographs of North Africa, South America, China, Formosa, and oceanic areas during Gemini 10 flight 05 p0659 N68-14157 Spaceborne astronomical camera for ultraviolet photography of hot stars during Gemini flight 05 p0659 N68-14161 Representative selection of color photographs from 05 p0665 N68-14958 motomicrpretation techniques for forest species and [MaSA-CR-93185] Advantages, limitations, and optimization of mul-band reconnaissance techniques for earth resource in-[NASA-CR-93365] 08 p1150 N68-18199

Image dissector camera system for daytime cloud cover pictures from Nimbus B or other spacecraft [NASA-CR-93406] 09 p1342 N68-18852 Alternate methods of performing photoimaging ex-eriments of Martian surface from orbiting Voyager (NASA-CR-93551) 09 p1344 N68-19094 Systems analysis and engineering, science payload, science data automation equipment, contamination control, and photoimaging concepts for Voyager Mars

INASA-CR-935611 09 p1433 N68-19098 Aircraft and spacecraft remote sensing of oceano-graphic features and interpretation of photography taken during Apollo 501 mission [NASA-CR-93779] 10 p1522 N68-20041

Comparison of mean cloudiness from satellite photography with surface observations to calculate short and long wave radiation emitted by earth and earth atmosphere [BMWF-FB-W-67-39] 11 p1691 N68-21346

Prototelevision system for co [FTD-MT-24-137-67] mic exploration 11 p1663 N68-21545 Optimization of confid reface detail in terms of nce levels in detecting lunar iewing geometry and camera confider shatter speeds for Lunar Or [NASA-TN-D-4501] Crater analysis 12 p1871 N68-21942

Crater analysis of Mariner 4 phot [NASA-CR-94358] 12 hotography of Mars 12 p1966 N68-22319 Martian surface feature by Mariner 4 space probe [NASA-CR-94925] ntified from photographs 15 p2558 N68-25929

Design requirements and co quipment to provide inform aphy of Moon and Mars straints of photographic ition on surface topography of Moon and Mar [NASA-TM-X-52341] 15 p2467 N68-26244 Gridding of near vertical unrectified space photo-

NASA-CR-95226) 16 p2662 N68-27573 Geological terrain photography during Gemini [NASA-TM-X-63244] 16 p2655 N68-27615

d states constructed from ten on Germini flights 17 p2877 N68-28636 Mosaic of western ur spaceborne photographs taken on Ger [NASA-CR-95478] 17 =

Spaceborne photography of cloud cover and other meteorological phenomena, Surveyor and Orbiter lunar abots, and Gemini space walk and target docking [NASA-SP-168] 22 p3958 N68-34870 SPACECRAFT

Mass spectrometric analyses of particle-surface in-teractions resulting when oxygen atoms moving with satellite velocities strike solid surface [NASA-CR-91520] 04 p0351 N68-13765

Branch-and-bound algorithm for separable concave programs applied to selecting minimum cost fleet of space vehicles 08 p1194 N68-17945 Design and performance of prototype direct current converter for space vehicle television transmitter [NASA-CR-61737] 12 p1850 N68-22732

Solar cells and heater system for improving thermal performance of spacecraft [RAE-TR-67277] 19 p3204 N68-31381

Dimensional analysis, and similitude and scaling laws for structural dynamics model testing of spacecraft [NASA-CR-1195] 22 p3974 N68-35632 SPACECRAFT CABIN ATMOSPHERES

Spacecraft thermostatic fin thermal control system design analysis using Fortran computer program [NASA-CR-89989] 01 p0 [47 N68-10081

Microwave molecular spectroscopy for identifying ontaminants in space cabin atmospheres - bibliog-INASA-CR-951) 01 p0099 N68-10674 Biological, and medical problems during manne pace flight - sensory deprivation, motion sickness an occleration tolerances, oxygen biosynthesis, an [JPRS-43762] 04 p0452 N68-13181 Continuous algae culture as autotropic component of closed ecological system during space flight 04 p0453 N68-13184 Photosynthetic algae regeneration of spacecraft cabin atmosphere during manned space flight 04 p0461 N68-13185

Turbine driven circulation blower powered by energy available from high pressure breathing oxygen in manned spacecraft
[AMRL-TR-67-126] 05 p0615 N68-14511

Design criteria for water vapor electrolyais cell nodules with integral ducting and fan for operation in secretariated spacecraft cabin air NASA-CR-73170] 05 p0608 N68-14784 [NASA-CR-73170]

Interchange of group C beta hemolytic streptococci mong dogs and monkeys confined in dynamic flow at-coapheric systems mospheric systems [NASA-CR-92662] 07 p0946 N68-16719

Catalytic type sensing system for detecting hydrogen-air mixtures in spacecraft cabin atmospheres [NASA-CR-61536] 07 p0999 N68-16903 [NASA-CR-01330]
Mathematical modeling of heat and humidity varia-tion in airtight spaceship compartments
08 p1135 N68-17746

Design, and development of closed system respirato-simulator for space cabin atmosphere control MR-1285] 08 p1137 N68-18072 (MR-1285)

Formulas, tables, and diagrams for computing gase-us contaminant concentrations in spacecraft cabin at-

09 p1289 N68-18919 Hyperoxin at near-normal partial pressures in rela-tion to spacecraft cabin atmospheres during long-dura-tion space flights

10 p1467 N68-20162 Carbon dioxide concentration in spacecraft cabin at-sosphere during manned space flight 10 p1467 N68-20163

Physiological effects of adding inert gases to spacecraft cabin atmosphere

10 p1467 N68-20164

Trace concentrations of toxic contaminants in spacecraft cabin atmospheres during missions of over 2 weeks duration 10 p1467 N68-20165

Aerosol distribution in respirat tamination in spacecraft cabin ats atory tract, and air conmosphere 10 p1467 N68-20166

Effects of reduced atmospheric pressure, two per-cent carbon dioxide atmosphere, and helium oxygen at-mosphere on auditory aculty [SAM-TT-R-943-0268] 11 p1635 N68-21193 11 p1635 N68-21193

Higher plants for food, water, and air regeneration in osed ecological systems [JPRS-45277] 12 p1829 N68-22573

Design and development of prototype contaminant sensor for manned space missions [NASA-CR-66606] 13 p2067 N68-23461

Reduction of flammable and to-sich manned spacecraft ca 14 able and toxic materials for use ft cabin atmospheres 14 p2204 N68-24756 in oxygen rich manned [NASA-TN-D-3415]

Human speech capability during simulated space flight in mixed helium-oxygen cabin atmosphere [AMRL-TR-67-125] 15 p2402 N68-26679 Cabin atmosphere control for extended manned space flight [NASA-TM-X-60423] 16 p2604 N68-27408

Calibration of hot-wire detector for particle concen-tration and size distribution in closed spacecraft cabin atmospheres [NASA-CR-95398] 17 p2829 N68-28606

Spacecraft construction material flammability igni-tion temperature, and burning rate in varied cabin atmospheres [AFAPL-TR-68-35] 18 p3187 N68-30134

Semiconducting polymer film preparation and use in contaminant detector for space cabin atmosphere [NASA-CR-86047] 22 p3815 N68-34881

SPACECRAFT CARIN SIMULATORS

Simulated spacecraft cabin and controlled metabolic obditions study to determine potential hazard of caphylococci and micrococci to human subjects NASA-CR-91678] 05 p0610 N68-14330 staphylococci and mi [NASA-CR-91678]

ation of indigenous staphylococci, and it in human subjects during life support simumicrococci in human subjects di lation at elevated cabin temperat [NASA-CR-92557] 06 p0773 N68-15701

Distribution, and hazards of indigenous microbial opulations in humans during prolonged space flight

[NASA-CR-92648] 06 p0774 N68-15839

Development of fire extinguishing systems, and pro-ective clothing for oxygen enriched atmospheres -uman safety, space environment simulation chambers, human safety, space env and accident prevention [AMD-TR-67-2] 09 p1287 N68-18744

Residue materials analyses on spacecraft cabin simu-stor fire

09 p1288 N68-18745 Fire extinguishing system for spacecraft cabin simulate and protective clothing

or personnel 09 p1288 N68-18747 Fire prevention measures, and protective clothing requirements for spacecraft cabin atmosphere simulator personnel

09 p1288 N68-18750

Water immersion simulation study of astronaut per-formance during airlock ingress or egress at reduced

NASA-CR-9711 10 p1477 N68-20339 Aerospace medicine problems of manned orbital and interplanetary space flight - human reactions to weightleasness, acceleration, immobilization, cabin at-mosphers and conventions.

10 p1470 N68-20545 Toxic damage effects on an cabin atmospheres nals in simulated space

10 p1472 N68-20565 Life support systems test in spacecraft cabin simula-tor with oxygen and water recovery [NASA-TM-X-61179] 21 p3640 N68-34419

SPACECRAPT CABINS

Bremsstrahlung flux-energy spectra inside Gemini 10 sececraft during flight through south Atlantic mag-etic anomaly region 05 p0659 N68-14153

Space cabin toxicological experiments on animals 08 p1134 N68-17369

Flammability and atmosphere contaminant hazards of plastics and nonmetallic materials in manned spacecraft cabins [TR-0158/3250-20/-8]

08 p1136 N68-17925

Computer calculation of spacecraft compartment ynamic pressure with orifices and outgassing materials

[NASA-TM-X-63133] 10 p1514 N68-19704 Passive thermal control of rigid and flexible ex-

(AMRL-TR-67-128) 13 p2005 N68-23412

Magnetic shield simulator suctor as shield for small volu dy of quasi-hollow con-toroidal vehicle 15 p2551 N68-26136

Lunar excursion module crew compartment cooling system validation test [NASA-TM-X-61146] 19 p3260 N68-32025

SPACECRAFT COMMUNICATION NT REENTRY COMMUNICATION

Probe to bus communication rates for Mars 1971

multiple probe system [NASA-TM-X-35993] 01 p0028 N68-10162 Antenna design and very high frequency repeater ex-periment carried on applications technology satellite for voice communications

for voice communica [NASA-CR-90507] 02 p0272 N68-11831

Relay link radio frequency system development, Mark 1 ranging code spectrum and power amplifier development for spacecraft application 03 p0323 N68-12327

Computer prediction of network radio frequency in-terference between multiple satellites [NASA-TM-X-63050] 04 p0475 N68-12936

Single helix, focused traveling wave tube for spacecraft telemetry systems and capable of delivering 25 watts power at 2.3 GHz at overall efficiency of 42.2

NASA-CR-66522] 05 p0635 N68-14202 Feasibility study of reco lite optical communication astronomy and scientific in [NASA-CR-61441] mmendations for earth satel as experiments and relate

05 p0745 N68-14978 Time division access system for satellite communica-ons, and figure of merit for effects of bit and frequen-[NASA-CR-92715] 07 p0961 N68-16161

Development of experimental linear event frequency modulator for aircraft satellite communications [NASA-CR-93288] 08 p1146 N68-17615

(NASA-TN-D-4402) 08 p1150 N68-18178

Waveform distortion in maximum likelihood arlington detector for M-ary pulse frequency modula-[NASA-TN-D-4294]

09 p1302 N68-18542 d life support subsystem power, and propulsion Environmental controlmental co subsystems for manne [NASA-CR-73191] 09 p1274 N68-18698

Supervisory comput checkout and data Saturn/Apollo applicatio [NASA-CR-61614] program for onboard sanagement system of em 09 p1311 N68-18945

ems of ground and spacecraft cessing system for Jupiter mis-

11 p1662 N68-21481 Summary information on technical activities of deep space network, space flight projects, communication systems, and deep space instrumentation facilities [NASA-CR-94802]

14 p2226 N68-25631

is of spacecraft CW Precision power m signal with microwave [NASA-CR-94921] 15 p2423 N68-25805 parallel plate broadband

antenna for spacecraf [NASA-TN-D-4555] 15 p2423 N68-25918 of VHF radio frequency cation links resulting from

multipath propagal (NA-68-161 15 p2425 N68-26174 Feedback from gro on for spacecraft adaptive telemetry system [NASA-CR-94917]

15 p2429 N68-26672 aring simulated space hin atmosphere 15 p2402 N68-26679 Human speech car flight in mixed helium [AMRL-TR-67-125] unical scanning system

folding antenna w tellite application 16 p2626 N68-27940

charts for tentatively ency signal intensity in satel-

17 p2851 N68-29091 Systems analysis and perfor communication equipment, an-tion studies on Earth-Mars flyby [NASA-CR-95572] rformance of deep space and tracking and navigamimion 17 p2855 N68-29522

stations for laser radar and at MSC-4 on Gemini 7 flight 19 p3288 N68-31760 Equipment and gro

Functional capability receiver exciter subsy-communications and to nd physical arrangement of in unified S band Apollo (NASA-CR-96384) g ground station system 20 p3438 N68-33162

21 p3775 N68-34018 [NASA-CR-96625] ground station system
22 p3832 N68-34906 Time Division Multiple Acc satellite communication with g [NASA-TM-X-63338]

Ultrahigh frequency cross slot airborne antenna for satellite communication (TR-446) 22 p3835 N68-35419 22 p3835 N68-35419

communication ground station [TH/68-E-01] principles for satellite 22 p3838 N68-35736

Orthogonal multiplexing theory and general design riteria related to unified S band communication

NASA-CR-971001 22 p3839 N68-35903 Laser aiming sim satellite optical coms [NASA-CR-61975] is for synchrone

23 p4071 N68-36166 extellites and sun with restellite recognition 23 p4176 N68-36546 etric rel probability assumpt

Legal aspects of saturated space activities, no aspects of space explore [NASA-CR-97307]

24 p4357 N68-37767 Tradeoff analyses on C and X band frequencies for round-manned spacecraft communications, and trans-NASA-CR-92354 24 p4227 N68-38105

SPACECRAFT COMPONENTS

NT LANDING MODULES

NT LUNAR LANDING MODULES

NT LUNAR MODULE

NT MARS EXCURSION MODULE

Design study of electrical component technology for 0.25 to 10.0 megawait space power systems [SAN-679-3] 01 p0006 N68-10967 alyses and expendables data on pacecraft flights 07 p1085 N68-16403 Maintenance task snal long duration, manned sp [NASA-CR-73152]

Reliability programs for serospace systems and ap-sicability of Bayes theorem in assuring component re-

09 p1347 N68-18692 dling spacecraft (NASA-CR-94356) 12 p1825 N68-22681

control tests on third ch vehicle 15 p2564 N68-26026 nt effects on spacecraft

15 p2550 N68-26130

Electron transport study in thick targets to determine ielding effectiveness of spacecraft components 15 p2551 N68-26138

High intensity noise gen spacecraft systems and co [NASA-CR-95991] n for acoustic testing of 19 p3260 N68-32129

Thermoelectric power converters for spacecraft ap-FTD-HT-23-796-671 23 p3994 N68-36645

SPACECRAFT CONFIGURATIONS
NT SATELLITE CONFIGURATIONS

Spacecraft configurations and propulsion system odule design for Voyager project, based on lunar module descent stage ap [NASA-CR-89997] 01 p0138 N68-10239

Spacecraft configura-tude control, and opt ons, life support systems, at-nization of spacecraft design and instrumentation [NASA-CR-66509] g primate spacecraft 05 p0743 N68-14890

Performance, design or rocedures for laborator mate spacecraft [NASA-CR-66510] 05 p0743 N68-14891

Biological experiment to determine versatility d effects on two primates lesign of orbiting primate spacecraft (NASA-CR-665121

05 p0744 N68-14893 Surveyor 5 configur mission, and experiment ments in lunar surface [NASA-SP-163] elevision picture trans-neasuring chemical ele-08 p1244 N68-17844

Performance characteri ications satellite configu ics of two passive committions using solar radiation for stationkeeping [NASA-CR-66575] 09 p1431 N68-18810

ering, operational sup-inpment, and spacecraft definition for Voyage (NASA-CR-93564)

quipment, and roject 09 p1433 N68-19096 in flight Effect of radioison capsule on Voyager sp [NASA-CR-93563] nal generators in flight configuration 09 p1433 N68-19099

Systems engineer spacecraft configurati [NASA-CR-61661] date of preliminary syager 1973 mission 09 p1434 N68-19100 Voyager spacecra trajectory analyses, ar [NASA-CR-93550] uration, systems and integration interfaces 09 p1434 N66-19101

Systems engineering Voyager spacecraft config opportunities - 1973-1979 [NASA-CR-61662] data and recommended secration for Martian launch

09 p1435 N68-19151 Systems engineering, structural design, and per-ormance data on recommended Voyager spacecraft INASA-CR-935341 09 p1435 N68-19152

Science experiments, photo Voyager spacecraft configura atmosphere and surface tempe [NASA-CR-93536] naging equipment, and one for studying Mars

09 p1436 N68-19157 Design alternatives and growth potential of recom-nended and upgraded Voyager spacecraft configura-

[NASA-CR-93560] 0-09 p1436 N68-19158 roud, temperature control, recommended Voyager Engineering analysis of sh and plume heating in spacecraft configuration [NASA-CR-93525]

09 p1437 N68-19161 le project 16 p2772 N68-27641

Diffusion of Frees a tion of leaks in serospa (NASA-CR-92156) m trace putes for detec 17 p2978 N68-29548

Parametric data, systems analyses, and space capsule design concepts - direct versus orbital entry for Mars [NASA-CR-66660] 19 n3366 N68-31832 shell configuration analyses, sesign criteria - direct versus Aeroheating and aeroshell and ablative heat shield design orbital entry for Mars missions [NASA-CR-66663] 19 p3367 N68-31835 Subsystems analyses and parametric data on configurations for direct versus orbital entry for Mars missions [NASA-CR-66664] 19 p3367 N68-31836 Technology requirements and spacecraft design stu-dies for atmosphere braking to orbit about Mars and

[NASA-CR-1131] 21 p3766 N68-34086 subsystems, and configurations of spacecraft for Mars mission Performance, subsystem analyses of powered spacect [NASA-CR-66668] 21 p3779 N68-34279

Dynamic equations for simulating multiple-bodied spacecraft configuration subjected to gravity gradient and disturbance torques and forces [NASA-CR-96934] 22 p3961 N68-35613 Feasibility of Mariner Mars 1971 orbiter based on

Mariner Mars 1969 design [NASA-CR-97216] 23 p4169 N68-36667 SPACECRAFT CONSTRUCTION MATERIALS

Annotated bibliography on attachment methods for advanced spacecraft thermal control materials [NASA-CR-73150] 01 p0069 N68-10418 Long term storage tests to determine spacecraft naterials compatibility with hydrazine and hydrazine

[NASA-CR-90336] 02 p0260 N68-11296 Annotated bibliography of Soviet literature on struc-tural strength problems of space vehicles under condi-tions of dynamic loads [ATD-68-14-72-1] 02 p0276 N68-11472

Effects of ethylene oxide-Freon 12 decontamination and dry heat sterilization procedures on potential spacecraft polymeric materials [NASA-CR-90429] 02 p0225 N68-11474

Influence of structure and materials research on

weight, performance, and cost of advanced launch vehicle systems [NASA-CR-974] 02 p0271 N68-11520

Nuclear radiation and cryogenic temperature com-bined effects on mechanical properties of titanium and aluminum alloys used in nuclear rocket construction rocket construction 04 p0541 N68-13825 [NASA-CR-9[519]

Flammability and atmosphere contaminant hazards of plastics and nonmetallic materials in manned spacecraft cabins [TR-0158/3250-20/-8]

08 p1136 N68-17925 Thermal properties of spacecraft materials - evalua-on of aluminum honeycomb panel structures and

ablator materials [NASA-CR-65980] 09 p1449 N68-18853 Guide manual for aiding designers in selection of duct, tubing, and gasketing materials for space vehicles and minites

[NASA-CR-93927] 11 p1704 N68-20978 Review, abstracts, and bibliography on advanced composite materials for spacecraft applications [NASA-CR-94040] 11 p1718 N68-21183

Reduction of flammable and toxic materials for use in oxygen rich manned spacecraft cabin atmospheres [NASA-TN-D-3415] 14 p2204 N68-24756

Thermophysical properties of spacecraft thermal [NASA-TM-X-60406] 15 p2575 N68-26303

Filamentary composite materials reviewed for poten-tial applications in spacecraft structures [NASA-TM-X-60069] 16 p2772 N68-27470

Environmental testing of whisker like flexible reinforced composite fiber for spacecraft window [NASA-TM-X-60137] 16 p2690 N68-27526

Self sealant methods for protecting spacecraft and spandable structures against hazards of meteoroid 16 p2785 N68-27932

New materials and manufacturing technologies for high strength and high temperature expandable struc-

16 p2786 N68-27937 Radiation resistance, outgassing characteristics, and weight of five electrical insulation materials for

[NASA-TN-D-4553] 16 p2692 N68-28264 Surface contamination generation by materials for aerospace and ordnance uses 17 p2895 N68-29332

Spacecraft construction material flammability igni-tion temperature, and burning rate in varied cabin at-[AFAPL-TR-68-35] 18 p3187 N68-30134

Summary data on investigation of magnetic proper-s of selected spacecraft materials ties of selected spacecra [NASA-TM-X-60414] 21 p3754 N68-34165

Metallurgical aspects of reliability for small nitrided components in spacecraft drive systems [NASA-TM-X-59847] 21 p3697 N68-34248

Development of space engineering products for use in aerospace environments and their usage in industry [NASA-TT-F-11938] 22 p3883 N68-35603 their usage in industry 22 p3883 N68-35603

SPACECRAFT CONTAMINATION

Cell culture method of screening contaminants hich may appear in manned spacecraft NASA-TN-D-4251] 01 p0007 N68-10122 which may appear in a [NASA-TN-D-4251] assay for detection of Firefly bioluminescent

microorganisms in spacecraft was [AMRL-TR-67-71] ter supplies 01 p0011 N68-10551

Methodology of measuring internal contamination in spacecraft hardware [NASA-CR-90533] 02 p0167 N68-11808 02 p0167 N68-11808

Microbiological contamination of Gemini 9 spacecraft before and after flight [NASA-CR-972] 03 p0304 N68-11968

Outline of spacecraft contar [NASA-CR-91668] nation control 05 p0609 N68-14221 Clean room facilities for Explorer 35 spacecraft as-

[NASA-TM-X-63078] 06 p0823 N68-15994 Flammability and atmosphere contaminant hazards of plastics and nonmetallic materials in manned spacecraft cabins [TR-0154/3250-20/-8]

08 p1136 N68-17925

ulas, tables, and diagrams for computing gase-taminant concentrations in spacecraft cabin atous contaminant concentral mosphere 09 p1289 N68-18919

Systems analysis and engineering, science payload, science data automation equipment, contamination control, and photoimaging concepts for Voyager Mars

INASA-CR-935611 09 p1433 N68-19098 Decontamination requirements for Voyager spacecraft using oxide-Freon 12 gas as biocidal agent [NASA-CR-93329] 09 p1437 N68-19160

Planetary quarantine objectives, microbial death odels, and surface contamination studies

11 p1635 N68-21067 [NASA-CR-93966] Microbiological studies of spore release, vacuum probe sampling, effectiveness of ultrasonic baths, dry heat inactivation, and Surveyor 7 and Apollo spacecraft contamina [NASA-CR-93967]

11 p1635 N68-21078 Systems approach for establishing cohesive con-tamination control techniques [NASA-CR-94357] 12 p1823 N68-22442 12 p1823 N68-22442

Standard contamination prevention procedures for rork in experimental assembly and sterilization labora-

[NASA-CR-94351] 12 p1826 N68-22765 Voyager 1973 mission plan and probability allocations [NASA-CR-94387] tary quarantine model

12 p1969 N68-22933 Light scattering monvolatile residue spacecraft quipment cleanliness evaluation test methods 17 p2844 N68-29325

Ultrasonic energy assaying of microorganisms con-taminating Voyager project planetary probes etary probes 17 p2826 N68-29345

Optical measuring instrur to monitor spacecraft conta [NASA-TM-X-63279] ent flown on IMP satelline 18 p3073 N68-29834

Toxic hazards and human tolerance to trace con-minants in spacecraft cabin atmospheres studied for life support system de [AMRL-TR-67-146] 18 p3009 N68-30135

Semiconducting polymer film preparation and use in ontaminant detector for space cabin atmosphere cabin atmosphere 22 p3815 N68-34881 [NASA-CR-86047]

Spacecraft contamination p valysis for possible 1972 Marin preliminary quarantine iner Venus probe 22 p3961 N68-35642 analysis for possible [NASA-CR-97071]

SPACECRAFT CONTROL

NT SATELLITE ATTITUDE CONTROL

NT SATELLITE CONTROL

Full scale tests of major thrust vector control system arameters and verification of system operation NASA-CR-938] 01 p0 43 N68-10574 parameters and ve NASA-CR-9381

Space vehicle and control system dynamic respo to atmospheric disturbances [NASA-CR-942] 02 p0273. N68-110

02 p0273 N68-11089 Handling qualities, disturbances and reentry corridor boundaries for spacecraft control system design [NASA-CR-945] 02 p0274 N68-11133

Mechanism of anomalous photovoltages in metallic lms, and automatic control of space vehicles 03 p0428 N68-12001

ion instrumentation, and automatic control and Communications indonestic control and reochet control elements for automatic control and reorientation of space vehicle flight trajectories 03 p0330 N68-12003

Effects on cruise limit cycle activity of spacecraft symmetric attitude control jet configuration.

03 p0417 N68-12311

Injector hydraulics, sterilizable propulsion system development, and spacecraft attitude control gas system analysis in liquid propulsion research 03 p0411 N68-12318

Feasibility study of high prec control system for future spacecri [NASA-CR-86010] on triaxial attitude 04 p0584 N68-13827

lon sensing attitude ing Gemini 10 flight ol system performance dur-05 p0687 N68-14164

Lunar module backup guidance, navigation and pilot interfaces with control systems during lunar landing [NASA-TN-D-4131] 07 p1022 N68-16836

07 p1087 N68-17197 [NASA-CR-61545] de control systems for satel-

Active and passive attitu 08 p1199 N68-17414

Quality control of spacecraft attitude control systems mathematical and environmental simulation - degrees f freedom and three dimensional testing mathematical and environ of freedom and three dimen 08 p1199 N68-17423

Nonlinear optimal attitude control of planet pointing apace vehicles, and optimal control of satellite trajecto-ries [NASA-CR-93250] 08 p1240 N68-17884

Onboard computer for control synthesis of manned seceraft [NASA-TT-F-11570] 08 p1243 N68-18203

Systems design, feedback control, maneuverability, and performance analysis of dual reaction wheel control of spacecraft pointing [TR-0158/3307-01/-2]

09 p1417 N68-18258 Performance analysis of electric power, data link, signal processing, and flight control systems of Sur-veyor I spacecraft [NASA-CR-93491] 09 p1429 N68-18655

Hydrodynamic equations for stability, and control analyses on liquid propellant space vehicles [NASA-CR-941] 09 p1443 N68-18769

Summary of studies on guidance techniques and con-trol equipment, spacecraft computers, and mathemati-cal methods for optimal control of spacecraft and [NASA-TM-X-53709] 09 p1423 N68-18983

Design, and instrumentation of modified space environment simulator for spacecraft testing [NASA-CR-93689] 10 p1511 N68-19511 art testing 10 p1511 N68-19511

Simulator study of pilot control over lunar module during ascent from lunar surface [NASA-TM-X-1549] 11 p1737 N68-21366

Time optimal rendezvous trajectories for variable thrust intercepting and orbiting space vehicles [NASA-CR-1036] 12 p1965 N68-22202

Spacecraft control during atmospheric reentry using variable structure automatic system 12 p1965 N68-22223

Nonlinear attitude control system design for space vehicle 13 p2155 N68-23421 Acceleration vector attitude co

ontrol system 13 p2155 N68-23422

Test apparatus and procedures for aerodynamic model tests of spacecraft control system parameters [NASA-CR-947] 13 p2139 Ne8-23452 Positive ion sensing system used to measure pitch and yaw on Gemini 10 and 12 spacecraft [AFCRL-67-0158] 13 p2071 N68-24255

Euler equations of motion for determining effects of serodynamic disturbances on apin-stabilized space [REPT.-67SD349] 14 p2179 N68-24518

Inverse problem of optimal control for reducing angular velocities of space vehicle to zero
[NASA-CR-94924] 15 p2558 N68-25928

A-1170

[NA Pa solar [NA (NA Suida NAS

SUB

Th (NAS Spi analy [NAS Syn troi sy (FTD Cor in obt

Stra

Visco dual-sp

расеси

SPACECT NASA Laner INASA PACECE NT SA

Asses methods (NASA-Solar monitori [NASA-Techn INASA-

System [NASA-Genera NASA-1

Launch imposed i ration [NASA-T Spaceci ade co and instru NASA-C Perform

tion of OWS as requirements during docking as [NASA-CR-61820] storage 16 p2754 N68-26967

utial applicatio of fluidics to spacecraft at-(NASA-TM-X-59968) 16 p2592 N68-27381 for attitude control of spacecraft 17 p2909 N68-28361 Passive damping tech lar orientated internlar

[NASA-TN-D-4641] Control system design case histories involving sp [NASA-CR-86070] analysis, and survey of raft dynamic interaction ft dynamic interaction 17 p2977 N68-29296

Subsystems of Mariner guidance and control system [NASA-CR-95687] Venus 67 spacecraft 17 p2912 N68-29444 ol system for spacecraft

Three axis attitue under random pertur [NASA-CR-86072] 18 p3169 N68-29871

ntrol, and flight path sded mission 18 p3169 N68-29995 Spacecraft performance, co analysis of Lunar Orbiter 3 exter [NASA-CR-1109]

(FTD-MT-24-132-67) 18 p3052 N68-30105 d tracking Lunar Orbiter 5 lunar environment data 18 p3172 N68-30631 Control, performance, and in obtaining selenodetic and is [NASA-CR-1142]

Satellite attitude sen ng and control accuracy 20 p3594 N68-33175

rm areas in developing manned uidance and control systems 20 p3528 N68-33176 Technological problem a sectraft navigation guida

idance and control ary exploration 20 p3528 N68-33182 Unmanned spacecraft chnology for lunar and pi

Strapdown and gimbs systems for advanced unm aled guidance and control sanned spacecraft and launch

20 p3528 N68-33183 Computerized simulation of interactions between outrol system and nutational motion of dual spin pacecraft

20 p3596 N68-33532

Viscous nutation damper with cantilevered mass for sal-apin spacecraft stabilization 20 p3596 N68-33535

Design of spin axis and velocity control system for ual-apen spacecraft

20 p3597 N68-33538 on wheels for dual pointing control of

20 p3598 N68-33541

as for active control system of generalized spacecraft simulation [NASA-CR-96953] on com program 22 p3961 N68-35616

odels for synchronous systems 23 p4071 N68-36166 satellite optical com: [NASA-CR-61975]

SPACECRAFT DESIGN NT SATELLITE DESIGN

3

d

3

8

15

q

13

11

12

23

ce

21

22

ic

52

ch

55

ce

18

28

tal engineering and testing mt of various spacecraft Amesument of environmethods used in develop

[NASA-TN-D-4181] 01 p0138 N68-10192 simulation testing of ar anchored interplanetary al design and protective

[NASA-TN-D-4112] 01 p0149 N68-10299 magnetic fields generated by Techniques for limitin spacecraft systems and s [NASA-TM-X-55790]

02 p0265 N68-11295 System engineering or ons in spacecraft

[NASA-CR-90423] 02 p0275 N68-11434 General method for dense to obtain quasi-omnid [NASA-TN-D-4254] ig circular array antennal patterns 02 p0181 N68-11475

[NASA-IN-12]
Economic and design considerations for development of commercial supersonic transports
03 p0299 N68-11918

Launch vehicle technic sposed by Nimbus C ap nical requirements and restraints spacecraft and adapter configu-

[NASA-TM-X-60722] 03 p0417 N68-12024 Spacecraft configure ns, life support systems, at-zation of spacecraft design g primate spacecraft 05 p0743 N68-14890 [NASA-CR-66509]

Performance, design construction and operation test recodures for laboratory test model of orbiting primate spacecraft [NASA-CR-66510] 05 p0743 N68-14891 Orbiting primate upa documentation on system periment design, tests pro [NASA-CR-66511]

Biological experiment determine versatility

05 p0744 N68-14893 easibility study of a eric irregularities e for observation of iono-g European serospace technology [ESRO-SP-24] 06 n0911 N68-15666

Photographic capabiliti and design of Lunar [NASA FACTS, V. 4, NO. 4]

06 p0917 N68-16009 pility planetary lander vehicle design and fabri-

(B-68-2. V. 2) 07 p1087 N68-17174

lonospheric composition and structure, cosmic ray sowers, meteor trails, and solar flare studies, and succeraft design 08 pl168 N68-17602

Data processing systems, thermal subsystems, design, and mission performance summary for Surveyor I

[NASA-CR-93493] 09 p1429 N68-18654 Structural weight analysis and design charts on feasi-ity of applying stationkeeping concepts to passive manunications satellites

[NASA-CR-66574] 09 p1431 N68-18812 Standard trajectories and parameters for design of Voyager spacecraft, and performance prediction, inter-faces, and reliability of spacecraft subsystems [NASA-CR-9359] 09 p1433 N68-19097 cecraft subsystems 09 p1433 N68-19097

ion of Centaur iner-Design survey review

tial guidance system [NASA-CR-86040] 09 p1373 N68-19164 obsystem design criteria for leastary spacecraft concept eria for integrated manned in-

terplanetary specect [NASA-CR-66564] 09 p1277 N68-19247 Spacecraft, space accebased support for integra spacecraft concepts [NASA-CR-66562] referation system, and earth

09 p1438 N68-19248 Major constraints on a of OSO experiment instru (TN-67-10) tic design and bulancing

10 p1557 N68-19549 Mission pla raft design criteria for

interplanetary space flight (NASA-CR-93680) 10 p1598 N68-19612 matical modeling of spacecraft thermal characteristics [ISAS-419, V. 33, NO. 1]

10 p1613 N68-19918

n and synti logy applied to space [REPT.-67-C-229] 13 p2150 N68-23576

eria for large reusable system for 1980s 13 p2153 N68-24092 Design and devel BMWF-FB-W-68-07

Hardware configurations fic experiments into Ap is and integration of 23 scient pollo Applications Progra tific experiments in mission AAP-IA [NASA-CR-61785] 14 p2343 N68-24575

analyses, and support applications program part 3 NASA-CR-61791] 14 p2343 N68-24578

Trade studies, engineering data for mission 1A of Apollo analyses, and support applications program -NASA-CR-61788) 14 p2343 N68-24579

analyses, and support applications program ade studies, engineering for mission 1A of Apollo PASA-CR-61790] 14 p2343 N68-24580

Spacecraft system design, qualification testing for Gemin [NASA-CR-1106] on planning, and reject 14 p2352 N88-25577

AIMP-D spacecraft thermal design and miss NASA-TM-X-63282] 18 p3170 N68-30070

Design of advanced Mars expl INASA-CR-966251 oration spacecraft 21 p3775 N68-34018 instrumentation, and Temperature control d

Mariner 5 spacecraft 21 p3777 N68-34070 performance characteristics of [NASA-CR-96708] Performance and vehicle de orbital logistics spacecraft [NASA-TM-X-61216] ign concepts for earth 21 p3780 N68-34393 Design and performa lander capsule point de constraints for capsules [NASA-CR-66678-5] acteristics of Mars hard ad criteria and mission 22 p3967 N68-35984

es 3 and 4 in the Analytical design de Mars hard lander study [NASA-CR-66678-6] 22 p3967 N68-33985

Science utility of auto 23 p4174 N68-37421

Simulator study of pilo docking of large altitude st [NASA-TN-D-4263] ized components 02 p0271 N68-11476

Cessini spacecraft dorking system development, tenigs concepts for manuscring docked vehicle, and docking and undocking flight experience 05 p0744 N68-14945

[NASA-CR-925931 06 p0778 N68-15733

INASA-CR-10111 09 p1424 N68-19186 tic docking of Cosmos 212 and 213 satelli

12 p1972 N68-22551

currence formulas for deriving equations of mo-or system of multiple rigid bodies and applications oblems of space flight dynamics 13 p2156 N68-23088

Orbital rendezvous and docking experiment of Cosmos 212 and 213 satellites [NASA-CR-94771] 14 p2352 N68-25370

Complexities of docking maneuvers (JPRS-45653) zities of or al spacecraft rendezvous and 15 p2559 N68-25975

Estimation of OWS auxillar requirements during docking ([NASA-CR-61820] storage 16 p2754 N68-26967

er development for uring rendezvous 19 p3306 N68-31771

Automatic orbital docking theory for incre enft rendezvous and ature launch capabilities

[NASA-TT-F-11939] 21 p3767 N68-34137 us docking, and visual

SPACECRAPT ELECTRONIC EQUIPMENT

Onboard automatic m wheelbarrow spacecraft [TR-0158/3113-03/-1] etic attitude control for

03 p0417 N68-12073

Twenty watt traveling w suitable for spacecraft applie [NASA-CR-66525] tube amplifier design 05 p0638 N68-14636 Tradeoff design study in spacecraft tape secorder

[NASA-CR-92539] 06 p0848 N68-16100

Feasibility planetary le r vehicle design and fabri-[R-68-2, V. 2] 07 p1087 N68-17174

Parallel system and tions, input-output sci tion of spaceborne mo [NASA-CR-93431] oint to point communic and organizational ope 09 p1308 N68-18536

Onboard checkou [NASA-CR-61612] 09 p1309 N68-18782

Specifications for rogram support system nanagement system 09 p1309 N68-18783 (NASA-CR-61610)

System logic, da la transmission sy quisition process, and digital of onboard checkout and data management system [NASA-CR-6[6]1] 09 p1310 N68-18831

inunch vehicles (NASA-TM-X-53709)

09 p1423 N66-18983 analysis by space 09 p1372 N65-189

ysis computer program by iterative techniques 09 p1423 N68-18989

interfaces, performance, of Voyager 1973 flight (NASA-CR-93552) 09 p1434 N68-19102

SUBJ

NAS

He

Ge

[NAS

space

(NAS

Des

Mei

analys [NAS.

[NAS

Opti

Proj

[NAS/

Opti Mars t

Gim

Feas

guide a

Vent

INASA INASA

Subs

NASA

Syste

spaceer star me

star mei

INASA

Appli to soft k (AGRR

Attitu

Tech

INASA-

Unma

Strape systems vehicles

Man o avigatio

[NASA-

Spaces celestial ([NASA-7

Classifi ing to app

Solutio to circula

Voya

and gu

Nav

NAS

Trajectory analysis, reliability of spacecraft equipment, performance prediction, and functional requirements of Voyager Mars spacecraft (NASA-CR-93554) 09 p1435 N68-19153 09 p1435 N68-19153 Spaceborne pattern recognition s ing and classifying objects in video di [NASA-CR-999] 09 on system for identify-09 pl320 N68-19229 Gemini and Apollo projects reviewed for future role of computers in manned space exploration [REPT.-67-15] 10 p1502 N68-19809 Breadboard models of magnetic switch with fail-safe characteristics for spacecraft cumputer [NASA-CR-94324] 12 p1850 N68-22342 Design and construction work on spacecraft array processor for onboard processing of experimental data [NASA-CR-94331] 12 p1846 N68-22422 Internal vibration of electron equipment resulting om acoustic and shaker induced excitation 14 p2362 N68-25500 tegrated random vibration-electrical test methfor demonstrating performance of rendezvous radar 14 p2364 N68-25509 Voltage breakdown in electronic equipment at low pressures /conference/ [NASA-CR-95089] 15 p2442 N68-26875 High voltage breakdown problems in Goddard scien-15 p2442 N68-26877 Corona induced failures in Nimbus A electronic equipment during ground testing 15 p2442 N68-26878 High voltage design specifications for detector as-sembly /ultraviolet photon counters/ used in Goddard experimental package 15 p2442 N68-26879 Electrical breakdown mechanisms affecting space 15 p2442 N68-26880 Materials and techniques used in construction of power supplies for high voltage equipment operating in critical region 15 p2443 N68-26883 Measurements of electrical discharges caused by corona, glow discharges, and voltage breakdown under conditions encountered in aerospace vehicles operating within high altitudes 15 p2445 N68-26895 Microwave voltage breakdown at critical pressures /Ranger spacecraft/ 15 p2445 N68-26897 Materials engineering aspects of corona and arcing henomena - evaluation of materials used in high voltage units in Ranger 6 television system
15 p2446 N68-26899 Design practices and packaging methods for preven-tion of high voltage breakdown in spacecraft electronic 15 p2447 N68-26906 Leakage rate limits of hermetically sealed spacecraft actronic components, and correlation of radioactive elation of ra electronic components, and correlations and helium mass spectrometer det [NASA-CR-61225] 17 p ter detection methods 17 p2861 N68-28911 Research and advanced development data on nuclear electric propulsion, spacecraft design and systems engineering, electronics systems, and chemical NASA-CR-95761] 17 p2972 N68-29415 handbook /text/ 17 p2863 N68-29525 ic device data handb INASA-CR-11101 Microelectronic device data handbook /manufacic device informa turer and specific di [NASA-CR-1111] 17 p2863 N68-29526 Design of magnetic memory and logic cell arrays for associative processor useful in spaceborne applications [NASA-CR-86076] 18 p3041 N68-30261 Experimental and electronic probe with perihelion of 0.3 AU [RF-95-OE] ic requirements for solar 18 p3168 N68-30814 Engineering design data on vehicle-borne subsystems of airborne range and orbit determination system [NASA-CR-61900] 19 p3238 N68-31327 Application of associative memories to data processing for future space vehicles [NASA-CR-86074] 19 p3247 N68-31370 19 p3247 N68-31370 High thermal conductivity polymeric materials for eacecraft electronic equipment use [NASA-CR-96151] 19 p3299 N68-32037 Lectures at ESRO summer school on instrumenta-on for telemetry, satellite localization, and

Design and logistic criteria for advanced airborne and spaceborne computers, and man-computer inter-20 p3445 N68-33291 [AGARD-ES-11 Design parameters for developing phased array equisition and tracking radar for onboard experiment in Apollo spacecraft [NASA-CR-92249] 21 p3659 N68-34242 Spaceborne data processing equipm tegration concept [NASA-TM-X-61192] 21 p3666 N68-34749 Advanced multiprocessor of manned Mars lander mission [NASA-CR-1159] nputer organization for 22 p3843 N68-35560 Weight, volume, and power estimates of future spaceborne memories with small bit capacities [NASA-CR-97075] 22 p3845 N68-35939 Artificial satellite recorder for measuring space-time distributions of cosmic ray intensity in energy range in-fluenced by earths magnetic field 23 p4060 N68-36143 Defining promising technology for improving spacecraft data handling and minimizing data processing and transmission requirements NASA-CR-97117] 23 p4018 N68-36332 processing and transi [NASA-CR-97117] Fessibility and advanta decoder and display device [NASA-CR-86105] ages of spacecraft fluidic 23 p4025 N68-36418 Guidance and control research - Josephson junction memory elements, frequency response of thin film ther-mal detectors; gallium selenide barrier gate, and photoconductor metal contacts 23 p4099 N68-37404 Digital generation of acceleration voltage for mass spectrometer, and development of low power, non-destructive readout, plated-wire memory 23 p4066 N68-37414 SPACECRAFT ENVIRONMENTS chomotor performance leven d manned orbital laboratory 02 p0165 N68-11078 Four hour psycho SAM-TR-67-55 Thermal analysis of spacocraft active heat rejection [GDC-ERR-AN-1074] 02 p0291 N68-11759 Computer program to determine mechanical shock spectra for analysis of transient flight data in spacecraft [NASA-CR-91356] 04 p0572 N68-12955 Scientific experimentation during Gemini 10 flight-neasurements on magnetic field, sky radiation, paceborne photography, electron and ion environ-tental density, and bremsstrahlung 03 p0735 N68-14150 mental density, and bre [NASA-TM-X-60791] Simulated spacecraft cabin and controlled metabolic additions study to determine potential hazard of staphylococci and micrococci to h [NASA-CR-91678] 0 buman subjects 05 p0610 N68-14330 Survey of research papers dealing with fire risks in tygen-enriched environments [AD-665796] 11 p1802 N68-20870 Infection resistance and radiation effects on mice determined after varied exposures to space cabin en-vironment and ambient conditions vironment and ambie [NASA-CR-62065] 12 p1825 N68-22577

space flight mission (NASA-CR-1084)

Mariner 5 spacecri [NASA-CR-95149]

[NASA-CR-83489]

Subsystem definition of adv technology for Mars surface modu [NASA-CR-1083]

INASA FACTS, V. 3, NO. 51

19 p3282 N68-32113

acecraft environ

Space radiation environment effects on spacecraft aterials and components 15 p2550 N68-26130 Space radiation environment shielding /Spares codes for determining radiation dosages on board Gemini 4 and Gemini 6 spacecrafts and in model en-15 p2554 N68-26152 Spacecraft habitability for long duration manned 15 p2561 N68-26702 nental test results 16 p2771 N68-27204 Multi-species life support system based on ecological 16 p2604 N68-27428 Goldized Mylar or Kapton and other materials for planetary vehicle thermal insulation systems
[NASA-CR-95253] 16 p2772 N68-27722 ition of advanced life support 16 p2606 N68-28319 Astronaut life support requirements of oxygen, food, water, waste disposal, temperature control, and atmosphere control for survival in manned spacecraft en-17 p2830 N68-28968

Diffuse bladed specular base louver system for spacecraft temperature control [NASA-CR-95870] 18 p3170 N68-30149 Solar absorptance, emittance, and other properties f cadmium sulfide solar cell and five metals for use on [NASA-TM-X-52457] 20 p3404 N68-33336 Mathematical model for combustion at zero gravity [NASA-CR-86106] 23 p4188 N68-36861 SPACECRAFT GUIDANCE NT SATELLITE GUIDANCE Linear stochastic systems optimal feedback contr rith application to spacecraft minimum fuel midcour guidance problems [NASA-CR-90504] 02 p0193 N68-11862 Markov chain proce res for space guidance and [NASA-CR-91041] 03 ±0358 N68-12011 tial guidance systems 03 p0367 N68-12250 [NASA-CR-86012] orting research and develop-ice and control, engineering Space programs suppo ment in systems, guidan mechanics, propulsio [NASA-CR-91047] 03 p0414 N68-12306 Simulation of linearized optimum guidance law for ELDO launch vehicle injection [RAE-TR-66398] 04 p0533 N68-13081 Solution to stochastic optimal control problem of midcourse guidance of spacecraft with low thrust rocket [RE-309] 04 p0535 N68-13628 Comparison of Atlas-Centaur /Surveyor/ and iteraidance concepts 1 05 p0687 N68-14647 NASA-TM-X-53674] Quasi-optimal control technique for orbital injection NASA-CR-614801 06 p0870 N68-15331 Lunar module backup guidance, navigation and pilot interfaces with control systems during lunar landing [NASA-TN-D-4131] 07 p1022 N68-16836 Computational and display requirements for man computer guidance and control techniques for reusable manned spacecraft [NASA-CR-61554] 07 p0950 N68-16896 07 p0950 N68-16896 Mathematical formulation or olutions for orbital space miss on of guidance equations and solutions for orbital INASA-CR-10101 07 p1083 N68-17215 Orientation, and guidance systems for space flight chicle guidance, and landing aids FTD-HT-23-891-67) 08 p1136 N68-17889 (FTD-HT-23-891-67) Accuracy of simplified onboard midcourse guidance [NASA-CR-70791] 09 p1371 N68-18730 Technological requirements common to man planetary missions, including environments, sys characteristics, aerobraking, and guidance and nav (NASA-CR-73187) 09 p1422 N68-18943 Summary of studies on guidance techniques and con-trol equipment, spacecraft computers, and mathemati-cal methods for optimal control of spacecraft and INASA-TM-X-537091 09 p1423 N68-18983 Analytical methods to determine capability of space vehicle guidance system, and Liapunov functions for stability of nonlinear systems 09 p1371 N68-18984 tical and numerical analysis by spacecraft computers for optimal guidance 09 p1372 N68-18988 Differential equations for governing motion of vehi-cle in uniform gravitational fields 09 p1372 N68-18990 Baseline design and functional requirements Voyager spacecraft guidance and control, compu-and sequencer, and power subsystems, and electric [NASA-CR-93539] 09 p1434 N68-19103 Equations of relative motion and guidance for orbital ansfer and docking maneuvers in spacecraft [NASA-CR-1011] 09 p1424 N68-19186 Mercury/Gemini stability, guidance, and control [NASA-CR-86041] 09 p1438 N68-19250 Trajectory calculations for Venus swingby trajecto-ries, interplanetary navigation and guidance analysis, and inertial platform errors [NASA-CR-61646] 09 p1426 N68-19316 ors applicable to naviga-Observation theory and se tion of boost and space vehicles [NASA-CR-1001] 10 p1590 N68-19676

[ESRO-SP-11]

SUBJECT INDEX guidance system me [NASA-CR-1013] 10 p1591 N68-19985 n approaches to near op-r boost vehicle guidance 10 p1597 N68-20449 iterative and pert timum steering equ (NASA-CR-1007) General perturbations theory applications to spacecraft guidance, flight mechanics, and trajectory (NASA-CR-1008) 10 p1597 N68-20450 Design and function of major components of spacecraft inertial guidance systems [NASA-TM-X-52399] 11 p1737 N68-21238 Methodology used in guidance system performance analysis /assessment/ [NASA-CR-1016] 11 p1783 N68-21442 Navigation and guidance analysis of Mars probe launched from manned flyby spacecraft [NASA-TN-D-4512] 11 p1738 N68-21754 ice model based on Optimal spacecraft guidance nearization of equations of motion ion 12 p1867 N68-22273 Program listings and auxiliary core memory signal dictionary for Apollo guidance computer [NASA-CR-92108] 13 p2035 N68-23771 Optimal stochastic control theory applied to Earth-14 p2233 N68-25233 Gim haled star trackers for satellite altitude control and guidance [NASA-TM-X-59724] 14 p2287 N68-25557 Feasibility and reliability analysis in use of pilots to side and control launch vehicles of Saturn 5 class NASA-TM-X-59113] 16 p2604 N68-27434 NASA-TM-X-59113) Venue flyby, Mars flyby, and Mars orbital mission to evaluate navigation and guidance systems for manned interplanetary spacecraft [RASA-TN-D-4629] 16 p2702 N68-28236 Subsystems of Mariner Venus 67 spacecraft electro-optical cele spacecraft for detern star measurements [NASA-CR-95808]

17 p2912 N68-29444 System design analysis to establish feasibility of using ectro-optical celestial scanning sensor on IMP accoraft for determination of spacecraft attitude by 18 p3111 N68-29707 Voyager spacecraft terminal guidance system analy-

INASA-CR-619091 19 p3372 N68-31201 Application of spacecraft fuel optimal guidance law soft lunar landing to soft lunar land [AGRR-TB-16] 19 p3368 N68-31893

Attitude determina tion of spin-stabilized spacecraft using star mapping technique [NASA-TN-D-4740] 19 p3308 N68-31957 Technological problem areas in developing manned acceraft navigation guidance and control systems 20 p3528 N68-33176

Unmanned spacecraft technology for lunar and plan guidance and control anetary exploration 20 p3528 N68-33182

Strapdown and gimba systems for advanced unmivehicles guidance and control ed spacecraft and launch

20 p3528 N68-33183 Analytical and simulation study of guidance chaigues /visual displays/ for pilot control of tasks anned for Apollo mission 21 p3642 N68-34530

Man computer roles and hardware requirements for avigation and guidance in deep space manned min-INASA-CR-860981 22 p3908 N68-34882

Spacecraft guidance, tri celestial mechanics - conferen [NASA-TM-X-60900] trajectory analysis, and 23 p4169 N68-36785 Classification of spacecraft guidance modes according to approximations involved 23 p4170 N68-36786

Solution for minimum fuel guidance from hyperbolic to circular orbit 23 p4170 N68-36787

Primer vectors and optimum n-impulse trajectories 23 p4170 N68-36790

SPACECRAPT INSTRUMENTS NT SATELLITE INSTRUMENTS

Prototype selection syst tion making 02 p0293 N68-11719 strument package pli [NASA-CR-86008] VASA-Chromosofte for pulse compression acom-Basic categories for pulse compression acom-dications to spacecraft image systems 03 p0322 N68-12320

sers for in-flight calibration of detectors installed in spacecra (NASA-CR-987) 03 p0345 N68-12669

aturn vehicle AS-201 04 p0582 N68-13481 Flight safety plan for [NASA-TM-X-60783] Apollo/Saturn 5 fligh [NASA-TM-X-60782] lan for vehicle AS-301 04 p0582 N68-13482 Spacecraft systems, ission profiles and life

mate spacecruft [NASA-CR-66508] 05 p0612 N68-14889 Spacecraft configur life support systems, at-tion of spacecraft design

primate spacecraft 05 p0743 N68-14896 [NASA-CR-66509] incering, and life sup-orbital experiment 06 p0777 N68-15306

Experimental test mod tape recorder using iso-el-tron beam welded housing [NASA-CR-92550] 06 p0847 N68-15807

Orientation, and guic vehicle guidance, and la [FTD-HT-23-891-67] stems for space flight 08 p1136 N68-17889

Spacecraft attitude de on using single onhoard camera [NASA-TN-D-4359] 09 p1438 N68-19275 Equations and instr ts for determining rocket

[NASA-TM-X-52402] 11 p1698 N68-21235 Design and function spacecraft inertial guidance [NASA-TM-X-52399] of major components of 11 p1737 N68-21238

r flash analyzer 11 p1699 N68-21440 Flight prototype m [NASA-CR-92047] Vehicle instrumer ment development is ment of Scout launch [NASA-CR-66609] ed ground support equipove vertical and roll align

12 p1875 N68-22645 tudies defining Apollo tegration tasks 13 p2155 N68-23586 [NASA-CR-61762]

part 2 [NASA-CR-61790]

14 p2343 N68-24580 Flight instrument package for orption and emission of vehicle

16 p2660 N68-27333 [NASA-CR-61844] Research data on systems a control, spacecraft propulsion, solid and fiquid propellants, and [NASA-CR-95582] nalysis, guidance and aerodynamic facilities telecommunication 17 p2974 N68-29544

Laboratory model of experiment for demonstrating pplicability of adaptive multimode systems concept to scientific spacecraft instru-[NASA-CR-86065] 17 p2974 N68-29547

Conference presentations on optical communica-tion, sensing, and tracking technologies for space appli-

[NASA-TM-X-61037] 19 p3243 N68-31759 Temperature control performance characterist [NASA-CR-96708] instrumentation, and fariner 5 spacecraft 21 p3777 N68-34070

Structural stability analysis Apollo S-4B forward skirt, and buckling modes of instrument unit, and r/Apollo short stack/ 23 p4182 N68-36887 spacecraft lunar mod [NASA-CR-92331]

Feasibility of developing ing system for earth orbiting [NASA-CR-98040] g plasma electron beam weld-ng vehicle 24 p4260 N68-37603

SPACECRAFT LANDING
NT LUNAR LANDING
NT PLANETARY LANDING

Estimating accuracy of spacecraft reentry trajecto

08 p1238 N68-17543 Hydroelastic response of spherical shell upon verti-

cal water impact [NASA-CR-92021] 10 p1606 N68-20108 Control and stability aspecting, and propulsive assist to la: [NASA-CR-946] ets prior to spacecraft land-acting spacecraft 14 p2351 N68-24945

nd future applications in Spacecraft radar present rendezvous and soft landing [NASA-TM-X-60473]

23 p4020 N68-36488 SPACECRAFT LAUNCHING

Equipment, instrumentation, communications, design, launch vehicles, and guidance of scientific 05 p0745 N68-14965 Chronological order of events concerning satellite, scientific sounding rocket, and apacecraft missions tracking, command, and data sequisition facilities [NASA-TM-X-60838] 07 p1084 N68-16193

Hardware, organization, testing, and support equipment for launching of Lunar Orbiter [NASA-TM-X-52405] 11 p1680 N68-212 11 p1680 N68-21239 nching of ESRO 2B satellite to study solar and

cosmic radiation (NASA NEWS RELEASE-68-75) 12 p1970 N68-21925

Launch phase simulator /spac noraft test facility/ 14 p2238 N68-25512

Summarized prelaunch, launch, flight performance, and range information for Atlas Agena 26 Isaunch vehicle for OGO-E spacecraft [NASA-TM-X-60997] 17 p2976 N68-28671

ELDO launch vehicle for com unchings into polar orbita 17 p2978 N68-29511

ulated data on worldwide unmanned and ad spacecraft launchings for period 1957-1967 19 p3372 N68-30903

ESRO 2 launch program operational organization and description of data acquisition and tracking net-work

19 p3372 N68-31121 Launch through m [NASA-CR-963821 aneuver of Mariner 5 20 p3594 N68-33060

al program and space litte launchings 21 p3766 NSS-34081 Progress in ESRO ope

SPACECRAFT LUBRICATION

Experiments and engin lubrication and bearing p [NASA-TM-X-52208] in vacuum of space 10 p1532 N68-19608 Summary information on tubricants and tubrication for use in aerospace environments, and simulation of space environments in vacuum chamber (NASA-TM-X-59570) number 16 p2668 N68-27414

PACECRAPT MANEUVERS NT ORBITAL RENDEZVOUS

Prelaunch early orbit and attitude determinations, and prelaunch analysis for Tiros Operational Satellite B [NASA-TM-X-63002] 61 p0133 N68-10070

Lunar-Orbiter 4 - Method for identifying lunar sur-face photographs, tables of spacecraft maneuvers, edi-ing of tracking data, and mission sequence of events [NASA-CR-66499] 01 p0140 N68-10706

Onboard operations for Gemini rendezvous mimios 05 p0741 N6E-14944

Gemini spacecraft docking system development, design concepts for maneuvering docked vehicle, and docking and undocking flight experience 05 p0744 N68-14945

Optimum time behavior of mass and energy ex-panded during space vehicle orbital transfer [RAE-TR-67267] 08 p1242 N68-18169

Dual mode hydratine system for attitude control and maneuvering propulsion of interplanetary space probe [NASA-CR-93663] 09 p1415 N68-19360

Fuel savings in space number of impulses co multiple impulses [NASA-CR-93770] ce maneuvers by using minimum compared with maneuvers using 10 p1592 N68-20035 alator training using as-

Manned aerospace flight sit tronaut maneuvering unit [NASA-CR-92163] 16 p2603 N68-27201 us docking, and visual

Visual rendezvous, rend docking simulators 21 p3641 N68-34529

SPACECRAFT MODELS

Spacecraft models, preis packages for large astronos [ESRO-TM/P/-69] ch tests, and instrum 04 p0582 N68-13281

Performance, design er rocedures for laborator on and operation text rodel of orbiting pri-[NASA-CR-66510] 03 p0743 N68-14891

Experimental method focal solar irradiation with [SSD-70530R] or quantitatively measuring pacecraft models 09 p1416 N68-18900

d on distorted mod Thermal scale m scory for predicti 14 p2372 N68-25081

OR REAL 19 p3383 Net-32127

solar e

Puli applie space [NAS

Peri signal veyor [NAS

Env

comm subsys [NAS/

Spar cell ca [NAS/

Desi

Stan Voyage faces, a [NAS/

[NASA

INASA

Desig

[NASA

NASA

Effect and spe onic i

NASA

Desig

tion protors in a

Hyper

INASA-

Solar cells, an spacecri

REPT.

Geom

brane so with elec

NASA-

Auxili

Design

CEA-R

iliary ele

Progra sociated mansed s [NASA-6

for space (ESRO-1

(NASA-C

Axial fi

Electro

energy as application

Solar co

TG-950

Char

NAS

roll-up

SPACECRAFT MODULES Assembly and subsystem testing for Mariner Mars cecraft model and advanced planetary mission [NASA-CR-97215] 23 p4168 N68-36632 SPACECRAFT MODULES

NT LANDING MODULES

NT LUNAR LANDING MODULES

NT LUNAR MODULE

NT MARS EXCURSION MODULE Subsystem development and qualification test plan for Apollo applications program combined mission NASA-CR-61787 14 p2350 N68-24554 Payload and module integration development and qualification test plan for combined mission flights of Aporto applications programs [NASA-CR-61786] 14 p2350 N68-24377 SPACECRAFT ORBITAL ASSEMBLY
U ORBITAL ASSEMBLY SPACECRAFT ORBITS

NT INTERPLANETARY TRANSFER ORBITS

NT PARKING ORBITS

NT POLAR ORBITS

NT SATELLITE ORBITS STATIONARY ORBITS TWENTY-FOUR HOUR ORBITS Subroutines for prototype computer program defini-tion for mathematical model of approach guidance system for estimating spacecraft orbit [NASA-CR-90331] 92 p0234 N68-11179 Princi ciples of earth-orbital nav 04 p0574 N68-13084 Period analyses of coordings on Germini a electroencephalogram uring orbital flight 05 p0612 N68-15003 recordings on Gemini 7 pilots du [NASA-CR-91661] CDC 16Q4 compute for Gemini flights ogram for circular lunar or-11 p1786 N68-21792 [NASA-CR-62055] Mission and orbit p er summary for Lunar Orbiter spacecraft flight [NASA-CR-1141] 19 p3372 N68-31477 (RE-337) Control laws for spacecraft or motion and differential equation ing axes relative to inertial coordi ecraft orbits, and equations of equations on charges in rotat-19 p3366 N68-31713

Solving equations of motion to obtain relationship between random crew motions and angular change in spacecraft orientation 19 p3218 N68-32043

Determining spacecraft orbit from optimal trajectory 23 p4165 N68-36142

SPACECRAFT PERFORMANCE

Alouette I satellite ionospheric studies, electrical juipment design and performance, mechanical sign, and environment 01 p0140 N68-10704 Lunar Orbiter 4 m [NASA-CR-66498] ion system performance 01 p0140 N68-10947

Preliminary evalu on performance ion of Apollo 4 spacecraft mission performance [NASA NEWS RELEASE-67-294]

02 p0270 N68-11047 Computer program to determine mechanical shock spectra for analysis of transient flight data in spacecraft

[NASA-CR-91356] 04 p0572 N68-12955 ty analysis for solar electric

Multiple mission capability as spacecraft interplanetary flights [NASA-TM-X-32379] 04 p0572 N68-13017 Surveyor 4 lunar probe mission description and per-

07 p1085 N68-16262 [NASA-CR-92707]

Flight performance characteristics of Surveyor 2 spacecraft and its subsystems [NASA-CR-93490] 09 p1430 N68-18657

Real time and postflight data used for reporting flight performance characteristics of Surveyor 3 spacecraft and its subsystems, including TV equipment and soil mechanic/surface sampler [NASA-CR-93492] 09 p1430 N68-18658

Flight performance of Surveyor 4 spacecraft and subsystems analyses data [NASA-CR-93487] 09 p1430 N68-18659

Flight performance analysis of Surveyor succeraft, including TV equipment and alpha scatter ing device data [NASA-CR-93488] 09 p1430 N68-18660

Surveyor 6 spacecraft flight performance charac-ristics, including data on television equipment, alpha attering experiment, and powered flight translation NASA-CR-93495] 9 p1431 N6E-18661 scattering experiment [NASA-CR-93495]

ring requ of potential manned [NASA-CR-73188] (9) p1421 N68-18851 Equations and inst is for determining rocket NASA-TM-X-52402) 11 p1698 N68-21235 Surveyor 5 minior [NASA-CR-94251] and performance 12 p1971 N68-21934 Analysis of Lunar Orbiter flight problems [NASA-CR-66583] 12 p1972 N68-22641

Systems performance, lunar photography, and launch operations of Lunar Orbiter 3 photographic [NASA-CR-1069] 14 p2350 N68-24738

15 p2477 N68-25735 Design and performat (NASA-TM-X-63222) Systems analyses, exper ormance data on Applica t designs, and per-Technology Satellite

NASA-TM-X-61130) 15 p2563 N68-25934

Design, mission, flight operations, experiment data and subsystem performances for Lunar Orbiter 4 ex-[NASA-CR-1092] 17 p2977 N68-28997

Control system design and analysis, and survey of case histories involving spacecraft dynamic interaction [NASA-CR-86070] 17 p2977 N68-29296

control, and flight path Spacecraft perform analysis of Lunar Orbi (NASA-CR-1109) 18 p3169 N68-29995

Control, performance, and lud tracking Lunar Orbiter 5 18 p3172 N68-30631 (NASA-CR-1142)

Summary data on Soviet manned space flight (FTD-MT-66-139) 20 p3584 N68-32323

nd orbital performance of 20 p3598 N68-33543

OAO success evaluation criteria using satellite obser-ation and orbit lifetime 21 p3770 N68-34266

subsystems, and configurations of spacecraft for Mars mission 21 p3779 N68-34279

Performance and vehicle design concepts for earth orbital logistics spacect (NASA-TM-X-6)2161 21 p3780 N68-34393

traints, configurations, and cost d uprated Delta launch vehicles] 21 p3780 N68-34401 Performance, constra estimates on Delta and [NASA-TM-X-63334]

Description and performance analysis of manned six-pass orbital mission /Mercury-Atlas 8/ [NASA-TN-D-4807] 22 p3964 N68-35022

tflight performance anal-Mission description and p ysis of Surveyor 6 spacecraf [NASA-CR-96992]

22 p3965 N68-35254 echnical data on operating charac-rmance of Mariner 5 Handbook of technical teristics and perform [NASA-CR-97200] 23 p4176 N68-36560

SPACECRAFT POSITION INDICATORS

Technical feasibility and implementation for Satellite Prediction And Display /SPAD/ device [NRL-6694] 24 p4224 N68-37726 SPACECRAFT POWER SUPPLIES

Liquid metal collectors for spacecraft ultra low volt-[NASA-CR-89991] 01 p0005 N68-10173 Design and implementation of radioisotope ther-oelectric generators providing electric power to oyager spacecraft bus VASA-CR-89995] 01 p0139 N68-10371

Voyager spacecraft ([NASA-CR-89995] 01 p0139 N68-10371 Electromagnetic pump designs for use as boiler feed pumps in Rankine cycle, space electric power plants [NASA-CR-911] 01 p0069 N68-10503

Electrode cell tests, and component stress tests of multiphase nondissipative optimum charge regulator [NASA-CR-89990] 01 p0005 N68-10612

Corrosion inhibitors for use in ethylene glycol/water thermal transport fluids in Apollo environmental con-trol and electric power systems [NASA-CR-65775] 01 p0083 N68-10927

Thermally sterilized nickel cadmium battery [NASA-CR-90501] 02 p0163 N68-11804

Requirements and state of art review of thermoelec-ic power generation and materials for space applica-

02 p0164 N68-11891 sed for formation of

Basic building blocks discuss power conditioning systems for sa [TR-1001/2307/-6] 03 p0303 N68-12046 Thermodynamics, electrochemistry and interna-energy losses of operational, satellite nickel cadmius batteries [TG-942] 03 p0303 N68-12150

Design and operational test data on SNAP, and uclear reactor, conversion equipment, and spacecraft ower systems technology

03 p0371 N68-12191 Energy conversion compone cycle spacecraft power systems ents for large, Rankine

03 p0371 N68-12192 Electric propulsion systems and spacecraft power surces, flight mechanics, and mission applications 03 p0410 N68-12193

Block encoder and miniature brushless direct cur-rent motor for spacecraft applications 03 p0323 N68-12326

Development of 100 watt S band traveling wave tube for space applications [NASA-CR-91442] 04 p0486 N68-12998

Sealed nickel cadmium cells subjected to life cycle test to evaluate their use as secondary spacecraft cells [NASA-CR-91289] 04 p0448 N68-13061

Energy requirements of large astronomical satellite components estimated on probable equipment [ESRO-TM/P/-74] 04 p0582 N68-13403

Dispersion strengthened tantalum base alloys for use in advanced space power systems [NASA-CR-72316] 04 p0321 N68-13625 Review of electrochemic chemical power sources for spa-nent of technology transfer pow

05 p0608 N68-14818 [NASA-TM-X-60795] Breadboard three-pha se static switch for space alternating current power (NASA-TM-X-1495)

06 p0815 N68-15649 Equipment, procedures, and methods used in Brayton cycle demonstrator checkout tests [NASA-CR-65924] 06 p0771 N68-15993

Electrical power systems of Surveyor, Syncom, Intel-it 1, Intelsat 2, and applications technology satellites SSD-70049R] 06 p0917 N68-16083

(SSD-70049K)
Acceptance tests of 3.9 ampere-hr sealed nickel cad-mium secondary spacecraft cells
(NASA-CR-92884)
07 p0938 N68-16429 Experimental design and performance test of two-tage axial-flow turbine designed for Brayton-cycle

(NASA-TN-D-4382) 07 p0938 N68-16469 imate cycle lives of

Method for predicting ultim spacecraft batteries from test data [NASA-CR-92883] 0 07 p0939 N68-16705

Spacecraft primary battery containing copper uoride couple with lithium-chlorine tetraoxide ropylene carbonate electrolytes electrolytes 07 p0941 N68-17108 NASA-CR-723311

Annotated bibliography on batteries, fuel cells, ther-ionics, thermoelectrics, nuclear energy sources, and ther direct energy conversion concepts adaptable to space vehicles [NASA-TM-X-60877] 08 pl118 N68-17223

Mass and energy sources for space propellant synthe-sis from spacecraft waste material 08 p1229 N68-17358

Storage cells, machine tools for storage module machining, resistors, capacitors, semiconductors for Nimbus D solar conversion power supply [NASA-CR-92292] 08 p1 119 N68-17546 Colloquium on energy sources and energy conver-

[AGARDOGRAPH-81] 08 p1120 N68-17793 Heat transfer limitations in dyna sion systems for space power plants mic energy conver-

mts 08 p1257 N68-17797 Stirling cycle characteristics for spacecraft power

08 p1121 N68-17801 Working gas selection for closed Brayton cycle tur-accompressor for space power applications 08 p1121 N68-17802

Limitations of solar collectors and receivers for space applications 08 p1121 N68-17804 nequilibrium electron mode for kilowatt range netoplasmadynamic generation of space power

tion of space power 08 p1122 N68-17812

Electrothermal and thermal modes of regeneration in fuel cells for space power applications

08 p1124 N68-17825 Cryogenic fluids for food preservation, coolers, su-perconductive devices, and spacecraft power supplies [TR-0158/3710-01/-1]

09 p1381 N68-18446

e power supply control systems analysis of solar cell array battery [ESRO-TM-54/ESTEC/] 09 p1273 N68-18466

Pulse width modulated switching voltage regulators splied to Maximum Power Point Tracking /MPPT/ NASA-CR-93413) 09 p1274 N68-18503

lysis of electric power, data link, and flight control systems of Surperformance analysignal processing, as veyor [spacecraft [NASA-CR-93491] 09 p1429 N68-18655

subsystems for mann (NASA-CR-73191)

Spacecraft electro

cell calorimetry [NASA-CR-93430] 09 p1274 N68-18709 Design criteria for five element folding arm used in

roll-up solar arrays [NASA-CR-93595] 09 p1276 N68-19021 Standard trajectories and parameters for design of Voyager spacecraft, and performance prediction, inter-faces, and reliability of spacecraft subsystems [NASA-CR-9359] 09 p1433 N68-19097

Baseline design and functional requirements of Voyager spacecraft guidance and control, computer and sequencer, and power subsystems, and electrical

[NASA-CR-93539] 09 p1434 N68-19103

NASA educational facts on present and future elec-tric power sources for space application [NASA FACTS-NF-38] 09 p1277 N68-19128 Design, operating conditions, and problems of gas lubricated journal and thrust bearings for space power turbomachinery [NASA-TM-X-57367] 10 p1459 N68-19606

Charge and discharge cha oxygen cells for spacecraft ap [NASA-CR-93835] acteristics of cadmiu 10 p1460 N68-19913

Effects of surface Mach aur ad specific heat ratio on geom-nic impulse turbine blade nbers, inlet flow angle letric features of super-sections over Mach number range of 1.5 to 5.0 [NASA-TN-D-4422] Design

10 p1460 N68-20276 Design concepts, para-on problems of radioise etric analysis, and integration problems of ra-tors in space mission [NASA-CR-94042] 11 p1741 N68-21204

Hypergolic turboalte or flight-type power system ctrical power supply 11 p1630 N68-21401 to complement luna [NASA-CR-92043]

Solar cells, radioisotope generators, fission electric cells, and thermionic converters considered for Jupiter spacecraft mission 11 p1784 N68-21480

Design studies and efficiency evaluations for five spacecraft thermionic reactor systems [REPT.-68-007] 12 p1902 N68-21856

Geometric properties of expandable whirling mem-brane solar energy concentrator used in conjunction with electrical conversion systems for spacecraft auxiliary power units [NASA-TN-D-4532]

12 p1819 N68-22258 Auxiliary electrode signal for overcharge control of nickel cadmium batterie [NASA-TM-X-63177] 12 p1820 N68-22377

Design and output calculati as for direct conversion thermionic power generator for space application [CEA-R-3418] 12 p1908 N68-22701

Resistojets and other hardware for spacecraft aux-(NASA-TM-X-61074) 13 p2143 N68-23321

Program review on critical areas of technology as-ociated with solar cell battery power systems for manned spacecraft [NASA-CR-94551] 13 p1995 N68-23528

Design and performance trends of electronic circuits for spacecraft power supplies [ESRO-TM-1 [1/ESTEC/]]

13 p1996 N68-24004 Design and perfo of photovoltaic power system on Nimbus 2 spacecraft [NASA-CR-62045] 14 p2190 N68-24455

r for space power plant 14 p2191 N68-24596 Electrochemical research and development - high energy and high power density devices for spacecraft applications

[NASA-TM-X-59782] 14 p2195 N68-25640 Solar cell power systems and stechniques for spacecraft powers [TG-950] d application of control or supplies 15 p2390 N68-26352

Superconductivity, magnetism, and low tempera-res in relation to spacecraft power equipment and (FTD-MT-24-109-67) 15 p2542 N68-26666

Performance characteristic cells for spacecraft, and elect ics of hydrogen oxygen fuel etrochemical techniques for (NASA-TM-X-60277) 15 p2390 N68-26788

Design and test of high voltage power supply for stelling amplication 15 p2443 N68-26882

Materials and techniques used in construction of power supplies for high voltage equipment operating in critical region 15 p2443 N68-26883

High voltage power supply design for operation in itical gas pressure regions and at low temperatures 15 p2447 N68-26909

Radial flow turbines as related to Brayton cycle [NASA-TM-X-52298] 16 p2592 N68-27465

Performance of expandable whirling membrane solar nergy concentrator for space power conversion NASA-TM-X-59872] 16 p2593 N68-27564 energy concentrator for [NASA-TM-X-59872]

Hydrogen oxygen fuel cells, silver zinc batteries, and current tachnology in primary electrochemical apacecraft power systems [NASA-TM-X-59054] 16 p.2594 N68-27684

num Mariner spacecraft solar power system models [NASA-CR-95263] 16 p2594 N68-27974

Power supply subsystems for use on Nimbus satel NASA-TM-X-63245] 16 p2594 N68-28033

Out-of-pile thermionic converter for electric space over supply LA-38131 16 p2710 N68-28223

Comparative analysis of single-loop 100-kilowatt Brayton space power system using pure gas and gas-solid suspension as working fluids [NASA-TN-D-4659] 16 p2595 N68-28280 voltage regulator, and or photovoltaic power

Multiple operating points, volt-ampere characteristics system for Nimbus B satellites [NASA-TM-X-63251] 17 p2810 N68-28709

Effectiveness and improvements of silicon and cad-ium sulfide solar cells studied for space power system [NASA-CR-86064] 17 p2810 N68-28710

Conference proceedings on performance predictions and technological developments for static energy coeversion devices for space missions 7 p2810 N68-28714 17 p2810 N68-28714

Performance prediction on primary hydrogen ox-ygen fuel cells for spacecraft power supplies 17 p2812 N68-28730

Optimum design of spacecraft power supply systems ing fuel cells, and characteristics of energy conversion methods

Germanium solar photoelectric cells for spacecraft power supplies 17 p2813 N68-28738

17 p2815 N68-28747 Eight static and dynamic ener for spacecraft power sources for

rgy conversion systems future missions 17 p2815 N68-28748 ium and pots m as working fluids in Rankine

cycle space power pla [NASA-CR-95616] 17 p2815 N68-28881 Creep test data on refractory metal alloys for use in

spacecraft power supply system [NASA-CR-1115] 18 p3088 N68-29992 Stabilization and control system sensitivity to poweroff failure rate studied by simulated missions using
block power switching
[NASA-CR-86085] 18 p3170 N68-30152

Circuit development for improving low input voltage conversion regulation from primary /radioisotopic fueled thermoelectric generators/ and secondary /bat-

tery/sources [NASA-TM-X-63118] 18 p3005 N68-30197 Radioactive isotopes as sources of heat and radiation ith applications for spacecraft power and propulsion and terrestrial uses in SNAP

18 p3026 N68-30262 Inductor alternators for space nuclear electric power SAN-679-61 18 p3007 N68-30704

Solar cell battery powe strate two and three axis using magnetic and hyster [TG-978] power system of satellite to demon-e axis gravity gradient stabilization hysteresis damping techniques 18 p3007 N68-30713 Operating characteristics of zinc-silver and nickel-cadmium batteries for sounding rockets 19 p3202 N68-30961

Solar and radioisotope Brayton cycle power supplies [NASA-TM-X-52438] 19 p3203 N68-31096

a on canned ac induction mo-ectric power systems 19 p3205 N68-31544 Parametric design data on tors for space nuclear electric [SAN-679-5]

Design, construction, and testing of preliminary 30 watts per pound roll-up solar array [NASA-CR-96230] 20 p3402 N68-32561 Recuperator for cl yton cycle solar energy

inasa-cr-11501 20 p3403 N68-33062

ests for future mannice probe, orbiter, as 20 p3590 N66-33173

SNAP # 35 kW nucle [NASA-TM-X-61161] ctric space power system 20 p3532 N68-33238 Summary on missions for auxiliary electric propul-

sion systems [NASA-CR-96633] 21 p3758 N68-34023

ton engine and 550 W deployable solar array roposed for Black Arrow X3 spacecraft 21 p3778 N68-34172 Cycle life test program on secondary spacecraft elec-trochemical cells [NASA-CR-96645] 21 p3628 N68-34752

Space electrical power systems capable of meeting mission requirement [NSSA-R40-68-5]

22 p3807 N68-35232 Development and testi battery for Mariner 1969 [NASA-CR-97211] improved scaled Ag-Zn 23 p3994 N68-36657

Thermionic power gener spacecraft power supply app [UCRL-70816] n systems analysis for

23 p3994 N68-36908 Solar cell and battery system for Ariel 3 satellite [RAE-TR-68052] 23 p3995 N68-37130

Analytical work during des applied to reliability of power [EV-65-0] ign and tests of hardware supply systems 23 p3996 N68-37358

23 p3996 N68-37401 Spacecraft power research a

Analytical conceptual desi system components in adva potassium, Rankine nuclear 0.25 to 10.0 megawatt range [SAN-679-8] 24 p4198 N68-37438

Performance and reliability system for SNAP 19 with interf [MND-3607-239-1, V. 1] ity testing of power supply terfaces for Nimbus B

24 p4297 N68-38006

SPACE VEHICLE CHECKOUT PROGRAM

SPACECRAFT PROPULSION

NT ELECTROMAGNETIC PROPULSION

NT ELECTROSTATIC PROPULSION

NT ION PROPULSION

NT PLASMA PROPULSION

iation hazards from accidental destruction of nuclear propulsion systems L-TM-1686) 03 p0307 N68-12649 (ORNL-TM-1686)

Bellows configurations design, pressure loss, and vibration tests to minimize pressure drop and improve gas and liquid flow in spacecraft high velocity duct

[NASA-CR-91525] 04 p0565 N68-13484 Limitations of ramjet engines for spacecraft and unch vehicles

04 p0566 N68-13567

Electrical spacecraft propury power sources developmen [GFW-TN-67/6] lsion systems and susilia-ts in West Germany 04 p0567 N68-13649

cecraft, and satellites 05 p0742 N68-13972 (FTD-MT-65-175) Communications, electronics, telemetry, command and control, and systems engineering for advanced

INASA-CR-93204) 08 p1262 N68-17621 Quenched residual rocket motor heat for vacuum

propulsion NASA-TM-X-631241 08 p1231 N68-18066 Environmental control and life support subsystem, communications, electric power, and propulsion obsystems for manned planetary missions NASA-CR-73191] 09 p1274 N68-18698 [NASA-CR-73191]

uterials for use in space Refractory and ablative s propulsion systems [NASA-TM-X-52392] 10 p1585 N68-19833

Sta

Co

Att

Con

SPACE

Mic

NAS

Voy power planet

ment:

Dec

tion p

INAS

Tec

INAS Mar sterili: [NAS

Effe

INAS

heat st

Spa

micro (NAS

Tec

lander strum [NAS

Out

Bibl

NAS.

Ster media [NAS.

Bios steriliz lander [R-68

Mic steriliz asterni [NAS

Stru of usin

(NAS

Effe

SUBJ

Newtons second and third laws for basic concepts of trust, and fundamental design criteria for rocket en-NASA-TM-X-52389] 10 p1585 N68-19834

Potential of various gun geometries fur coaxial plasma accelerators as space propellants [NASA-TM-X-52431] 12 p1948 N68-22389

Prototype propellant leakage detection system for sace flight propulsion systems NASA-CR-92086] 12 p1877 N68-22780 (NASA-CR-92086)

Control and stability aspects prior to spacecraft land-ing, and propulsive assist to landing spacecraft [NASA-CR-946] 14 p2351 N68-24945

Space program research projects on systems analysis and engineering, telecommunications, guidance and control, propulsion, and data systems [RASA-CR-94676] 14 p2349 N68-25601

Usefulness and competitive status of advanced elec-tric propulaion systems for interplanetary spacecraft [NASA-CR-88062] 15 p2545 N68-25679 Trajectory model for calculating planetary flight

TUB-IR-6/1967] 15 p2546 N68-25893

Research data on systems analysis, guidance and control, spacecraft propulsion, aerodynamic facilities solid and figuid propillants, and telecommunication [NASA-CR-95582] 17 p2974 N68-29544

Spacecraft rocket engine chamber insulation materials - silica fabric/molybdenum foil allyer, carbon fabric/lastialum foil, and fine tungsten powder in holtow zirconta microsphre matrix.

[NASA-CR-96447] 20 p3578 N68-33164

Power supplies for spacecraft electric propulsion [NASA-CR-96819] 21 p3759 N68-34418

Voyager and Mars Excursion Module baseline mission and stage analyses - spacecraft propulsion [NASA-CR-96988] 22 p3953 N68-35592

Power system design for Jupiter solar electric propul-

[NASA-CR-97196] 23 p3993 N68-36500

SPACECRAFT RADIATORS

Computer routines for various space radiator and ther thermal/fluid flow problems 01 p0035 N68-10739 [NASA-CR-65741]

Design and perform ance of flat and curved radiators tric power sources of spacecraft 06 p0924 N68-15042 [REPT.-5-39]

Weight, heat transfer, and efficiency comparison for Rankine cycle space radiators constructed of three dif-ferent finned tube geometries [NASA-TN-D-4411] 07 p1094 N68-16324

07 p1094 N68-16324 Effect of finned-tube a ably techniques on heat

transfer characteristics of space ra [NASA-TM-X-1557] 11 p1806 N68-21704

Rectangular radiating fins and trapezoidal fins for cooler-radiators in space apparatus 12 p1983 N68-22557

Comparative analysis of single-loop 100-kilowatt Brayton space power system using pure gas and gas-acild suspension as working fluids [NASA-TN-D-4659] 16 p2595 N68-28280

Radiator concept based on capillary retention of guid and potential extraterrestrial applications rial applications 16 p2595 N68-28310 liquid and potential ex [NASA-TN-D-4370]

Computer programs for steady state thermal design calculations on space radiators 19 p3383 N68-30884

SPACECRAFT RECOVERY

Spacecraft recovery by low cost, lightweight gyrogliding reentry vehicle called space rotor 08 p1244 N68-17652

Launch window, flight perform ace, and recovery procedures for biosatel NASA-TM-X-61078)

13 p2155 N68-23401 Rotary wings for recovery of ELDO launch vehicles 15 p2563 N68-25849

Resources requirements and cost analysis for Removated Command Module /RCM/ using Block 2 recovered Apollo vehicle and RCM laboratories using Block 1 or Block 2 Apollo vehicles (NASA-CR-92138] 15 p2769 N68-27892

NASA-CR-72170; Computer program technique fo apportunities for recall of spacocra involve or elliptical or nique for determination of pacceraft to multiple landing sites from circula [NASA-TR-R-259] 18 p3112 N68-30126

Service manual for Capache payload recovery stem for sounding rockets of Nike-Cajun and Nike-Apache class [NASA-TM-X-63277] 18 p3002 N68-30228

Climatological charts to determine effects of seteorological environment on site selection for earth orbital recovery operat [NASA-TM-X-61227] 21 p3718 N68-34433

SPACECRAFT REENTRY

Raytheon 440 computer for simulation of spacecraft reentry simulation [NASA-CR-65789] 01 p0033 N68-10209

Error analysis of hybrid simulation for six degree of freedom equations of motion for spacecraft reentry [NASA-CR-65785] 01 p0136 N68-10701 Catalytic efficiency calculations for surface heat flux and heat transfer during atmospheric reentry [NASA-CR-91388] 04 p0594 N68-13179

Probability distribution function for impact latitude of satellite combined with injury probability and population distribution to compute probabilities of injury [DOUGLAS PAPER-4736]

07 p0951 N68-17067

oupheric reentry using Spacecraft control during at riable structure automatic sy 12 p1965 N68-22223

Simulated planetary atmospheres for studying radia-tive and convective heat transfer on vehicle entering NASA-CR-94317] 12 p1982 N68-22230

Program and report reviews on launch vehicle upper ages and propulsion of advanced reentry spacecraft ed reentry spacecraft 12 p1973 N68-22992 stages and propulsion [NASA-CR-94397]

Deorbiting of satellites along specified ballistic [DOC.-67SD252] 13 p2154 N68-24331

Motion theory for mobile in central gravitational field with tangential thrust applied to ballistic at-(DLR-FB-68-12) 14 p2347 N68-25155

Gradient techniques for optimizing control system plied to satellite reentry problem RAE-TR-67263] 18 p3168 N68-29598 (RAE-TR-67263)

Interplanetary and space navigation communicati ith emphasis on spacecraft atmospheric reen FTD-HT-67-287] 22 p3960 N68-35492

SPACECRAPT RELIABILITY

Assessment of environmental engineering and testing methods used in development of various spacecraft [NASA-TN-D-4181] 01 p0138 N68-10192

Program control methods for reliability of Apollo spacecraft systems [NASA-TM-X-60662] 02 p0217 N68-11527 Ground network support, trajectory and guidance, nd spacecraft flight operations for galactic Jupiter

NASA-TM-X-63149) 10 p1497 N68-20036

Hardware configurations and integration of 23 scientific experiments into Apollo Applications Program mission AAP-1A [NASA-CR-61785] 14 p2343 N68-24575

Requirements and costs for long-life military pacecraft, and application of reliability specifications Initial Defense Communication Satellite Program /IDCSP/ [TR-0158/3525-15/-1]

15 p2564 N68-26726 Maintainability of manned spacecraft for long dura-

tion flights [NASA-CR-1108] 20 p3594 N68-33008 Economics of reliability improvement for space 23 p4175 N68-36373

Checkout systems for satellites with scientific 23 p4065 N68-37218

Adhesive repair system for application in weightless (NASA-CR-98003) 24 p4261 N68-37901

SPACECRAFT RENDEZVOUS U SPACE RENDEZVOUS SPACECRAFT SHIELDING

System requirements for thermal control coatings for spacecraft [TR-0158/3250-20/-2]

04 p0593 N68-12954 Flight test and evaluative case of elastomeric shield mafur Apollo command module [NASA-CR-91372] re data relating to design and materials for thermal shield

04 p0525 N68-13047 ned spacecraft radiation Magnetic shielding for man 04 p0573 N68-13074 FTD-HT-66-4401

Heat transfer, and thermal control characteristics of diffuse bladed lower system for spacecraft [NASA-CR-92591] 06 p0928 N68-16049

s of m n for Jupiter probes 11 p1784 N68-21479

(NASA-SP-169) 15 p2550 N68-26128

Electron transport study in thick targets to determine ielding effectiveness of spacecraft components raft components 15 p2551 N68-26138

Parametric technique for de tron dose in spacecraft radiation nining primary elec-15 p2552 N68-26143

for high energy nucleon rt in spacecraft radi 15 p2532 N68-26144

id center of sphere dose cals for spacecraft radiati shielding research 15 p2553 N68-26145

diation environments and transport techniques as ed to spacecraft radiation shielding and detection 15 p2560 N68-26153

[NASA-CR-61640] 16 p2733 N68-26973 Computerized thermal control data retrieval system for satellite protective coatings [AFML-TR-67-353]

16 p2799 N68-27069 Polymeric ablators with low irradiation and particle missivity used as protective coatings for space vehicles

16 p2687 N68-27241 [PIBMRI-1385-67]

Nuclear reaction cross section data for spacecraft sield design, and for determining radiation dose effect INASA-CR-852011 17 p2922 N68-28333

e extraterrestrial radiation dose tion manned space flights, and ng criteria 17 p2817 N68-28500

Thermal spacecraft shielding for aerodynamic heating during reent [TRANS-2602] 18 p3171 N68-30566

SPACECRAFT STABILITY

Mathematical models and approximation methods for solving lateral vibration modes of cylindrical space vehicles and vehicles with clustered tanks [NASA-CR-935] 01 p0141 N68-10231 01 p0141 N68-10231

Stability analysis algum state of OAO contro [NASA-CR-73164] m for estimating equilibri-04 p0584 N68-13613

Synthesis of opti-stellite stabilization ptive control system for 06 p0820 N68-15596

Control and stabili [NASA-CR-61545] or p1087 N68-17197

Technical state of design an radient stabilization syst schoology satellites n and development of gravity systems for applications [NASA-CR-92713] 07 pi087 N68-17213

Simple processors of star tracker commands for sta-bilizing inertially oriented satellite [NASA-TN-D-4490] 09 p1373 N68-19236

Analysis of motion and nected gravity gradient sate ity of multiple con-10 p1599 N68-20025

and thermodynamic mission spacecraft 11 p1785 N68-21482

FORTRAN 4 computer of orbiting a gram for stability criteria ical observatory coarse pointing mode [NASA-CR-73166] 12 p1844 N68-21899 haracteristics of large

Subsonic dynamic conical spacecraft in a [NASA-TN-D-4558] fartian environment 12 p1972 N68-22301 External perturbing mom-vehicle having flywheel with ts and stability of space 12 p1972 N68-22354

Dynamic stability of th plications to space vehicl [NASA-CR-949] d clastic shells and ap-13 p2159 N68-23453 Launch vehicle flight o

system and relation to stability requirements a [NASA-TM-X-53735] 14 p2351 N68-24934

prior to spacecraft land-ding spacecraft 14 p2351 N68-24945

[NASA-CR-93695]

Optimization of weight and exhaust velocity of elec-rostatic propulsion systems for stabilizing satellite or-Formulation of planetary quarantine standards and salytical techniques related to heat sterilization of NASA-CR-94135) [DLR-FB-67-87] 14 p2338 N68-25302 11 p1637 N68-21659 Limit cycles and stability of three-axis space vehicle othing procedures for entry ion assembly development (NASA-CR-61847) 16 p2769 N68-27962 [NASA-CR-94383] 12 p1828 N68-22517 Stable equilibrium or n of spacecraft contain-Quality control program p sembly development laborator [NASA-CR-94384] ing momentum wheel [TN-1967-16, REV. 1] 18 p3172 N68-30753 12 p1828 N68-22518 Conference on spacecraft with relative rotation between two structural members for attitude stabiliza-tion and control - theory and design of nutation dam-pers in multiple axes control system [TR-0158/3507-01/-16] test requirements and on assembly development (NASA-CR-94341) 12 p1828 N68-22519 emical residues of al subassemblies af e mechanical training 20 p3595 N68-33527 Attitude stabilization and control of dual-apin spacecraft INASA-CR-943721 12 p1824 N68-22520 Capsule mechanical trubeystem locations subje ing model assembly and d to handling contamina-20 p3596 N68-33528 Vincous fluid filled ring as nutation damper for spin stabilized spacecraft tion, and bioassny sam (NASA-CR-94371) 12 p1829 N68-22521 20 p3596 N68-33533 Disrupted vertical microbial burden of h [NASA-CR-94339] downflow effect on bassemblies 12 p1824 N68-22522 Angular accelerometer and hydrazine thrustor for station control of spinning spacecraft ecraft 20 p3597 N68-33536 on capsule mechanical Estimating microb training model subsy [NASA-CR-94338] Sampled data controlled despin system for dual spin spacecraft attitude control 12 p1824 N68-22523 20 p3597 N68-33539 Biomay coupon le training model subame [NASA-CR-94370] Performance of dual-spin zero momentum spacecraft attitude control system d monitoring plan 12 p1829 N68-22524 20 p3598 N68-33545 microbiological assays Procedures for pr Computerized simulation of nonequilibrium condi-tions for spacecraft attitude control systems analysis 22 p3850 N68-34813 12 p1825 N68-22635 ical germicis ination agents for SPACECRAFT STERILIZATION spacecraft sterilizati [NASA-CR-94380] 12 p1825 N68-22680 Microorganism decont gram for AIMP-E spaceer [NASA-TM-X-63000] tion and sampling pro-Procedures for preparis g cleaning and germicidal 01 p0006 N68-10033 nmaries on spacecraft moelectric generators, ncy, and data manage-Voyager project study owered by radioisotope (NASA-CR-94381) 12 p1825 N68-22682 anetary quarantine, Sterilization and vactual heat shield materia [NASA-CR-66337] osure effects on poten-anned Mars missions 13 p2088 N68-23404 [NASA-CR-89994] 01 p0139 N68-10370 Decontamination, clean on procedures for electr Mathematical mo erilization violation probability of spacecraf NASA-TM-X-55997) tary lander (DOC.-678D313) 01 p0040 N68-10917 14 p2344 N68-24721 Techniques, solution tamination of AIMP sp [NASA-TM-X-55999] ties used for decon-Research project on spacecraft sterilization and planetary q [NASA-CR-94806] 01 p0140 N68-10941 15 p2396 N68-26293 Mathematical model calculating terminal Abstracts of Soviet literaclosed cabins, exobiology, apother aspects of bioastronautic [ATD-68-76-108-3] re on weightlesaness, ecraft sterilization and sterilization process (NASA-CR-90424) 02 p0271 N68-11368 bibliography 15 p2398 N68-26845 Effects of ethylene oxide-Freon 12 decon Techniques and spacecraft sterilizatio [NASA-CR-95228] ntation for Apollo bial bioastays 16 p2598 N68-27647 spacecraft polymeric [NASA-CR-90429] 02 p0225 N68-11474 Effects of microbial load dis tion on spacecraft rer 35 spacecraft 16 p2640 N68-28311 Clean room facilitie [NASA-TN-D-4577] 03 p0305 N68-12310 Dry heat sterilization nd lunar data system riments on bacillus spores gn for meeting planetary Spacecraft sterilization booms, decontamination, s ography covering clear ilization methods, and (NASA-CR-95705) microorganism detection [NASA-TM-X-63054] 17 p2826 N68-29316 04 p0450 N68-12946 Microbial deconts for Anchored Inte /AIMP-E/ spacecraft Techniques for sterilizal landers to prevent contar strumentation, tests, and p [NASA-CR-91343] nd sampling program Monitoring Platform of planetary probes and tion of exobiological inry biospheres 04 p0574 N68-13079 17 p2826 N68-29344 and recovery of remaining heat cycle sterilized sur-Outline of spacecr [NASA-CR-91668] 05 p0609 N68-14221 17 p2826 N68-29346 Bibliography on planetary quara growth, detection, identification, a spacecraft fabrication [NASA-CR-91805] 05 p arantine - microbial and monitoring in nation and heat sterilization cycles [NASA-CR-97343] 05 p0612 N68-14807 24 p4215 N68-37749 Sterilization and storage compatibility of growth media for extraterrestrial use [NASA-CR-73173] 06 p0774 N68-15784 SPACECRAFT STRUCTURES us of third stage engines of Bioassay, ultraclean handling, and terminal heat terilization studies on technology feasibility planetary 01 p0140 N68-10668 for prediction of map structures by geometric ic shells of revolution 05 p0750 N68-14584 lander spacecraft [R-68-2, V. 4] 07 p0943 N68-16307 of operations in two boratories for spacecraft Simulated meteoroid high velocity impact damage to spacecraft structures composed of two metallic sheets [NASA-CR-915] 05 p0743 N68-14638 07 p0983 N68-17102 Structured model using loss functions to assess risk of using given decontamination procedure on all Marems of spacecraft and Structural strength p

(SUDAAR-328)

[NASA-CR-94312]

09 p1365 N68-19430

ctives, microbial death

10 p1610 N68-20544

e oxide decontamination raft polymeric materials 12 pl 894 N68-22344

d for static structural analyses on shell-type spacecraft stru [NASA-CR-912] 14 p2356 N68-24802 m data from flight 14 p2362 N68-25484 NASA-TM-X-600691 16 p2772 N68-27470 [AFAPL-TR-68-17] Proposed modu for S-4B Workshop 16 p2625 N68-27918 construction of com-applicable in develop-16 p2784 N68-27923 16 p2784 N68-27928 Zero gravity simulation me design and procedures determ 023 space structure experimen ods and applications in nation for D-021 and D-16 p2785 N68-27931 Requirements and role of extravehicular activity /EVA/ in deployment, assembly, and maintenance of in-space erectable structures during earth orbital mis-16 p2773 N68-27934 Development, fabrication, and testing of deployable lar array for spin oriented spacecraft applications 16 p2594 N68-27942 17 p2976 N68-28699 19 p3372 N68-31216 n coatings for them control of spacecraft [NASA-CR-66695] 23 p4185 N68-36113 PACECRAPT TELEVISION
NT RANGER BLOCK 3 TELEVISION SYSTEM
NT SATELLITE TELEVISION Apollo video signaritio environments 07 p0962 N68-16506 of propulsion system, adar altimeter, and television system of Surve [NASA-CR-93494] 09 p1430 N68-18656 Science experiment raging equipment, one for studying M Voyager spececraft atmosphere and surf [NASA-CR-93538] 09 p1436 N68-19157 nis of photoimaging plac coverage of Mars systems for optimal during 1973 Voyage [NASA-CR-94669] 09 p1344 M48-19162 Ruggidized Marin sistance to high impa [NASA-CR-93676] 09 p1345 N64-19320 systems for transmitting me from deep stace 13 µ2025 N68-23195 Ranger, Mar Optical imaging sys urveyor television 19 p3280 N68-31764 Image correlation plied to data acquisit [NASA-CR-86094] 21 p3659 N68-34272 d monics of lunar our face transmitted by S [NASA-CR-97213] 23 p4169 N63-36461 ACECRAFT TRACKING NT SATELLITE TRACKING Radar data analysis for data recording in spacecraft [NASA-TM-X-63003] 01 p0027 N68-100 Decoupled shifting a tracking of space vehicl (ELDO-TM-F-5) filter method for rui 01 p0032 N66-10060 od for tracking and acco-n orientation angle of marking from spacecraft

02 p0180 N68-11266

Liq troch ventio (NAS Swi four e Ger

Nor teristi

(RAE

trodes [RAE

Q-at

CER

Dire

[AFCI

Test trode s (IPP-4)

Presi crowbs (IPP-4)

bank is (IPP-4/

SPARK I

Deter of detor [RTS-4

SPARK N

molds,

PARK S

SPARKS

SPATIAL

U ELI

Spatia nuclear (TID-23

Dynas spatially (ANL-7

PATIAL

NT ST Effect

ze dist

[NASA-

Effects

Shield

reactor [LA-DC-

Spatial metals wi (NASA-T

Ele

SUBJ

SPARK

Relationship between information between scintilla-tion counter data and laboratory spatial coordinates for spark chamber experiments [LNF-67/62] Spark and bubble chamb ments in high energy physics [UH-511-11] er programs and experi-03 p0391 N68-12452

ter controlled data reduction of spark [UCRL-17695] 08 p1181 N68-17964

Corrugated electrode spark detector for high temperature s [TID-24212] 11 p1697 N68-21084 Electroproduction of ultiple meson in spark

chamber experim [DESY-67/41] 12 p1942 N68-22961

Differential cross sections of pi meson and proton lastic scattering in diffraction peak region /apark hamber measurements/ 14 p2313 N68-25116

Secondary maximum is ing measured in spark cha proton elastic scatter-

14 p2314 N68-25152 Pion-proton high energy reaction analysis by means of alpha heavy plate spark chamber [CEA-R-3209] Cylindrical spark counters, and observed muon air

14 p2258 N68-25231 Cross sections for photoprodu electron positron pairs from carbo action of high energy

on 15 p2516 N68-26048 Spark chamber neutron spectrometer design and

(SRS-TR-3148) 15 p2469 N68-26620 dy of meson decay to

Bevatron apark chamber stu-positive charged particle plus gas [MIT-2098-389] 16 p2718 N68-27056 ring spark chamber and

Computer system for mean bubble chamber film [SLAC-81] 16 p2629 N68-27983 Transistorized control circuits for spark chamber film scanning instrument [NP-TR-1651] 17 p2884 N68-28862

Digitizing system for magnetostrictive spark cham-

[UCRL-17938] 17 p2859 N68-28984

on line type large digital spark chambers 17 p2869 N68-29323 (BNL-12362) Coumic gamma ray detector with scintillator and dicon spark chamber in high altitude balloon in

search for celestial gamma ray s [NASA-CR-95736] 17 p2964 N68-29434

ummingbird automatic film digitizer for analyzing icle tracks on bubble and spark chamber film AC-82] 18 p3079 N68-30749

Spark chamber gamma ray spectrometer used to find meson to gamma gamma branching ratio ching ratio 19 p3325 N68-31119

Modular electronic data acquisition etostrictive readout of wire spark cha on system for mag-

[RHEL/R-157] 19 p3248 N68-31572 High energy experiments using spark chambers and

bubble chambers (COO-1195-124) 19 p3334 N68-31746 High voltage generator for wire spark chamber pulsing using hydrogen tetrode thyratrons [CERN-68-26] 20 p3456 N68-32809

Vector analysis of kaon decay secondary emission easured in spark chambers 21 p3740 N68-34328

Bevatron and spark chamber measurements of neutron-proton scattering from 6 to 30 GeV/c 22 p3924 N68-34992

Spark chambers for imaging X emitters or gamma rays and their medical applications [CEA-R-3320] 22 p3813 N68-35762 22 p3813 N68-35762

alloon-borne spark chamber experiments for nic ray detection 22 p3957 N68-35892

Bevatron spark chamber study of positive kaon decays at rest [UCRL-17887]

23 p4122 N68-36878 iplexing method for data storage and setostrictive spark chambers 23 p4063 N68-36964 Delay line m display from mag (UCRL-17623)

Kaon decay expe and spark chambers [COO-1749-4] nt design using synchrotrons 23 p4134 N68-37229

PARK DISCHARGES U ELECTRIC SPARKS

contours for satellite tracking antennas [NASA-TMX-63038] 02 stranger specials

Lunar specular reflection studies including possibili-es for optical tracking of lunar satellites, transmission reflector data, and analysis of lunar surface flashes tracking of lu [D1-82-0648] 04 p0577 N68-13486 Data smoothing technique for parameter optimiza-tion in free flight orbit vehicle-borne tracking systems [NASA-CR-91809] 05 p0739 N68-14733

General equations for standard deviation, and rms standard deviation of least squares fisted polynomials applied to Apollo tracking problems [NASA-TN-D-4121] 07 p0977 N68-16749

Summary of radar radio, and optical spacecraft tracking techniques [NASA-TM-X-32400] 10 p1496 N68-19829 lonospheric effects on telemetry and tracking signals

from orbiting spacecraft INASA-TM-X-631521 10 p1497 N68-20043 Effects of time, frequ y, and tracking station location errors on accuracy of trajectory analysis [NASA-TN-D-4507] 14 p2347 N68-25271

Reentry physics studies, ELDO activities, weapons evaluation, upper atmosphere studies, tracking, and equipment and technique development at Weapons Research Establishment in Australia

16 p2638 N68-27713 Laser applications in the fields of optical radar, space ommunications, industrial application, and space

tracking and navigation [NASA FACTS, V. 3, NO. 6] 17 p2897 N68-28949

Evaluation of errors in system for European space programs 19 p3306 N68-31124 m of errors in space detection and tracking

Tracking and data acquisition report for Mariner Mars 1964 mission - cruise to post-encounter phase [NASA-CR-93989] 19 p3240 N68-31419 Computer simulation investigation of control and tracking problems associated with optical communication systems for deep space probes [NASA-CR-86090] 19 p3242 N68-31730

Nike-Ajax system and Real-time Automatic Digital Optical Tracker /RADOT/ multimode telescope for spacecraft tracking and communication cecraft tracking and com

19 p3243 N68-31761 Functional capabilities and physical arrangement of receiver exciter subsystem in unified S band Apollo communications and tracking ground station system [NASA-CR-96384] 20 p3438 N68-33162

Description and test evaluation of prototype laser satellite tracking system [NASA-CR-96739] 21 p3701 N68-34735 21 p3701 N68-34735

Postflight tracking system measurement error valuation using regression analysis for Apollo Saturn 18 flight tests (NASA-TM-X-53756) 23 p4024 N68-37384

Surveyor 7 post-landing tracking data analysis, and determining selenocentric location of probe and geocentric locations of tracking stations 24 p4344 N68-38255

SPACECRAFT TRAJECTORIES

NT EARTH-MARS TRAJECTORIES

NT EARTH-MOON TRAJECTORIES

INTERPLANETARY TRAJECTORIES LUNAR TRAJECTORIES

MOON-EARTH TRAJECTORIES

Generalized Kepler approximation and iteration procedure corrections for spacecraft trajectory and relative coordinates representation 04 p0576 N68-13355 velocity coordinates re [NASA-TT-F-11387] Perturbation effects of Jupiter moons on passing

spacecraft trajectory (NASA-TM-X-63060) 04 p0577 N68-13610

Two body problem for satellite guidance, flight mechanics, and trajectory optimization analyses [NASA-CR-1002] 05 p0735 N68-14089

Techniques for com tructing algorithms used in data 06 p0912 N68-15706 NASA-CR-92598)

Entry guidance equa ss, reference trajectories, and NASA-CR-10131 10 pl591 N68-19985

Error elimination in velocity of light observability for spacecraft trajectory estimation problems [NASA-TM-X-61090] 13 p2150 N68-23585

Digital attitude simulation computer program for mulating trajectory and attitude motion of earth or-15 p2561 N68-26623

nts on extreme rocket ation analysis 17 p2969 N68-28843

Research data on systems analysis, guidance and control, spacecraft propulsion, serodynamic facilities solid and figuid propellants, and telecommunication [NASA-CR-95582] 17 p2974 N68-29544

Mathematical means for bounding propagated trajectory error induced impulsive initial error in abody field [NASA-TN-D-4511] 19 p3371 N68-32094

Matrix equations to describe motions of spacecraft consisting of interconnected rigid bodies [NASA-TN-D-4749] 20 p3603 N68-33092

FORTRAN 4 orbit determination program system for estimating space vehicle trajectories from various tracking data for costflight analyses [NASA-CR-96322] 20 p3591 N68-33361 20 p3591 N68-33361

Jupiter gravity assist for interplanetary spacecraft [NASA-TT-F-11880] 22 p3960 N68-35541

Pulse, special, and slip mode operations of dynamic flight control problems [FTD-MT-24-224-67] 22 p3806 N68-35557 Digital computer program for determining tropo-spheric and ionospheric Doppler frequency errors [DLR-MITT.-68-15] 22 p3871 N68-35648

SPACECREWS

Identification of medical supplies for manned space [AMD-TR-67-1] 02 p0166 N68-11325 Medical support program for crew health and per-formance requirements in manned space flights of long 05 p0609 N68-14206 [NASA-CR-91806]

Onboard operations for Gemi ni rendezvous mission 05 p0741 N68-14944 Analytical study of crew motion on dynamic environ-ment of orbiting laboratories [NASA-CR-61366] 10 p1595 N68-20358

10 p1595 N68-20358 tusoidal motion effects on crew performance during space flight [NASA-CR-92211]

19 p3214 N68-31101 Mission requirements, maintenance and repair constraints, and crew capabilites for 690-day planetary flyby mission [NASA-CR-73236] 19 p3371 N68-32160

Comparative weight and power characteristics of life support systems for spacecraft crews [JPRS-46173] 20 p3411 N68-32901

Technological problem areas in developing manned spacecraft navigation guidance and control systems 20 p3528 N68-33176 Biological and physicochemical reaction systems for regenerative food supply of space flight crew [NASA-TM-X-61201] 21 p3636 N68-34494

NT AIRCRAFT APPROACH SPACING Tests for monotone failure rate based on normalized

06 p0863 N68-15517

SPADATS [TRACKING SYSTEM]
U SPACE DETECTION AND TRACKING
SYSTEM

Corrections to longitude and latitude of Spanish edetic grid and comparison with compensated grid of European system [PUBL.-57] 14 p2245 N68-24467

Variations in geodetic coordinates of grid vertices by changing ellipsed of reference [PUBL.-59] | 14 p2253 N68-25580

Tables of meteorological and magnetic observations 14 p2286 N68-25634

SPALLATION

Radioactivity induced in construction materials by neutron and protron irradiations and spallation [CERN-67-25] 05 p0721 N68-14979

Proton irradiation of germanium target, and ion exchange chromatography for separating spallation products 13 p2021 N68-24071

SPALLING

Time dependent spalling fracture mechanics from dynamic response to shock waves or impulse loads [BAT-197A-4-3] 18 p3 73 N68-29591 Spalling thresholds of beryllium alloy for controlled spact loads

(UCRL-13339) 18 p3092 N68-30327 Reduction of hazard to flight crews from spall and debris due to ballistic penetration of aircraft [DRI-931-6702-F] 19 p3198 N68-31175

SPARK CHAMBERS

Two-meter streamer chamber development [SLAC-74] 01 p0047 N68-10925

A-1178

SPARK GAPS

Liquid layer solid sample spark technique for spectrochemical analysis of flat metal samples using conventional spark source [NASA-TM-X-1429] 01 p0021 N68-10497 01 p0021 N68-10497

Switching of high curr four electrode spark gaps [INR-823/XVIII/PP] ne generators with 02 p0192 N68-11444

Generation of high voltage impulses by spark gap in-duction current 02 p0194 N68-11884

Nondimensional forms of voltage-current characteristics correlated for wall-stabilized, free burning, and cross flow arcs 03 =0428 N68-12803

Electric arcs rotating in a ular gap using brass elec-[RAE-TR-67089, PT. 5]

04 p0552 N68-12969 Q-switched ruby laser for development of laser trigcered spark gap 13 p2079 N68-23570

Direct current crossed mare electrical discharge character [AFCRL-68-0017] etic field influence on cs of gases 16 p2733 N68-27010

Increasing sensitivity of spectrographic determination of trace eler (TG-230-T548) 18 p3029 N68-30540

tion, voltage and field strength Influence of irradiation, vol radient, and pressure on pul olted two electrode spark gap gradient, and pre volted two electro (IPP-4/55, PT. 2)

20 p3533 N68-32356 trode spark gap with saturable inductance [IPP-4/54, PT. 1]

Pressurized switching unit designed to start and to rowbar turbulence heating experiment [PP-4/52] 20 p3449 N68-32431 (IPP-4/52)

sent for 2.7 MJ capacitor Crowbar system arranger 20 p3450 N68-32534

SPARK IGNITION

Combustion reactions, products, and temperature refluorocarbons burning with fluorine 16 p2796 N68-27787

Determination of minir of detonable gas mixtures [RTS-4519] m energy for spark ignition 20 p3609 N68-32692

SPARK MACHINING

Savings and efficiency in spark machining of dies, olds, and machine tools [FTD-HT-23-766-67] 17 p2894 N68-29071

SPARK SHADOWGRAPH PHOTOGRAPHY U SHADOWGRAPH PHOTOGRAPHY

ELECTRIC SPARKS

SPATIAL DEPENDENCIES

Spatial effects on ner on fluctuation in large nuclear reactors (TID-23946) 01 p0096 N68-10928

Dynamic model for co ol and stability analysis of spatially dependent nuclear reactor systems
[ANL-7322] 10 p1556 N68-19993

Space dependent fast fission ratios, and measure-ments of fission fragment recoil ranges in aluminum 24 p4292 N68-37437

SPATIAL DISTRIBUTION NT STAR DISTRIBUTION

Effect of selected fluid parameters on spatial drop size distribution - fluorescent method for studying microscopic properties of fluid spray [NASA-TM-X-22381] 02 p0200 N68-11610

Effects of microbial load distribution on spacecraft 03 p0305 N68-12310

Shield analysis of Los Alamos molten plutonium [LA-DC-8538] 03 p0378 N68-12636

al, energy, and angular distribution measure-f neutron spectra in water near absorbent 04 p0536 N68-12838

Spatial energy distribution of thermal neuron-co-temperature graphite-water system 04 p0536 N68-12841

tial distribution of plasma density by retraction— wave ray with several frequency components 05 p0724 N68-14138

for electron behavior in metals with impurities [NASA-TT-F-11419] 05 p0730 N68-14879 Higher spatial harmonics of magnetic field in induc-on magnetohydrodynamic generator

07 p1057 N68-16289 atial distrib water lattice of ac-[WAPD-T-2015] 07 p1045 N68-16569

Space and energy distribution of the control of the ution of thermal neutrons in 07 p1032 N68-16883 [UJV-1836]

ents by statistical anal-

09 p1332 N68-18511 ns for 2S states of helium atom and correlation in 1S and 2S states of two-

10 p1569 N68-20097 al properties and ran-

Correlation analysis for spa dom changes in moving pattern [ADP-45] 11 p1691 N68-21465

spectral distribution [NASA-TT-F-11649] 14 p2244 N68-24410

Relativistic spatially h ous cosmological 14 p2348 N68-25377

Synthesizing fluid light mo etic fluid for transducing el esponding spatial transparence nodulator using ferromag-electrical signal into cor-ncy distribution 15 p2507 N68-25789

Spatial distribution of le rgy protons and electrons in earths magnetos; [NASA-CR-89215] 15 p2554 N68-26530

natterns of research and industry 16 p2799 N68-27429 Economic analysis of speedopment in pharmace [NASA-CR-83283]

atmosphere detected by Size dia tion of h Doppler (SR-24) 19 p3303 N68-31432

Q-machine plasma device to determine spatial dis-ribution of magnetically confined, quiescent potassi-[STT-2813-45] 19 p3343 N68-31898

at in reentry vehicle Spatial distribution of rad hypersonic shock layers at a (NASA-TM-X-61224) Spatial di of attack 22 p3976 N68-34873 ervable meteor trails

24 p4340 N68-37581

ory to three dimensions, site spatial displacement expter-type motion 24 p4347 N68-37600 and application to study of fit of four degree of freedom helio

SPATIAL FILTERING

Holography introduction and applications in spatia filtering, microscopy, and interferometry [CEA-R-3256] 07 p0998 N68-16363

Pattern recognition by spatial frequency filtering resulting in low false alarm probability [RAE-LIB-TRANS-1265]

11 p1665 N68-21815 ce of signal averaging

Development and per apparatus for noisy repet 12 p1872 N68-22110

Spatial filtering apper characteristics of reconnu [CAL-VE-2491-0-1] is for assessing quality ince photographs 15 p2466 N68-26103

Applications of coherent light in areas of spatial fil-tering and holography [NASA-TM-X-61024] 18 p3122 N68-29671 Real image display spatial filtering by means of holo-

18 p3033 N68-29768 Vander Lugt technique of pattern recognition by matched spatial filtering of coherent light [NADC-AE-6764] 18 p3124 N68-30441

ge spatial filtering in non-18 p3043 N68-30577 [U-4382]

Optimal filtering and control of time-continuochastic dynamical systems 23 p4035 N68-36368

SPATIAL ISOTROPY U ISOTROPY

SPATIAL ORIENTATION
U ATTITUDE (INCLINATION)

NT HEAT OF SOLUTION

Collective approach technique to determine adynamics of N-particle electron gas including to 02 p0251 N68-11093 Exectronic specific heat, magnetic susceptibility, and hardness of HCP binary transition alloys [AD-660425] tonation on boundary of two

02 p0285 N68-11571

Specific heat and m esbility of dilute solid solutions of yttri [ANL-TRANS-513] 03 p0409 N68-12577

Acoustic velocity in stea m determined by ultracon ationships of specific he ratios with stat [AD-661791] 04 p0544 N68-13164

Specific heat of tin and gal dercooled pure liquid states [TR-14] um in stable and un 05 p0758 N68-14931

Status reports of freezing heat transfer, thermal con-activity, and heat capacity studies of bovine whole or GLR-57] 06 p0773 N68-15526

Transient solidification of flowing liquid on cold ate, including heat capacities of frozen layer and NASA-TN-D-4353]

06 p0926 N68-15742 Heat capacities of lie ear polymers at low teme

06 p0928 N68-15958

on metals up to [CEA-R-3287] 07 p1100 N68-17141 at capacity structures

Reentry tempera for free molecule (SC-RR-67-232) 08 p1254 N68-17254 Infrared radiation me Musivity, heat capacity of determining them thermal conductivity

NASA-TT-F-11453) 08 p1257 N68-17901

ture of pure cer 09 p1298 N68-19218

Debye tempera used in calculatin [MLM-1396] from X ray data and ic properties 10 p1611 N68-19556

of argon and neon in two Thermodynamic proper nensional critical region 10 m1613 N68-20116

Heat capacities for ma alts near critical points

10 p1490 N68-20217 ergy of calcium mag-Specific heat and cohesive easum intermetallic composi-

11 p1644 N68-20611 Specific heat of face co ed cubic and bexas

11 p1766 N68-20670 tical thermodyna es in critical plan s of polyphenyls and heat 11 p1645 N68-20707

ns of liquid belium 3 in 11 p1801 N66-20840

at capacities of lead con-13 p2171 N68-23828

lid iron oxide and alumperatures 13 p2022 N68-24082

for caloric variables of state of various ga 13 p2173 N68-24190

efficients and related pro-icked and body centered 14 p2335 N68-25605

of solid helium 3 14 p2375 N68-25609

specific heat, as 16 p2668 N6B-27362

ster program in FORTRAN 4 for CDC com-acculate specific heat of crystalline solid TME-1666] 16 p2746 N68-28148 puter to calculate sper WANL-TME-16661

pecific heat of sol ed its internal energy, int, expansion coeffi-

17 p2984 N68-28519 rt effects measurement emperature study of elec

17 p2935 N68-28522 s and Hugor

during a

PECTRA

propaga tribution [FTD-1

Gas

Energ

Radio system solar bu [NASA

Balm

ure of

Specifrom et mosphe [WRE-

Effec

intensit beams GeV [DESY

FOR

nalyze

Stati

Fluis

Dire ured l

Con for Be

JUL-

Plas

Dire

EUR

[NAS

Ato high to [NAS

Opt tribut [RAE

Spe tungs (FTD

Kas

Fock

Spe

[NAS

Ele for n

Ek

Al, A

En

APP

NASA

emitted

Airbo earth sp lava in I [NASA

17 p2922 N68-29381 Specific heat, comprespectrum analysis of diat ity, and lattice vibrational tomic gases 18 p3184 N68-29799 Electronic energy band structure of vanadium-iron alloys determined by specific heat, enthalpy, ther-moelectric power, and resistivity 18 p3151 N68-29906 Pressure effects on specific heat of nitrogen and trifluomethane using virial equations of state 19 p3384 N68-31036 Enthalpy and specific heat of fused lime single crystals between 3 deg and 1720 deg C [NRC-TT-1303] 20 p3609 N68-32792 Heat capacity of scandium from 1 to 23 deg K 20 p3570 N68-32879 Crystal field heat capacitic inickel and prasoodymium bism acities of praseodymium 20 p3570 N68-32880 Specific heat and electrical resistivity measurements on rare earth-iron compounds to isolate antiferromag-

20 p3570 N68-32881

Low temperature heat capacities of rare earth metals 20 p3570 N68-32882

Turbojet engine thrust determination using ratio of secific heats [FT-TM-3-68] 20 p3578 N68-33039 Specific heat of antiferromagnetic manganese

20 p3573 N68-33138 Cesium manganese chloride specific heat measured ro magnetic fi

22 p3976 N68-34821 Chromium molybdenum and o alloy specific heat and hall effect m and chromium vanadium

23 p4153 N68-36743 Specific heats of rare earth gallium garnets at low 24 p4329 N68-37529

SPECIFIC IMPULSE

Sudden-freezing criteria and numerical procedures or predicting nonequilibrium flow properties and actific impulse performance of rocket expansion noz-

01 p0147 N68-10116 Periodicity, and time information in nerve impulse of pitch perception IZF-1967-231

Theoretical performance of gaseous fluorine/ drogen combinations at ambient temperature DLR-MITT.-68-08] 16 p2749 N68-28179 hydrogen combination (DLR-MITT.-68-08) Specific impulse calculations on lithium hydride fluoro mixture for lithergol rocket engine [DLR-MITT.-68-07] 16 p2749 N68-28214

FORTRAN 4 programs for calculating inviscid, one-dimensional and assymmetric nonequilibrium nozzle flow flelds and improving analytical predictions of delivered specific impulse delivered specific is [NASA-CR-1123] 20 p3577 N68-32793

Optimum specific impulse for arc heated thermal jet [ORA-68-0005] 21 p3624 N68-33902

PECIFICATIONS

NT AIRCRAFT SPECIFICATIONS

NT EQUIPMENT SPECIFICATIONS

ical procedures for ura nium specifications 03 p0312 N68-12246 [K-L-6] 40] Specifications and perf for Apollo spacecraft nonm [NASA-TM-X-60754] sce test requirements 04 p0524 N68-12874

and analysis of dynamic rehicle component level Requirements specification mulation methods for launch [NASA-CR-61624] 09 p1323 N68-18832

Technical requires ats for liquid rocket propellant AFRPL-TR-67-216) 10 p1583 N68-19977 ecifications for fal of plutonium bearing (ANL-7313) 12 p1911 N68-22855 Large scale air eject [NASA-TT-F-11378] 15 p2448 N68-25777

Specifications for cl suitable for satellite ob [ROE-STS-54] ers with high accuracy 17 p2883 N68-28757 ed orbital observa-

Working specifications tory and telescopic optics 19 p3366 N68-31631

and hard intermediate frequency (NAFI-TR-1208) 20 p3450 N68-32608

Design of 30 watts [NASA-CR-97205] 23 p3994 N68-36618 SPECIMENS

Abrasive mounting materials and alumina for edge retention in preparing metallographic specimens [RFP-1104] 7 p2896 N68-29449

NT NT

ABSORPTION SPECTRA
BALMER SERIES
ELECTROMAGNETIC SPECTRA NT **ELECTRONIC SPECTRA**

EMISSION SPECTRA ENERGY SPECTRA FRAUNHOFER LINES

NT NT NT H ALPHA LINE H LINES

INFRARED SPECTRA

LINE SPECTRA NT LYMAN SPECTRA MASS SPECTRA

MICROWAVE SPECTRA MOLECULAR SPECTRA NT **NEUTRON SPECTRA**

OISE SPECTRA OXYGEN SPECTRA

PHOTOLUMINESCENT BANDS PLASMA SPECTRA POWER SPECTRA NT NT

NT RADIATION SPECTRA RADIO SPECTRA

RAMAN SPECTRA SCHUMANN-RUNGE BANDS NT

SHOCK SPECTRA SOLAR SPECTRA NT SPECTRAL BANDS

STELLAR SPECTRA
TELLURIC LINES ULTRAVIOLET SPECTRA

Methods of recording optical spectra using image in-

tensifiers [AERE-R-5112] 06 p0843 N68-15154 Relations between spectral functions of symmetric ensor current and syn etric axial tensor current cou-

TUEP-67-28] 07 p1039 N68-16203 Experimental determination of oscitation carbon-nitrogen radical violet system 07 p1051 N68-16847

Wavelengths of hydroxyl /7,2/ band in twilight sky

[NASA-TT-F-11573] 16 p2658 N68-28257 Fatigue failure of metals under narrow band random excitation from statistical analysis of random loading

17 p2979 N68-28614 Diurnal variations of ion temperature by Thomson scatter spectra in height range 250 to 475 km [NASA-TM-X-63297] 19 p3274 N68-31888

plitude like quantities 20 p3538 N68-33200 al representation of an

Proton magnetic resons trimeric aluminum isopro ance spectra of dimeric and poxide determined by cominum isopropo bination of cryoscopic olecular weight and proton 21 p3651 N68-34251

Measurement of beta spectra by energy and momen-tum selection 24 p4310 N68-37620

PECTRAL ABSORPTION
U ABSORPTION SPECTRA

SPECTRAL ANALYSIS SPECTRUM ANALYSIS

NT ABSORPTION SPECTRA
NT RAUNHOFER LINES
NT PROTOLUMINESCENT BANDS
NT SCHUMANN-RUNGE BANDS

NT TELLURIC LINES

Spectral, spatial, and temporal variations of outer one electrons from 10 to 100 keV based on Injun 3 satellite observations [NASA-CR-90510] 02 p0263 N68-11797

Ultraviolet absorpt of benzene derivative ption intensities of secondary band res in nonpolar solvents 04 p0470 N68-13536

Band reassignment for aniline and derivatives and effect of steric inhibition of resonance on migration moment of amino groups 04 p0472 N68-13546

Measured and calculated transmission comparisons for rotation band of water vapor [PB-176100] 06 p0788 N68-15514

ption cross sections of electronic hand systems nic nitrogen, oxygen, carbon, nitrogen oxide, son-nitrogen molecules at high temperatures at high temperatures 07 p1051 N68-16845

odels for high temp

08 pl144 N68-18084 Band models for calculating spectral radiances from eous gases

08 pl174 N68-18089 Accuracy and spectral resolu ion of band models and rect integration re broadening n methods, and line spectra with pres

08 pl175 N68-18114 ressure effect and time resolution of helium ecular bands in pulsed microwave plasma 12 p 947 N68-22185

Theoretical line positions and intensity tables for bration-rotation bands of distomic carbon monoxide vibration-rotation be

[NASA-TM-X-63183] 13 p2012 N68-23466 Intensity distribution in OH band of airglow spec-

INASA-TT-F-115711 14 p2247 N68-24773 Survey of infrared properties of carb [ARC-CP-981] 14 p2 of carbon dioxide 14 p2307 N68-24814

Band structure and optical properties of semicon-ductors and insulators

16 p2741 N68-27123 Emission spectra studies of hydroxide radical in vibration-rotation bands, and cyanide radical using in-frared spectroscopy, microwave excitation, and gas

frared spectroscopy, microwa [AFCRL-68-0247] 18 p3019 N68-29806 Molecular spectrophotographic analysis of various

19 p3328 N68-31226 Frequencies and intensities or carrossorption lines between 12 and 18 microns [TR-08183-1-T] 19 p323 encies and inter of carbon dioxide ab-

19 p3230 N68-31805 Band properties of even-even nuclei with small [UCRL-710491 19 p3335 N68-31909

Fokker-Planck equation for finding spectral density of first order piecewise linear systems exited by white

20 p3517 N68-33463 Comprehensive survey of oxygen X ray emission band shift to evaluate soft X ray spectroscopy as tool for characterizing thin layers on metals [TR-2] 23 p4015 N68-37180

SPECTRAL EMISSION

Measurement of internal conversion electron spec-um for radioactive decay of terbium isotopes rbium isotopes 03 p0399 N68-12779 [INP-481/PL] osity, and electron temperature in pulsed heli-

discharge spectrum 07 p1063 N68-16951

bon arc image furnace and photocell detector (IS-1688) m oxide determined car-08 p1255 N68-17326

Spectral emission and radio rocket propellant plumes ice calculations for solid 08 p1259 N68-18093

Beta-gamma polarization o spectroscopic analysis of magn on correlation and gamma ium decay 10 p1567 N68-19871

pectral transmission characteristics of fused silica ore, during, and after exposure to reactor irradia-

(NASA-CR-1031) 11 p1740 N68-21124 Spectral emissivity of highly doped silicon [NASA-TN-D-4303] 11 p1775 N68-21708

Absorption spectrometer for determining spectral emposition of radiation 12 p1918 N68-23031

quivalent temperature valu describing tropospheric magnetic propagation pher es /color temperatures/ and ionospheric elecd ionospheric elec-nena, and terrestrial omagnetic propagation surces of radiated energy 17 p2880 N68-29105

Reflectance technique using carbon arc image fur-nace to find spectral emittance of rare earth sesquiox-ides 18 p3017 N68-29614

Gas mixture and pressure effects on wavelength and and form of spectral Ne line emitted by Ne-He discharge tube 18 p3018 N68-29735

or develope nt for cathode ray tubes to extend spectral emissio [NASA-CR-96002] ncreasing decay rate 22 p3849 N68-35788 X

45

nd

84

19

3

nts on fused silica during and after exposure to pulsed neutron irradiation [NASA-CR-1191] 22 p3912 N68-35826

Airborne filter wedge spectrometer recording of earth spectral radient emittance of desert terrain and lava in 8 to 16 microns range [NASA-TM-X-63373] 24 p4251 N68-37874

SPECTRAL ENERGY DISTRIBUTION

Gas bubble absorption of ultrasonic energy propagating in liquids used to measure spectral distribution of cavitation nuclei in water [FTD-HT-23-510-67] 02 p0199 N68-11385

Energy and angular distributions of alpha particles emitted in some /n, alpha/reactions [INR-814/I/PL.] 02 p0248 N68-11608

Radio Astronomy Explorer satellite radiometer system for measuring spectral energy distribution of solar bursts [NASA-CR-91288] 04 p0506 N68-12859

Balmer emission line widths calculated for fine struc-ture of prominences 05 p0734 N68-14913

Spectral energy distribution for glow clouds resulting from explosion of aluminized grenades in lower thermosphere [WRE-TN-HSA-122]

07 p0992 N68-16778 Effects of target thickness and collimation angle on intensity and spectral distribution of bremsstrahlung beams produced by electrons with energies from 1 to 6 GeV (DESY-67/29)

08 p1211 N68-17221 FORTRAN 4 code for IBM 7094 computer to analyze multi-channel pulse height analyzer gamma photon spectral distributions [NASA-CR-93210] 08 p1214 N68-17731

Statistical band model for calculating spectral dis-tribution of heat transfer from inhomogeneous volume of high temperature water vapor, carbon dioxide, and carbon monoxide

08 p1258 N68-18090 Fluid turbulence energy spectrum in gas solid

11 pl681 N68-20617

Directional spectra of wind generated waves mea-sured by linear array of surface elevation detectors 11 p1688 N68-20889

Construction and operation of blanking generator for Bendix multiplier in time of flight mass spectrometer [JUL-507-PC] 11 p1630 N68-21371

Plasma electron thermalization measurements using spectral distribution of laser light scattered by plasma electrons

12 p1945 N68-22028 Direct harmonic method for identifying linear stems and power spectral density analysis EUR-3734.1] 12 p1908 N68-22679

systems and power spectral den (EUR-3734.1) Approximation of stellar energy distributions and magnitudes from multicolor photometry [NASA-TM-X-63185] 12 p1969 N68-22932

Spectral energy distribution of metal-rich Crasuse-Lovas supernova determined by spectrophotometry [3 p2151 N68-23766

Atomic line intensity tables for ionized iron atom at [NASA-SP-3041] 13 p2129 N68-24161

Optical equipment to measure spectral energy dis-ibution of sun and sky radiation [RAE-TR-67248] 14 p2192 N68-24970

Spectral energy distribution of atoms sputtered from tungsten single crystal by mercury ions [FTD-HT-67-193] 15 p2540 N68-26480

Kaellen-Lehmann spectral energy distribution for Fock space in quantum field theory analysis [JINR-P2-3740] 17 p2939 N68-29273

[JINK-P2-3740] 17 p2939 Non-29273 Spectral distributions of turbulence in plasma with collisional and collisionless dissipations [NASA-CR-87760] 21 p3747 N68-33899 21 p3747 N68-33899 trahlung cross sections,

Electron scattering, bremsstra and spectral energy distributions [NASA-CR-1194] 24 p4312 N68-37708

Electron scattering in aluminum target at 1.0 me for non-normal incidence - spectral energy mapping for non-normal incidence - spectral energy mapping

Electron-bremsstrahlung cross sections for thin tar-gets of Al, Au, Cu, and Sn between 0.2 and 2.5 MeV 24 p4313 N68-37710 Electron bremsstrahlung produced in thick targets of Al, Au, Be, Fe, and Sn at incident energies between 0.2 and 2.8 MeV

24 p4313 N68-37711

Energy distribution of argon positive ions extracted from hot cathode gas discharge ion source [DOUGLAS PAPER-5199]

SPECTRAL LINE WIDTH

Spectral absorption by water vapor to determine line idths, line strengths and band strength U-3704] 03 p0315 N68-12574

Electron correlations in relaxation theory for spec-tral line broadening plasmas [NASA-CR-91284] 04 p0552 N68-1980

Measured and calculated tra for rotation band of water vapor [PB-176100] smission comparisons 06 p0788 N68-15514

drifted silicon and germani ig line widths of 2p-1s trami tions in low-Z pionic (NASA-CR-93178) 08 p1213 N68-17618

Intramolecular cation broadening of electron po (LFEN-79/BETA/) transfer, and exchange netic resonance lines 09 p1298 N68-19197

Astronomical models for computing surface gravity B stars from hydrogen line equivalent widths (ASA-CR-93691) 09 p1428 N68-19398

Stark broadening of ap tral lines in argon plasma fing effects 16 p2736 N68-27559 NASA-TM-X-59416]

Optical intensity correlation to pectral line width from m scharge filtered by interferomet n technique to measure mercury electrodeless 17 p2919 N68-28392

Absorptivity of O2 near Lymi [NASA-CR-95881] n-alpha line 18 p3025 N68-30257 Interpolation tables of spectroscopic data for model hotospheres

18 p3160 N68-30463 Total radiances and equivalent widths of isolated pectral lines with combined Doppler and collision

broadened profiles (REPT.-8416-17-T) 18 p3031 N68-30818 crowave spectral line Spectrometric study of m width in symmetric top molecu

19 p3221 N68-30951 Spectral line formation and a omic models 19 p3328 N68-31229

Perturber radiation effect on electron impact spec-tral line broadening [NASA-CR-96147] 19 p3333 N68-31661

Resonant reflector for narrowing line width of pulsed ruby laser spectrum
[IPP-1/75] 20 p3492 N68-32495

U LINE SPECTRA

SPECTRAL NOISE
U WHITE NOISE

SPECTRAL REFLECTANCE

Lunar surface composition and particle size implica-ons from laboratory and spectral reflectance data -tethod for observing weak spectroscopic absorption

03 p0415 N68-12321 Spectral reflectance measure trol coatings after ultraviolet re [NASA-CR-91351] ements of thermal con-04 p0593 N68-12858

Theoretical analyses of diffuse reflectance spectra ILA-DC-88051 05 p0703 N68-14874

Spectral reflectance and thermal emission of conifer and hardwood leaves under moisture stress [NASA-CR-93175] 08 p1126 N68-17247 sture stress 08 p1126 N68-17247

ptical constants of silver and dilute silver-indic is determined from ultraviolet spectral reflectan transmittance measurements on vacua orated films 08 p1222 N68-17282

Low energy electron irradiation nal control coatings for spectral re (NASA-CR-93973) on rate testing of ther-reflectance properties 11 p1802 N68-20869

Cumulus cloud and fog bank spectral reflectance ob-servations using Nimbus satellites and infrared [NASA-TN-D-4552] 15 p2466 N68-25862

Spectral reflectance measure helium neon laser source, st sphere, lead sulfide detector, generator for specimen heating NBS-TN-439 red by reflectometer with sodium chloride coated or, and radio frequency 16 p2673 N68-27413

er and ellipsoidal reflec-of opaque materials 18 p.3073 N68-29961 Optimization of in tometer to measure ([NASA-CR-73234]

Light transmission, polarization, reflection, and scat-ering in spectral distribution of sky radiation ISR-6] IF p3068 N68-30384 Near infrared spectral refle ctance and scattering in (NASA-TM-X-61036) 19 n3278 N68-31390

Two band models of spectral reflectance and mittance properties of transition metals at infrared avelenable 24 p4324 N68-37922

(RE-338J) 20 p3572 N68-32991 ment data and

ristics 20 p3481 N68-33397

Doubling principle providesults for problem of diffus ing rapid and accuraparallel atmosphere NASA-TM-X-612961 23 p4190 N68-37186

(REPT.-06880-1-F) 24 p4218 N68-38146

SPECTRAL RESOLUTION

me for spark source mass Electrical detection sch IS-T-13991

01 p0066 N68-10875 Theoretical study of ion distribution in focal plane of case spectrometer for improved resolution officiency 04 p0510 N68-13464

08 p1175 N68-18114

on effects on angular rential interferometer 11 p1659 N68-20735 near frequency modulation lution and accuracy of differ [P67-246]

Total neutron cross section beryllium 9 and energy resol [CONF-680307-15] ons of oxygen, sitrogen, and lution of resonances 14 p2311 N68-25047 tion X ray and ga

Hypercryogenic high re (UCRL-17901) 14 p2260 N68-25444 nds and spectral resolu

17 p2835 N68-28352

Relative energy positions and widths of proton and amma ray resonances in aluminum and sodium 17 p2923 N68-28390 rs using optically active

Resolution of optical is elvents and sorbents 17 p2837 N68-28446

Stroke and space resolved slit spectra of lightning [LA-3754-ADD] 22 p3868 N68-33234 SPECTRAL THEORY

Approximation of spectral functions by one and two on contributions TR-6721 01 p0083 N68-10155

Wave equation applied to spectral and scattering theory of electromagnetic fields [MRC-TSR-770] 11 p1744 N68-20654

Spectral theory for rectangular complex matrices [AD-666813] 13 p2091 N68-23154

AD-ocos 131 Spectral theory method for calculating two dimen-onal energy spectrum and length of wind waves 23 p4035 N68-36415

SPECTROGRAMS

Gas turbine vibration analyzer for production of ibration-frequency-spectrograms
04 p0569 N68-13859

Measurement and identification of laboratory produced vacuum ultraviolet spectral lines [NRL-6638] 13 p2126 N68-23781

nergy di 14 p2341 N68-24452

Spatial and temporal Fo field spectrograms of solar p [NASA-CR-94710] yes on velocity 14 p2339 N68-24528

PECTROGRAPHS
U SPECTROMETERS PECTROHELIOGRAPI

Solar active region in Mg 2 light - comparison of Mg 2 filterholograms with H alpha and Ca 2 K spec-REPT.-67-221 05 p0734 N68-13919

Telescopes and spectroheliographs to photograph distribution and intessity of solar magnetic fields [ATR-68/8102/-4] 12 p1872 N68-22125

NASA-CR-943 91 12 p1879 N68-22923 solar cal Spectrohelingram analyse minences by U.S.S.R. observations

13 p2147 N68-23685

13 p2148 N68-23991 nests of small or etic field strength to 20 p3588 N68-32929

Ten for for on pro

[NAS

Spen observ selesce [NAS

Nuc

Mag bombs [JEN-

High ter de

(AFO

EUR

spectr

(TG-2

Spe

Em

neutro (KFK)

Servand stroche

Gar

barius [COO

Des frared metec [PB-1

[NAS

Pub

Spe from (TR-2

Scie probe NAS

Pro

Th

sourc

Tot meast spects [CN/

Fin netic and c [BAR

Lo

BM :

He

tral a

Ge

reacte

Tim

Pro

Intensity studies on calcium-potassium plages and extreme ultraviolet spectroheliographs [NASA-CR-96816] 21 p3773 N68-34762 um plages and Design of spectrobeliograph to detect solar corona [NASA-CR-96785] 21 p3763 N68-34774 phenomena observed by ng Sept. 1968 24 p4339 N68-38007 Tables and graphs of solar p Rome, Italy, observatory during U SPECTROHELIOGRAPHS SPECTROMETERS

NT FABRY-PEROT SPECTROMETERS

NT INFRARED SPECTROMETERS

NT MASS SPECTROMETERS

NT NEUTRON SPECTROMETERS

NT SOLAR SPECTROMETERS

NT SPECTROMETERS

NT SPECTROMETERS

NT ULTRAVIOLET SPECTROMETERS Data acquisition and analysis of crop signatures ob-sined by combined spectrometer and optical-tochanical scanners in agricultural survey NASA-CR-89993] 01 p0063 N68-10268 [UCRL-17560] of zenon 132 Excited levels of [ORNL-TR-1683] ORNL-TR-1339) Portable gamma spectrometer for safeguarding in-entories of uranium 235 contained nuclear fuel ele-[BNWL-508] Sensitive recording nuclear magnetic resonance ul-Iranonic spectro [NBS-TN-344] 03 p0343 N68-12406 ILYCEN-67161 Reference source alpha spectrometers [LA-TR-66-90]

(ASA-car Design and performance of high resonance Design and performance of high resonance OI pools N68-10363 01 p0105 N68-10373 Boron traces in iron and steels determined by 01 p0025 N68-10813 Photopeak efficiencies of sodium iodide /Ti/ detectors for cylindrical gaseous sources [PG-792/W/] 02 p0209 N68-11058 Spectrometer for studying nuclear magnetic resonance absorption in solids [NEL-1471] 02 p0210 N68-11150 High resolution surface shielding silicon detector based on alpha and beta spectrometry [RT/EL/67/1] * 02 p0211 N68-11301 Tabulated gamma ray energy data for use in calibrat-ing high resolution gamma ray spectrometers [AD-660419] 02 p0249 N68-11696 03 p0342 N68-12053 Dipole moment of oxygen-hydrogen radical, incrowave apoctrometer for study of free radicals, fewtonian gravity theory in dyadic notation, and wave repagation in stellar system 03 p0384 N68-12323 Data processing procedures for measurement and acrimination of nuclear spectrometric interfering 03 p0391 N68-12482 es for calibrating semiconductor 03 p0392 N68-12504 Microwave spectroscopy and applications to use of nutral isotopes in place of radioactive tracers NYO-3339-1] 03 p0316 N68-12632 [NYO-3339-1] er measurements of emis-Quartz-prism spectromes on spectra of various therm minescent materials 04 p0560 N68-13694 while focusing magnetic alpha spectrometer (JINR-P13-3340) 04 p0513 N68-13872 ing for high resolution pulse amplitude (hNL-11794) 05 p0660 N68-14210 nance spectrometry of ers under tensile stress 05 p0680 N68-14257 Electron paramagnetic reso free radical formations in polyn [NASA-CR-91804] for serosol density mea-High spood spectromete arements by flying aircraft 05 p0661 N68-14373 eutron diffraction patterns carbide obtained with tri-EUR-3655.E) 05 p0680 N68-14510 ctrometer technique for oner-ndent capture measurements energy in uranium, tungsten, Slowing down time spectrome gy and temperature dependent below 30 keV neutron energy (KFK-631) 05 p0714 N68-14514 fferential gamma specntiflator 05 p0624 N68-14533 Reaction gammas to emitters of high specific activit micros heat sources in space v as for analysis of impurities in alpha specific activity for isotopic power vehicles 05 p0718 N68-14734

Electron data from Applications Technology Satelfite-1 omnidirectional sp [TR-0158/3260-20/-4] 06 p0905 N68-15175 Trajectory optics, magnet requirements for precision optics, composite spectrometers, envelope optics, and beam shaping systems 06 p0885 N68-15802 Fast coincidence beta spectrometer with triangular saped magnetic field [JINR-P13-3437] 06 p0848 N68-16086 Source of reference signals for spectometric scintilla-tion counters based on electroluminescent diodes [JINR-P13-3523] 07 p0994 N68-16131 minescent diodes 07 p0994 N68-16131 rements in wake of hypervelocity sphere traveling in argon atmosphere [SL-T-33/66] 07 p1093 N68-16146 Spectrometric method for rapid analysis of mixture of fission products of fission prod [CNEA-205] 07 p0953 N68-16229 Review of electronics and instrumentation studies including silicon detectors for high resolution spectrometry and the [RT/EL/67/4] 07 p0976 N68-16359 Automatic device to compensate for earth magnetic field around double-focusing, iron-free, beta spec-07 p0996 N68-16409 (CEA-R-3247) High sensitivity scanni [WRE-TN-PAD-120] ng spectrometer 07 p0996 N68-16466 Neutron-proton relativistic elastic scattering formu-adapted for recoil proton spectrometers (ASL-186) 07 p1045 N68-16578 Ins adapted to [HASL-186] First and second order matrix theory for design of earn transport systems and charged particle spec-08 p1211 N68-17255 (SLAC-751 Gamma ray spectrometers for assay of complex mix-tures of low concentration of radionuclides in biologi-cal materials [UCRL-70544] 08 p1176 N68-17379 High resolution spectrometric measurement of energy and natural line widths of 2p-1s pionic X-ray transitions, as well as muonic transition energies in Ll, Be, B, and C isotopes

(NASA-CR-93190)

08 p1212 N68-17409 Portable spectrometer for monitoring oxygen and hydrogen as free gas or as dissociation products in inert gas sheld of gas tungsten arc welding process [NASA-CR-61567] 08 p1177 N68-17497 Spectrometric analysis of soft X rays using Geiger 08 p1233 N68-17559 Electron paramagnetic resonance spectrometers of erheterodyne reception 08 p1178 N68-17664 homodyne and supe (CERTS-NT-02-6) Spectrometric techniques for estimating flow field gas temperatures of reentry vehicles

08 p1242 N68-18105 Associated particle method for fast neutron time-of-09 p1391 N68-18935 [CEA-R-3254] Magnetic beta spectrometer using iron pole pieces to btain double focusing field shapes in heavy element [NP-17189] 09 p1342 N68-18936 Rapid spectrometric determination of plutonium in nitric acid solutions by reduction of plutonium ions and measurement of resultant color at 567 nm (99 p1296 N68-18950

ectrofluorimetric analysis of mobility and polarity

ion spectrographic analy-

09 p1298 N68-19259

tructions evaluated for ma correlations 09 p1345 N68-19301

10 p1528 N68-19680

BNWL-SA-15221

of active sites of alpha chymotrypsin [NASA-CR-78109] 09 p1283 N68-18994

Correction of amplitude spectra from semiconductor spectrometers using digital computer [NIC-TRANS-2481] 09 p1344 N68-19227

Design, and development of solar wind spectrometer for Apollo lunar surface experiment package [NASA-CR-93667] 09 p1345 N68-19385

instrument error corrections for measuring continu-ous beta spectra using intermediate image spectrome-

Stilbene crystal, fast neutron spectrometer for determing energy spectra of isotopic neutron sources [MLM-1422] [0 p1568 N68-19966

De are excitation for emis a of purified calcium metal

Beta ray spectrometer cons measurements of electron-game [NP-17188]

(SGAE-PH-58/1967)

(Y-1590)

Iron free spectron energies in pl (UUIP-553) Design of electron spin res measuring changes in hydrogen a [UCRL-17306, PT.1] Analysis and instru dosimetry [NASA-CR-92104] (TIS-67SD227A) [INSJ-106] (BNWL-SA-1536) ray spectromete: (UCRL-17901) High voltage effects in satellite-b ATS I satellite omnidire (TR-0158/3260-20/-7) JINR-E4-37421

Design criteria for circular variable filter spectrome-ter optical, electronic, and data handling systems for relating particle sine effects to infrared spectrs [NASA-CR-93773] 10 p1531 N68-20277 sent for electron Mobility spectrometer seasurements in D region (SR-315) 11 p1696 N68-20749 Spectrographic deterr n of alloying elements in [BARC-312] 11 p1647 N68-20799 Spectrometer design, and so ing energy of high energy part with ionization chambers neter design consisting of several spark Fe absorbers, and scintillators for determin-of high energy particles from track curva-[FTD-HT-23-743-67] 11 p1700 N68-21488 ory and calculations for Tangent focal plane theory rowne-Buechner magnetic spe [TR-169] 11 p1748 N68-21569 Proper use of laser radiat ometer scanning functions m in calibration of spec-12 p1883 N68-21969 Spectroscopic study of recombination in early after-glow of helium plasma [AE-311] 12 p1945 N68-22073 dies of electron binding 12 p1928 N68-22434 nance spectrometer for 12 p1875 N68-22632 Atomic fluorescence flame spectroscopy compared with other flame spectrometric methods 13 p2013 N68-23551 nentation in nuclear magnetic 13 p2015 N68-23673 Electronic camera and high resolution spectrograph used for determining spectral doublet in gamma Pegasus, Cassiopeia-type star 13 a 2040 NAS-23726 13 p2069 N68-23726 Feasibility of beta-gamma spectrometer with pulse eight to desage conversion circuit for radiation 13 p2072 N68-24341 Theory for triaxial and time-of-flight polarization spectrometer for thermal neutrons [EUR-3910.D] 14 p2254 N68-24487 Nuclear magnetic resonance theory and spectrome-14 p2329 N68-24503 Tabulations for calibrating spectrometer used with 14 p2254 N68-24646 Performance of Buttelle rotating crystal slow neutron 14 p2256 N68-24735 Design and operating characteristics of slow neutron time-of-flight spectrometer [IEA-136] 14 p2256 N68-24739 Reliability of high resolution grating spectrometer in 14 p2257 N68-25157 Hypercryogenic high resolution X ray and gamma 14 p2260 N68-25444 Physical properties of ruthenium isotopes by gamma ray spectrometer 14 p2319 N68-25469 Internal conversion coefficients, spectrometer calibration, radiation detectors, and gold isotope decay 15 p2535 N68-25994 15 p2443 N68-26881 Electron and proton flux density data as obtained by 16 p2659 N68-27213 Double focusing spectrometer to detect reaction products at 180 degrees to beam direction [ANU-P/399] 16 p2663 N68-27680 on of excitation of nuclei 16 p2727 N68-27980 Control loops for spectrum stabilization of gamma 16 p2664 N68-28045 [CEA-R-3300] n/lithium/ gamma ray impton scatterings 16 p2664 N68-28111 Total absorption germ pectrometer which preven vents Co [BNL-12332]

SUBJECT INDEX Temperature effect on coherent scattering amplitude for forward scattered neutrons in lead and biamuth, and on properties of reflection spectrometers 17 p2926 N68-28550 Feasibibility study of Auger and photoelectron spec-INASA-TM-X-632551 17 p2945 N68-29514 Spectrophotometry of lunar observations by quartz spectron fescope nar topography based on ectrometer and horizontal [NASA-TM-X-61023] 18 p3161 N68-29672 Nuclear quadrupole resonance spectrometer for etermining chlorine resonances in several charge-antifer complexes 18 p3127 N68-29704 Magnetic analysis of proton production by deuteron bomburdment of vana [JEN-181-DF/I-55] 18 p3127 N68-29717 High frequency paramagne ter development and applic analyses of selected materials [AFOSR-68-1002] netic resonance spectrome-ications in microstructural 18 p3072 N68-29816 Time of flight analyzer based on small on-line digital (EUR-3933.E) 18 p3041 N68-30201 Profiles of Fraunhofer lines in near infrared solar 18 p3160 N68-30430 Increasing sensitivity of spectrographic determina-tion of trace elements [TG-230-T548] 18 p3029 N68-30540 18 p3029 N68-30540 Spectrometric study of microwave spectral line ridth in symmetric top molecules 19 p3221 N68-30951 Essential features of correlation type time-of-flight spectrometer with magnetically chopped polarized neutron beam [KFKI-7/1968] 19 p3278 N68-31475 Servocontroller for programming atomic emission and sample vaporization in direct current are spec-trochemical analysis [NASA-TN-D-4769] 19 p3232 N68-31948 Gamma ray spectra of beta decay of cesium 134 and arium studied with curved crystals and spectrometers COO-1112-166] 19 p3336 N68-31973 [COO-1112-166]

Design and development of multiorder satellite infrared radiation grading spectrometer for Nimbus D meteorological satellites [P9-178122] 19 p3374 N68-32027

Analog simulation of dc arc emission spectrometer control system to define optimum control requirements [NASA-TN-D-4770] 19 p3251 N68-32055

Pulsed nuclear magnetic resonance spectrometer neasurements of self-diffusion coefficient of methane 20 p3414 N68-32243

Application of double resonance modulated microwave spectrometer, microwave spectrum of pivalaldehyde, and collisional trunsfer of rotational emergy 20 p3415 N68-32276

Spectrometer system to study optical absorption from metastable states of ions in crystal [TR-2] 20 p3564 N68-32638

Scintillation gamma spectrometer mounted in lunar probe to investigate gamma radiation of lunar rock [NASA-TT-F-11895] 20 p3586 N68-32681 Proton recoil spectrometer to measure water cooled

reactor spectrum
[IN-1054] 20 p3530 N68-32684
Theory and application of continuous radiation

Theory and application of continuous radiation source in atomic absorption flame spectroscopy 20 p3433 N68-33496

Total neutros, cross section for natural samarium measured in energy range from .06 to 1 eV with crystal spectrometer [CNAEM-52] 21 p3735 N68-33860

[C.N.42M-52]
First order theory for performance of split-pole magnetic spectrograph containing separated straight sector and circular sector magnets
[BARC-326]
21 p3689 N68-33931

[BARC-326] 21 p3689 N68-33931 Logical integrated circuit programmer for automatic gamma spectrometry, using least squares method and BM 360 computer for amalysis (CEA-R-3452) 22 p3843 N68-35544

[CEA-R-3452] 22 p3843 N68-35554 Helium spectrometer with sandwich diode for spectral analysis on neutron sources [JUL-522-RG] 22 p3878 N68-35654

[JUL-52-RG] 22 p3878 N68-33654 Germanium-lithium gamma ray spectrometers for high resolution and sensitivity spectral analysis of radionocilides [UCRL-30437] 22 p3879 N68-35677 Constructing high resolution apectrometer with high counting rate, and analog to digital converter for measurement errors [JINR-P13-3813] 22 p3880 N68-33885 [JINR-P13-3813] 22 p3880 in 198-33885 [JINR-P13-3813] 22 p3880 in 198-33885 [JINR-P13-3813] 22 p3880 page 3880 page 388

systems (JINR-P13-3812) 22 p3880 N66-35886 Lunik 10 scintillation spectrometer measurements of gamma radiation intensity of lunar surface 23 p4166 N68-36354

Fast newtron time of flight spectrometer
[PINSTECH/PHY-6] 23 p4062 N68-36663

Spectrometer measurement of pion energy dependence of form factor in neutral kaon decay [PURC-2137-3] 23 p4124 N68-37212 Magnetic spectrometer design and beta-gamma correlation measurements

24 p4307 N68-37519 Measurements of solar X ray emission from carbon 6 and nitrogen 7 ions by crystal spectrometers 24 p4338 N68-37659

Breadboard model tests of electronic system for remote sensing gamma ray spectrometers [NASA-CR-97364] 24 p4256 N68-37688 Spectrometer design for thermal neutron inelastic scattering measurements from single crystals [INR-P-896IJPS] 24 p4313 N68-37778

in the control of the

Nuclear reactor fuel element safety for Danish research reactor DR2 using gamma spectrometers [RISO-M-732] 24 p4296 N68-37888

Gamma radiation emitted from lunar surface determined from Lunar 10 spectrometer system 24 p4342 N68-37895

Double focusing spectrometer to observe auclear reactions at 180 deg to beam direction (ANU-P-99) 24 p4257 N69-38020 Clinical radioactivity measurement with pulse height

U SPECTROMETERS

SPECTROPHOTOGRAPHY
Liquid hydrogen bubble chamber spectrography of
L-mesons in kaon-peoton interactions
[UCRL-17833] 05 p0712 N68-14430

Nonlinearity effects in optical data processing, and FORTRAN program for analyzing nonlinearities in spectroscopic photographic plates [NASA-CR-94405] 2 p1917 N68-22845

[NASA-CR-94405] 12 p1917 N68-22845 Molecular spectrophotographic analysis of various spectral bands

Equipment and techniques for high speed X ray stereophotography and spectrographic recording of detonation (FTD-HT-67-210, V. 9)

19 p3277 N68-31423

SPECTROPHOTOMETERS

NT INFRARED SPECTROPHOTOMETERS

NT ULTRAVIOLET SPECTROPHOTOMETERS

Atomic absorption spectrophotometry for determining tin-in-tin and calcium-in-calcium lead alloys [RFP-1001] 07 p0956 N68-16417

Titanium impurity analysis in ferro-niobium by spectrophotometry
[NASA-TT-F-11586] 10 p1483 N68-19785
Fluorescence spectra studied with ministurized

Fluorescence spectra studied with ministurized diamond high pressure cell and modified recording spectrophotometer 10 p1487 N68-20072

Absorption spectrometer for determining spectral composition of radiation 12 p1918 N68-23031

Metallic cryostat designed for optical absorption spectra measurement in 85 to 300 deg K range using SF-4 spectrophotometer [FTD-HT-23-687-67] 13 p2071 N64-24243

[FID-H1-23-087-67] 13 p.to/1 Nos-44-63 Spectrophotometric observations of zodiacal light and measurement techniques, instrumentation, and historical survey

Redesign and construction of laser Raman spectrophotometer [TR-4/29] 18 p3085 N68-30548

Spectrophotometric determination of nickel, cobah and chromium in steels, and estimation of systematic errors arising from undetermined compounds 20 p.3420 N68-32607 Eye protective welding filter transmittances using spectrophotometer [REPT.-314] 24 p4263 N68-38446

SPECTROPHOTOMETRY
NT STELLAR SPECTROPHOTOMETRY

Spectrophotometric determination of platinum /4/ by solvest extraction with metal chelate [NASA-TT-F-11380] 01 p0019 N68-10336 Spectrophotometric determination of minute quantities of borus in rocks after extraction with methylene

(NASA-T7-11381) 01 p0021 N68-10419
Polarimetric, photometric, and spectrophotometric measurements of Marx, and visible and near infrared studies of Martine surface composition
[NASA-CR-90495] 02 p0266 N68-11394

[NASA-CR-90495]
Spectrophotometric determination of laurylamine reaction constants with cyclohexane for plutonium purification
[CEA-8-3118]
03 p0318 N68-12725

Spectrophotometry of accorbinate complexes of group 4 through group 8 elements
06 p0794 N68-15965

Quantitative spectrophotometry method for determining minute amounts of toolide and brumide in presence of todide, bromide, and chloride [NASA-TT-F-11379] 06 p0796 N68-16094

Multispectral sensing techniques for ground and airborne detection of Ponderosa pine trees under stress from insect or pathogenic organisms [NASA-CR-93173] 08 p1126 N68-17408 Procedure for determining plutonium in plutonium

metal using absorption spectrophotometry
(PG-290/W/)

Periodate spectrophotometric method for determine

Periodate spectrophotometric method for determining manganese in titanium and titanium alloys (AMMIC-TR-68-01) 11 pl643 N68-20592
Spectrophotometric determination of vanadium in plutonium vanadium alloys
[LA-343] 12 p1836 N68-22457

[LA-3843] 12 p1836 rese-2247 Spectrophotometric method for determining microgram amounts of mercury in organic or inorganic solutions and solids [IN-1159] 12 p1836 N68-22473

Quantitative analysis of solar radiation absorption by vertebrate times using spectrophotometric technique 13 p.1997 No8-23083

Spectrophotometric studies of using accorbic acid to form complexes, and absorption spectra variations in simple salt solutions

13 p2021 N68-24075

13 p2021 N68-24075
Spectrophotometric determinations of phosphorus in organization community.

14 p2219 N68-25615 Spectral photometric and photographic techniques for studying geologic-atmospheric interface caviron-

[AFCRL-67-0603] 15 p2461 N68-26340 Spectrophotometric standards for spectrograms obtained at 1962 total solar eclipse [AFCRL-68-0057] 15 p2561 N68-26587

[AFCRL-68-0057] 15 p2561 N68-26587 Visual, spectrophotometric, and photometric rehous of colorimetry [NBS-MONOGRAPH-104] 15 p2403 N68-26866

Spectrophotometric determination of rhenium content with thioures in rhenium-tangeten alloys [NASA-TT-F-11735] [6 p2615 N68-28245 Spectrophotometry of Junar tapography based on

Spectrophotometry of lunar topography based on observations by quartz spectrometer and horizontal telescope [NASA-TM-X-61023] Its p3161 N68-29672

Gamma radiolysis and radiochemistry of glasses [CONF-680423-1] 18 p3100 NoS-30771 Spectrophotometric determination of aluminum in zirconium and titanium powders

[T-68-9-1] 22 p3825 N68-35420 Applicability of dilute nitric, sulfuric, and perchloric acids as solvents for spectrophotometry up to 250 deg

[ORNL-4279] 24 p4210 N68-37440 PECTRORADIOMETERS NT INFRARED SPECTROPHOTOMETERS

Dual channel infrared spectroradiometer system for obtaining spectral absorption and emission data used to determine temperature and pressure distributions of certain rechet enhant species
[NASA-CR-94133]

11 p1701 N68-21736

[NASA-CR-94133] II p1701 N08-21733 Radiative history of expended mechan fusit disterrational by gamma-spectroscopic intensity measurement on fusion products 15/QAE/G-5/1948] 16 p2706 N68-2806/

[SGAE-G-5/1968] 16 p2706 N68-29061 Spectromoliometer and technique for measuring spectrum irradiance of solar simulators [NASA-TN-D-4822] 22 p3877 N68-35534

solu talu [N/

of m

R

E

rare in di (FT)

Se

In

Qi ipec (NA

T

A

Sp speci

La neut grani NA

O

(IC-

Ga polar ment (BNI

meta (DR)

Eu descr

sorpi

SPECTROSCOPES
U SPECTROMETERS SPECTROSCOPIC ANALYSIS

Bibliography on spectroscopy of interest to high tem-rature chemistry and physics, and reactions between

01 p0+18 N68-10592 Chemical analysis of hydroxyl in solid magnesium oxide using chemical decomposition and emission and

[NASA-CR-90332] 02 p0175 N68-11286 Trace contaminant identification using microwave

double resonance spectroscopy [NASA-CR-967] 02 p0248 N68-11634 Spectroscopic orbit and absolute eclipsing binary star BV 267 ute properties of single

02 p0268 N68-11762 Spectroscopic analysis of manganese and from in ir-

radiated steel samp [RT/CHI/67/16] 02 p0178 N68-11852

Spectroscopic analysis of isoprene reaction with or-tric lithium compound in diethyl other 02 m0179 N68-11883

Conformational dependent between sulfur-containing grou tron system determined by spec nce of change effect oups and adjacent pi elecroanalysis 02 p0179 N68-11899

Spectrographic determin tum by fractional carrier dist [ANL-TRANS-514] of impurities in uranion method 03 p0310 N68-11990

Neutron activation. a spectroscopy to determine impurities in red pi [SGAE-CH-31/1966] phorus 03 p0311 N68-12141

High resolution solar spectra [SR-4] 03 p0414 N68-12174

Spectrock [K-1683] 03 p0313 N68-12418

nd applications to use of finactive tracers 03 p0316 N68-12632 Microwave sp s in place of radi neutral isotopes [NYO-3339-1]

Collection method for krypton and xenon from reac-tor coolant gas in preparation for gamma spectrometric

(PG-807/W/) 04 p0465 N68-12957

ries on spectroscopy of crystals and Research su [AD-661330] 04 p0558 N68-13449

ons, test facilities, and

05 p0617 N68-14011 Fractionation of carbon, lithium, and other incopes by extraction chromatography, boron isotope separa-tion, enrichment of carbon and oxygen isotopes, and

05 p0619 N68-14143

Calorimetry, mass spectrometry, neutron and X ray crystallography, microwave and radio frequency spec-troscopy, and molecular beam studies 05 p0620 N68-14149

Mass and spectroscopic mospin quartets in light nuclei ents of complete

(UCRL-17783) 05 p0708 N68-14220 Gamma ray spectroscopy to determine lutetium 170

docay acheme (JINR-P6-3452) 05 p0715 N68-14591 electron spectra and

Gamma ray and co beta particle deci (JINR-P6-3496) cay of erbium 158 05 p0715 N68-14597

Nuclear magnetic resonance tally significant molecules un following abort, intense radiol e spectroscopy of biologi-ing free inductance decay

05 p0626 NSE-14608 Ikali metal lines at flame

(BMWF-FBK-67-19) 05 p8757 N68-14798 Gamma ray and internal conversion electron spectra of promothium 143, 144, 146, and 148 [JINR-P6-3471] 05 p0720 N68-14814

06 p0789 N68-15518 Internal reflection spectroscopy of powdered quartz

[NASA-CR-92572] 06 p0796 N68-16097 nd for rapid analysis of mixture Spectrometric method fission products [CNEA-205] 07 p0953 N68-16229

ntational spectra linewidths of symmetric-top 07 p0958 N68-16727 iography on spectroscopy and high sistry, and reactions between gases

07 p1050 N68-16829 analysis of lead, electron beam mea-nal diffusivity, and half life determina-

tion by decaying p [MLM-1405] 07 p0959 N68-17003 nium isotope decay 07 p1055 N68-17128 Spectroscopic [JINR-P6-3464]

mt of the

chromatography for blood ethanol analysis, absorption spectrometry for copper and thalli-d alveolar reaction of nickel carbonyl 3461-9] 08 p1125 N68-17228

Visible and near infrared spectrometric tests of lected black and white film-filter combinations for ing between h [NASA-CR-93186]

08 p1126 N68-17378 nd high altitude imaging ctral evaluation of wildlife [NASA-CR-93187] 06 p1176 N68-17406

resonance spectroscopy for lar wave functions of organic [AFOSR-68-0060] 08 p1144 N68-18073

Computer program used with spectral comparator or automatic reduction of spectroscopic data NRL-6632] 10 p1502 N68-19910 for automatic red [NRL-6632]

ım-molybdenum al-Spectroscopic and loys containing up to 10 percent Mo (JEN-187-DO) 11 p1643 N68-20606

Radioactivation analysis of high-purity substances ad direct gamma spectroscopic activation analysis of gh-purity silicon high-purity efficien [FTD-HT-66-566] 11 p1649 N68-21039

Spectrographic analysis of a [BARC-311] imony sulfide 11 p1653 N68-21290

Spectrophotome radiogold sol conce (CNEA-200) tric data analysis for determining 14 p2209 N68-24438

surement of high tem-ic techniques for tem-nium seeded hydrogen 14 p2322 N68-24571 Real time tech time technique are gases and spectro NASA-CR-86055]

ation of concen [CEA-R-3219] outton of boron in uranium 14 p2217 N68-25153

14 p2218 N68-25356 Optical model tran coefficients and cross reactions in unstable [UCRL-50359]

15 p2512 N68-25692 sethyl benzene Raman Quantitative analysis of dis

[FTD-HT-66-800] 15 p2415 N68-26406 y for measuring Lamb

15 p2526 N68-26948 ng technique for photo unsient intermediates in graphic absorption spectra singlet states of aromatic by [TRW-05824-6006-R000]

16 p2607 N68-27111 is, continuum and line radiation in-excitation in spectroscopic study of

16 p2735 N68-27220 ns on various elements boules based on spec-

16 p2608 N68-27366 ipping in lead to obtain Sub-Coulo (ANU-P/401) 16 p2722 N68-27540

of H and K Ca 2 Fraunhofer of total solar radiation flux 16 p2768 N68-27768

Crystallography and sp sites in spinel structure [CEA-R-3356] copic analysis of crystal 16 p2746 N68-28035

Spectrographic and vi-lessed within spent ur ric analysis of fission ium oxide rods 16 p2709 N68-28172 WCAP-6087]

Thermodynas nd structural studies of metal ions (MIT-1965-63) 17 p2841 N68-28956

Ion exchange separation and flame emission spec-ometric determination of trace impurities in rare earth comp [IS-T-223] 17 p2842 N68-29121

Equipment for short-lived isotope production in roton beam of synchrocyclotron and associated spectroscopic analysi [JINR-P6-3773] 17 p2869 N68-29210

Mass spectroscopy used to find effect of acid con-entration on determination of silicon content of mag-[NLCO-1012] 17 p2846 N68-29463

Feasibibility study of Autroscopy as analytical tool [NASA-TM-X-63255] dy of Auger and photoelectron spec-17 p2945 N68-29514

Spectroscopic analysis of uranium tetrafluoride im-JEN-192-DQ/I-66] 18 p3086 N68-29608

Activities, /thermodynamic ideal system/, in liquid Fe-Cr ar Cr-Ni systems are found properties relative to nd Ni-Cr, and liquid Fe-18 p3089 N68-30037

reduction of spectrographic a column Computer program for re data from cylindrical plasma [ARL-68-0003] 18 p3143 N68-30181 Preparation of KI/TV in operating scintillator for

gamma ray spectrometry [NP-17352] 18 p3075 N68-30328

Spectroscopic analysis of tron transitions in ionized g of photoionization and elec-d gases as function of X ray [EE-3428-101-68U] 18 p3138 N68-30797

Application of microwa ing ethyl and isopropyl alc [NASA-TT-F-11853] etry in determinspurities in gasoline 18 p3031 N68-30827 Lead shielded cells for ectrographic analysis of

radioisotope solution [JEN-188-DQ/I-64] 19 p3221 N68-30954

Electrostatic lense for electron scattering spec-troscopy and electron microscopic analyses of nickel and silver crystal spectra 19 p3322 N68-30979

etric determination of ate and ore samples 19 p3222 N68-30994 Absorption spectrophoton eryflium concentration in sili [NIM-173]

Spectrographic determination of zirconium in urani-[NIM-153] 19 p3223 N68-31107

Atomic absorption spectropl content analysis in silicate samp [NIM-138] tometry for beryllium 19 p3223 N68-31109

Spectroscopic determ by carrier distillation me [JEN-191-DQ/I-65] n of uranium impurities 19 p3223 N68-31162

Gamma ray spectra fr in Ba 135 and Pr 141 [ANL-TRANS-605] mance neutron capture 19 p3327 N68-31187

Correlating emission and atomic absorption methods f analyzing lubricating oils for wear metal contamina-

[ASD-TR-68-2] 19 p3283 N68-31189 hic analysis of various 19 p3328 N68-31226

Abundance and sources of radioactive isotopes in water cooled reactors [IFA-FR-59] 19 p3309 N68-31248

X ray spectral analysis of composition of trace element inclusions in tin dioxide ore [NASA-TT-F-11752] 19 p3271 N68-31574

Tables of mass abo coefficients for use in X ray spectroscopic analy [AAEC/TM-434] 19 p3229 N68-31704

Feasibility study of usi troscopy for oil analysis [AFOSR-68-0761] mic fluorescence spec-19 p3229 N68-31775

Spectroscopic investigation of grup 5 donor states in germanium 20 p3417 N68-32481

Six gap beta ray spectrometer applied to beta and amma ray spectroscopic study of strontium 83 and tel-rium 131 20 p3478 N68-32528

Velocity field peculiarities /Evershed effect/ in single

IRTS-41121 20 p3586 N68-32653 Temporal variations of magnetic fields during reelogment and disappearance of sunspots in active notar regions [RTS-4239] 20 p3586 N68-32654

Spectroscopic analysis of fine and hyperfine struc-tures of 2 3P states of helium 3 [COO-1112-156] 20 p3548 N68-33194

nitrogen 15 uned 6 ICEA-R-34101

Laser spectroscopy di histics function of res

techniques to problet [REPT.-06880-1-F]

PECTRUM ANALYSIS

[NOLTR-67-97]

NASA-TM-X-14291

Computer program with Soviet computer INP-533/PL)

Metal cathodes in ar-ize dc area for spectroci [NASA-TN-D-4236]

Spectral analysis of p close binary stars in spe [NASA-TM-X-63042]

Polarized vibration ratiste in terms of sel symmetry in Brillouin (AROD-2099-30-P)

exchanged loaded pape [UCRL-17144/REV.]]

or X ray e

(1)5370

INASA-CR-9671

Spectrum of triply ionized oxygen [UUIP-540] 01 p0103 No8-10225

Liquid layer solid sample spark technique for spec-rochemical analysis of flat metal samples using cou-

Emission line shift produced by argon and helium as observed in Fe, Cr., Ni, Ca, Cu, Ai [AFOSR-67-2286] 02 n0175 N68-11244

sethod of determ

22 p3829 N68-35725 mion spectro

22 p3831 N68-35960 nation of velocity dis-

23 p4071 N68-36226

24 p4218 N68-38146

and entropy, and prier malyses for

01 p0034 N68-10412

01 p0021 N68-10497

ectrum analysis, for use

02 p0183 N68-11104

02 p0175 N68-11244

theres used to stabil-

02 p0177 N68-11512

tion using microwave

02 p0248 N68-11634

o2 p0249 N68-11777

trundance anomalies in ion Ao-A2 and F5-F6 02 p0269 N68-11821

03 p0404 N68-12112

rength 03 p0315 N68-12574

03 p0409 N68-12703

ission spectral analysis of a Mylar film strips or ion

of cesium hexachloroules for points of speci

g shock spectrum analyzer 01 s0063 N68-10243

a spectroscopy

Raman spectra of lead tits solutions of sodium tantalum talum trioxide and potamium s [NASA-CR-96362] ium trioxide and solid trioxide-potassium tan-bium trioxide 20 p3575 N68-33454 ctroscopic study of electros-ion recombination on plasma jet in low density wind tunnel 20 p3559 N68-33461 frared spectra and analysis of rare isotopic species itrous oxide and nitric oxide 20 p3433 N68-33470 ative capt giant resonance NUS-P-2131 20 p3551 N68-33547 orescent X ray spectrograph for analysis of ele-sboron through fluorine 21 p3689 N68-34021 Electron beams studi use in lunar soil spectrometric analysis [NASA-CR-96709] 21 p3767 N68-34193 Spectroscopic analyses of rare earth metals and of phen fluorides and oxides of ol, guaiacol, and biphenyl in different phases (FTD-HT-23-882-67) 21 p3651 N68-34429 orides and oxides of rare 21 p3652 N68-34430 Infrared absorption spectra of gaseous, liquid, and crystalline phenol, guaiscol, and biphesyl 2 p3652 N68-34431 pic analysis of germani-(TR-4) 21 p3652 N68-34467 Qualitative analysis of gas mixtures by microwave (NASA-TM-X-61256) 21 p3655 N68-34763 Thermistor bolometer radiation emission and aborption measurements for argon plasmas 22 p3942 N68-35227 etric analysis of nd oxygen reactions of magnesium vac (SOUID-TR-CAL-95-PU) 22 p3826 N68-35464 nium perchlorate diffusion flames with variou [NASA-CR-97126] 23 p4184 N68-36039 Spectroscopic analysis of pure rotational absorption spectra of hydrogen sulfide and deuterium sulfide [TR-5/30/] 23 p4006 N68-36202 Lunar composition spectroscopic analysis using eutron activated gamma ray emission from basalt and NASA-CR-97124] 23 p4166 N68-36240 ns in even and odd tin scleon potential 23 p4130 N68-37089 [IC-68-33] Spectrographic and lary tubes for ion tran (UCRL-13344) on products and capil-23 p4132 N68-37161 by of light nuclei - linear tifetime and magnetic mo-ta decay to Na 22 24 p4306 N68-37517 ment measuren (BNL-12621) Ultraviolet and visible spe metal and alkaline earth comp [DRI-3976-6803-F] ctrum analysis of alkali 24 p4221 N68-38494 NT STRATOSCOPE TELESCOPES Operations and instr cal observatory in Chile on data for astro 05 p0758 N68-14037 Preparations, launch, and test flight of simplified ver-on of balloon-horne solar telescope for observations from stratosphere [BMWF-FB-W-67-38] 11 p1702 N68-21770 of comet lkeys-Seki with 13 p2151 N68-23664 vatory, La Silla, bulletin 23 p4042 N68-37377 23 p4042 N88-37:
TBOSCOPY
ASTRONOMICAL SPECTROSCOPY
AURORAL SPECTROSCOPY
GAS SPECTROSCOPY
INFRARED SPECTROSCOPY
MAGNETIC SPECTROSCOPY
MAGNETIC SPECTROSCOPY
MAGNETIC SPECTROSCOPY
MOLECULAR SPECTROSCOPY
NUCLEAR RADIATION SPECTROSCOPY
RAMAN SPECTROSCOPY
RAMAN SPECTROSCOPY
SPECTROPHOTOGRAPHY
SPECTROPHOTOGRAPHY
SPECTROPHOTOMETRY SPECTROPHOTOMETRY SPECTROSCOPIC ANALYSIS

NT STELLAR SPECTROPHOTOMETRY NT ULTRAVIOLET SPECTROSCOPY NT VACUUM SPECTROSCOPY NT X RAY SPECTROSCOPY Selected articles in applied spectroscopy [FTD-HT-67-3] 02 - p0220 N68-11575 Handbook on physical bases and theory of asomic spectroscopy based on angular moments [FTD-NT-64-542] 04 p0548 N68-13129 Effects of crystal defects of sodium fluoride on color enters determined by electron paramagnetic sonance spectroscopy, spectrophotometry, and luminescence [REPT.-758] 04 p0562 N68-13899 thods of measuring gas High speed spectrosco of plasma temperatures 05 p0658 N68-14088 Annotated bibli of electrically exploded wire and spectroscopy [AFCRL-67-0556] 06 p0914 N68-15310 d applied to form of flashiang as light see (REPT.-838) 06 p0891 N68-15957 fect spectrum of cesius ruby laser and xeno 07 p1004 N68-16459 Bibliography on high to physics of gases and plasma [NP-17130] ure chemistry and 07 p0958 N68-16701 08 p1164 N68-18098 ns of alkali metals in fused al-09 p1296 N68-18926 Theoretical and experimental study of thermal nonequilibrium flows [AFOSR-68-0240] 13 p2054 N68-24044 e electron capture detector for quan-opy at high frequency excitation 14 p2254 N68-24595 for study of synthetic iron complexes [NYO-3859-2] 14 p2196 N68-24781 Mossbauer spectroscopy in austenitic stainless steels [NASA-CR-1077] d to study sensitization 14 p2273 N68-25318 Statistical decision thip between resolution [AFCRL-68-0115] 16 p2711 N68-26985 Spectroscopic and of photorearranses magnetic resonance study dibenzoylethylenes and 16 p2611 N68-27842 Research progress on game crystal growth, neodymium uranium 234 recovery, X ray spectroscopy, and polystomic [MLM-1443] umma rays, plutonium 238, m promethium separation, ray diffraction, fast neutron sic molecules. 17 p2843 N68-29171 neasurements of scat-re near earth surface 17 p2939 N68-29282 spectroscopy 18 p3079 N68-30651 microwave investiga-18 n3138 N68-30782 opy of N equals 82 isotones cessum, praseodymium, and 19 p3334 N68-31735

Gamma ray spectros tered photons from a po (USNRDL-TR-67-1241 [AE-320] [COO-1112-167] [FA-M68-16-1] 20 p3543 N68-32597 20 p3423 N68-32807 Optical spectroscopy and oil of surch for stable fractionally of trop techniques used in harged particles called

20 p3547 N68-33096 and ionic colli 20 p3434 N64-33561 roton ground state con-ttrium sotopes 21 p3737 N68-33969 Stroke and space resolved slit spectra of lightning (LA-3754-ADD) 22 p3868 R68-35234

quarks (COO-1112-155)

[CEA-R-3178] 03 p0385 N68-12728 Wave spectra of gaseous sonance of inert gases, as molecules, electron spin radiation effects on RNA and DNA [AFOSR-67-2668] 04 p0464 N68-12876 ns of real, stationary rendom Spectral function 04 ±0530 N68-13329 ole light scattering in spe frequency redistribution tral lines taking into 04 p0544 N68-13337 Spatial intensity distri-with spectrography for s-target plates for imaging [ARL-67-0180] 04 p0510 N68-13430 04 p0519 N68-13466 INASA-CR-915221 04 p0510 N68-13477 n of perchineo-p-xylylene 04 p0460 N68-13528 pocita of an 04 p0469 N68-13530 once and applicab 04 p0501 N68-13589 INASA-CR-915301 15 page 7 Nus-14082 of whywell b fide film photovoltain A-1185

Spectral analysis of short-time records, emphasizin liability of estimated autocorrelation function, spe-al estimation, and records analysis computer program 06 p0797 N68-15242 (SIG-CR-3111 Spectral properties of collectively compact sets of linear operators [MRC-TSR-767] 06 p0863 N68-15528 Infrared absorption spectra of metal oxides in steels [NASA-TT-F-11483] 06 p0793 N68-15868 Strengths calculations for ion resonance lines in seon, and argon isoelectronic sequences [NASA-CR-92577] 06 p0886 N68-15871 Feasibility of using Fourier transforms in expressions of cross spectral density and power spectral density in spectral human response analyses 06 p0781 N68-15913 Surface defects in rolled uranium rods, drop tests of cast uranium base dilute binary alloys, and alpha spec-trometric determination of neptunium and plutonium m uranium process solutions [NLCO-996] 07 p1007 N68-16329 Alpha spectrometric determination of neptunium and plutonium in uranium process solutions 07 p0955 N68-16330 Chemical and spectral analysis, mechanical and ther-mophysical properties, reaction kinetics, and molecu-lar studies for materials research 07 p1066 N68-16531 Optical spectrum analysis on cadmium fluorides doped with yttrium, sodium, or europium 07 p1069 N68-16960 FORTRAN computer program for cross sections, and particle emission analysis in nucleon-nucleus colli-[NASA-CR-93127] 07 p1054 N68-17100 Spectrum analysis for determining neutron flux in at nuclear reactors and proton-recoil spectrometer rement of neutron energy spectrum 08 p1203 N68-17324 [IN-1143] Rotational perturbation, and dissociation analysis on acited diatomic carbon molecule DLR-FB-67-83] 08 pl140 N68-17488 [DLR-FB-67-83] Rotary scanning device for recording frequency TR-1001/2307/-17] 08 p1179 N68-17680 Integrated time-resolved emission spectra of detonating PETN [UCRL-50328] 08 p1210 N68-17882 Analysis on ultrasonic spectrum produced by large mplitude ultrasonic wave resonance in water filler [TR-3] 08 p1210 N68-17959 Proportional counter, and spectrometer analysis of solar X-ray spectrum during satellite polar orbit [TR-0158/9260-02/-1] 08 p1234 N68-18040 Mass spectroscopic analyses of chemical com-ments in rocket combustion chamber during ignition NSCI-67-391 09 p1447 N68-18341 Infrared spectra of saturated aliphatic esters, and classification of band frequency correlations [AFML-TR-67-288] 09 p1292 N68-18393 Fluorescence efficiency measurement of air under ectron bombardment by spectrum analysis

A-3793] 09 p1386 N68-18443 ILA-37931 Analyses on infrared absorption spectra of plutoni-n, uranium, and thorium oxide powders, and sintered 09 p1293 N68-18498 Spectrum analysis of radio frequency emissions from polar cap absorption events [NASA-CR-65996] 99 p1333 N68-18324 99 p1333 N68-18824 Statistical time series analyses for design, and evaluation of low pass filters [AROD-2025-20-M] 09 p1363 N68-18833

Instrumentation and restrometric identification of stituents in visible region [NASA-CR-65993] results of earth-based spec-of lunar atmospheric con-09 p1422 N68-18869 Spectral analysis of structure and reactions of 09 p1295 N68-18889 ce of ozone measuring sonde on studies 09 p1335 N68-19015 is of nitrosomethane and 09 p1299 N68-19294 Polarad spectrum analyzer cs [NAVAIR-17-29GW-07] 10 p1528 N68-19562 Duta analysis of game in terbium isotope decay (JINR-P6-3479) a coincidence spectra 10 p1566 N68-19757

fects [NRL-6673] [FF-67-15] NP-172121

coefficient analy [ARL-67-0279] um tetrufluorides (AFML-TR-67-204) graphite-heavy water (NASA-TT-F-11706)

Least squares spectrum time series analysis method for evaluating human physiological and psychomotor performance Power spectrum analysis on band limited signals cor-pted by additive noise, multiple path, and Doppler ef-10 p1497 N68-19984 14 p2197 N68-24862 Two-temperature model for examining particle spec-s from proton-proton and proton nuclei interactions Error correction transport theory code used after sectral and lattice structure analysis of uranium rods GA-8462] [4 p2292 N68-24987 [GA-8462] 14 p2292 N68-24987 rosion rates of zinc and galvanized steel, and on of optical properties to amount of corrosion in ion spectrum at machine energies [NASA-CR-93762] 10 p1570 N68-20294 Quantitative method for spectrum analysis of iron, aluminum, and silicon in fluorite samples [JEN-185-DQ/I-62] 11 p1643 N68-20594 14 p2273 N68-25247 Lifetime spectra of positrons annihilating in organic atical properties and computer programs for digital spectrum analy [NASA-TN-D-4510] 11 p1766 N68-20598 14 p2228 N68-25268 Spectral and magnetic properties of tetragonal macrocylic complexes of nickel/2/ conductor beta spectrometer measurements on calcium, thallium, and chlorine sulfur, calcium, {CEA-R-3315} FORTRAN program for emission and actory actory and actory actory and actory actory and actory actory actory actory and actory act 14 p2259 N68-25390 Random vibration test level control using input and test item response spectra 14 p2363 N68-25502 Beam failure-frequency concept for defining high frequency limits of shock spectrum analysis 14 p2365 N68-25528 Spectral and structural studies related to isolation of various cobalt compounds [NYO-3675-4] 11 p1648 N68-21005 Spectral sensitivities of receptor systems in human color vision sulfur systems 11 p1650 N68-21054 Spectrum analysis of nitroger 15 p2401 N68-26321 d analysis of atmospheric Gas chromatographic separation of hydrogenated terphenyls and analyses of component spectra [CONF-660553-5] 15 p2418 N68-26686 ulence near ground with hot-w 12 p1865 N68-21993 reserved and luminescent excitation spectra mea-urements for F and M centers in potassium chloride and sodium fluoride crystals Electro-optical converter with photocathode for asma radiation spectrum shift in X ray and ultraviolet 12 p1953 N68-22092 region IFTD-MT-24-86-67] 15 p2555 N68-26913 Analysis of charged particle motion in nuclear Cou-Spectrum analysis of laser beam scattering by relativistic electrons 12 p1936 N68-22785 16 p2673 N68-27158 Rotation and Debye relaxation spectra of dipolar compounds in microwave region [ORO-2840-4] 12 p1936 N68-22786 Molecular beam electric resonance spectra of lithi-um and sodium fluoride and potassium chloride 16 p2607 N68-27172 General formula for calculating equilibrium spectra of secondary counic ray positrons in galaxy and counic annihilation gamma ray spectra. Atomic spectral scheme for calculating recombina-tion spectra of stars and nebulae annihilation gamma ray spectra [NASA-TM-X-63187] 12 p1963 N68-22925 16 p2756 N68-27257 Gravity anomalies and linear transforms over rotating spheres treated as random process with spectrum analysis and applications for geodesy [NASA-CR-85742] 16 p2654 N68-27466 Neutron inelastic cross section measurement on 12 p1943 N68-22985 Chromatographic separation and spectrometric lentification of hafnium isotopic decay in tungsten Gamma ray branching ratios for bound states of alu-minum using magnetic particle spectrometer [ANU-P/408] 16 p2722 N68-27546 13 p2113 N68-23118 Spectral broadening of scattered light using Doppler heterodyne technique, and velocity profiles for laminar flow in a duct [NASA-CR-95187] 16 p2714 N68-27554 Internal conversion spectrum analysis of excited adolinium levels during europium transition m transition 13 p2113 N68-23119 16 p2714 N68-27554 Fixed scattering angle spectrometer for neutron dif-raction analyses on metal powders Optical intensity correlation technique to measure spectral line width from mercury electrodeless discharge filtered by interferometer 13 p2066 N68-23237 High-resolution fluorine 19 nuclear magnetic esonance spectroscopic analysis of diadducts of titani-17 p2919 N68-28392 ctrum analysis and cross sections for formation of ross from Li g/p,d/Li 5 and Li 6/p,pd/He 4 reac-13 p2010 N68-23258 Spectral study of lightning stroke 17 p2928 N68-28665 13 p2060 N68-23625 Computer programs for loudness spectrum analysis Analysis and instrumentati on in nuclear magnetic of surges nce spectroscopy 17 p2920 N68-28799 13 p2015 N68-23673 Vibrational spectroscopic studies of C 13-CO exchange and substitution with metal carbonyls 17 p2840 N68-28840 Spectral effects relating to electronic structure and crystal interaction of planar glyoxime complexes xime complexes 13 p2136 N68-23711 Thermodynamic, spectral, and structural studies of Mathematical analysis and experimental study of gamma ray branching ratio in Zr 95 decay [AERE-R-5342] 13 p2118 N68-23718 metal iom [MIT-1965-63] 17 p2841 N68-28956 Spectrum analysis, branching ratios and amplitudes in kaon and lepton decay studies [LAL-1189] 17 p2932 N68-28957 Effects of photosphere inhom ments with solar magnetograph ogeneities on measure-13 p2151 N68-23928 Core loading procedures and time-of-flight experi-ments for spectral measures from fast nuclear reactors [GA-8543] 17 p2916 N68-28977 Spatial and time variations in airglow continuum Absorption spectral analysis of aluminum alloys of chromium and zirconium | 17 p2901 N68-28905 (NASA-TT-F-11649) 14 p2244 N68-24410 Group theory for neutro ectra analysis in coupled 14 p2289 N68-24522 thermalization, scant-d related bibliography 17 p2935 N68-29160 Deser-Hilbert-Sudershan spectral representation and matrix elements of equal time current-current commutators in perturbation theory [JIRR-P2-3661] 14 p2303 N68-24631 One dimensional energy spectra in turbulent boun-ary layer with analysis of surface roughness effects on sectral shape Calculation of gamma spectrum from pion-pion in-teractions and neutral pion decay [NP-17315] 14 p2339 N68-24745 spectral shape [CEM67-68CYL10] 17 p2874 N68-29202 Cross spectrum analysis for and other geophysical devices [REPT.-10] or evaluating wind sensors Intensity distribution in OH band of sirglow spec-17 p2889 N68-29359 14 p2247 N68-24773 (NASA-TT-F-11571) Computer program for game pplicable to activation analysis a ray spectra analysis Spectrum analyses of a 14 p2215 N68-24842 17 p2846 N68-29472

SUL

Argon plasma are for qualyses of mixed compound

23 p4008 N68-36388 Spectrometric analysis on internal conversion elec-trons in isotopic thorium and eurogium [NP-17225]

titative spectrochemical

NADC-AC-6709]

09 p1304 N68-18806

10 p1475 N68-19841

ng tests, and phon

Electric field effects of organic crystals on incor-porated plane copper compounds Spectrum analysis of molecular beam electric resonance spectra of lithium hydrides [UCRL-17948] 23 p4124 N68-36911 18 p3028 N68-30515 or analysis of infrared Spectrum analysis and calif measuring infrared radiation [REPT.-4613-105-T] ration of radiometer for Proposed system for c spectra, and spectral anal [ESRO-TN-27/ESTEC/] d system for or 23 p4109 N68-36936 18 p3136 N68-30637 SEGO, computer co Polarized absorpti orption, fluorescence, and ectra of phenanthrene in mixed pulse height spectra to get inc NASA-CR-972541 nt energy spectra 23 p4129 N68-37068 Spectral studies of signmunications system adio frequency tracking 19 p3225 N68-31321 resent in command and transmitter of Saturn 3 Infrared spectra and olecules of refractory r on high temperature radio frequency truc [NASA-CR-98033] ging systems 23 p4023 N68-37208 19 p3230 N68-31868 [AFOSR-68-1211] on spectrum derived Helium 2 e Cyclotron reson gallium, and coppe [AFOSR-68-1349] ed effects in tellucium. microscopically for res (NASA-TN-D-48381 ratomic potential 23 n4134 N68-37240 19 p3356 N68-31919 Spectra analyses of color rum of ammonia observed vith resolution of .08 cm 24 p4329 N64-37530 between 35 cm to 240 c [TR-0158/9260-01/-5] Hamiltonian function an ectra of hydrogen tellurid nd energy levels to analyze 19 p3234 N68-32015 Astronomical studies in U.S.S.R. - radio emissic from Venus, solar mass effect on radiation pressur-choadrite structure, Arend-Roland comet, and stell-models 24 p4214 N68-37681 ctral analysis, time series analy 24 p4276 N68-37736 19 p3370 N68-32058 ray spectrum from secon-Calcu dary particle production [NASA-TM-X-63369] termination of relative oscillator strength and tical weight values for chromium atom ky p4339 N68-37754 24 p mium atom 19 p3370 N68-32063 propagator mass spec-of particles 24 p4316 N68-37967 ectral function of ph and time like form he ron transitions in absorption, fluorescence and orescence spectra of 2-phenylnaphthalene 20 p3415 N68-32332 ries mode [TR-24] 24 p4229 N68-38220 Mathematical model and testing of coherent optical stem for high-resolution spectral analysis. PSN-AD3-06-68.1] 20 p3536 N68-32636 in gradient and spectral analyses of turbulent neasurements at Brookhaven National Laboratosystem for high-resolu (FSN-AD3-06-68,1) Electronic spectra of in on-germanium alloy efection es in silicon and sil-24 p4287 N68-38402 SPECULAR REFLECTION 20 p3497 N68-32648 dies including possibili-satellites, transmission lunar surface flashes 04 p0577 N68-13486 of gadoline... c and axial crystals 20 p3567 N68-32834 Lunar specular refle es for optical tracking ce spectra in cubic ar of reflector dat (D1-82-0648) Electronic spectra of selected oxovanadium comtion of particles from rough surfaces 18 p3121 N68-29616 20 p3431 N68-33322 s of transitional struce louver system for [NASA-CR-95870] 21 p3733 N68-33697 18 p3170 N68-30149 ion and solid state spectra of manganese com-Specular refle nce lines from cesis supphire plasma [REPT.-68-9E5-GASES-R1] 21 p3647 N68-33760 24 p4328 N68-38469 Digital techniques for sampled waveform spectrum NT ARTICULATION
NT PHONEMES
NT PHONETICS
NT WORDS [LANGUAGE] 21 p3731 N68-33985 Mossbauer analysis of hyperfine structure in iron [NUS-P-212] 21 p3742 N68-34439 it of dolphin - son se correlation and power Digital program for on-NRC-MK-23 13 p2000 N68-23416 22 p3840 N68-35064 PEECH RECOGNITION Test instruments and mapectrum analyzer for mea and impulse noise signals Pattern recognition, functionals, and entropy, and omparisons of spectral and Fourier analyses for 22 p3874 N68-35131 AD-659197 01 p0034 N68-10412 res used to determine Two theta value tables from X ray analysis of gypsum 22 p3918 N68-35636 LIUL-530-CA1 01 p0029 N68-10530 Two theta value tables from X ray analysis of quartz nd stress effects on speech 04 p0460 N68-12810 Task-induc (BBN-15421 (JUL-533-CA) 22 p3918 N68-35637 Helium spectrometer with sandwich diode for spec-Automatic control bas nition, delayed speech for properties of speech [NASA-TT-F-11391] tral analysis on neutron sources (JUL-522-RG) 22 p3878 N68-35654 04 p0483 N68-13354 Spectrometric measurement of bremsstrahlung roduced by thick gold-tungsten target during electron Speech analysis, pl and computer recogn [JPRS-43926] and phonetic operators, 05 p0629 N68-14101 [CONF-680706-1] 22 p3935 N68-35838 extractor system for as parameters of speech 06 p0778 N68-15768 Single equivalent representing information (NASA-CR-86024) Luminescent properties and electron transitions of termium complexes 22 p3830 N68-35840 Efficient and accura human speech - theory of [NASA-CR-86027] Nondestructive method for burn up determination of coated uranium and thorium nuclear fuels
[JUL-329-RX] 22 p3912 N68-35845 Electric filters for at ctral speech charac-Rare earth spectra analyses for first forbidden beta 09 p1304 N68-18803 23 p4111 N68-36037 human ear structure an er stage device betwee

perception and speech recognishments niques for testing auditory pittion of pilots 10 p1475 N68-19953 sch signale 10 p1476 N68-20023 Dynamic analysis of ap m speech at simulated assessment of high hilling methods fidelity records (REPT.-68-1) ty shifting methods Low pass filter, b system for speech re [NASA-CR-86046] er, and design of input 11 p1670 N68-21593 13 a2032 N68-23218 n and articulation scores 14 p2208 N68-25611 Synthetic speech reco [NASA-CR-94706] Speech signal voice rs in computer con NASA-TT-F-112521 15 p2421 N68-25768 rithm, and design Systems analysis, re of limited speech reco [NASA-CR-86058] 15 p2431 N68-26062 n per d control systems 15 p2428 N68-26399 Human speech car flight in mixed helium-[AMRL-TR-67-125] oring simulated space 15 p2402 N68-26679 ond abstracts [CSL/ONR-20] 15 p2429 N68-26734 n, and speech recogni-unications 16 p2618 N68-27011 Hearing loss, sound tion for underwater vol (CSL/ONR-12) Diver underwind CSL/ONR-14) 16 p2619 N68-27095 articulation testing 17 p2834 N68-29556 TR-31) Digital voice di bility of speech ger (HRB-4007-F-2) for improved intelligi-18 p3014 N68-30118 lated liquid flow using natics research 19 p3263 N68-31080 TP-101 19 p3215 N68-31184 Preferred listening levels sum speech discrimination elated to levels of max-sility 24 p4205 N68-37451 U VELOCITY SPEED BRAKES U BRAKES [FOR ARRESTING MOTION] SPEED CONTROL sidic speed and load controller for meter-genera INAVSEC-X-01) 04 p0449 N68-13488 Dynamic characteristics of controller for Brayton cycle tur [NASA-TM-X-1456] of parasitic loading speed 09 p1274 N68-18702 lance controls of rotors on Servo design for speed b Canberra Homopolar Gene (EP-RR-8) 11 p1627 N63-20895 internal acceleration and for increased operational ag d deceleration optimizationed of automatic con FTD-MT-67-591 15 p2441 N68-26492 Metabolic processes in biosynthesis of proteins and acieic acids 21 p3635 N62-34177 SPEED INDICATORS

NT ANEMOMETERS

NT HOT-WIRE ANEMOMETERS

NT SONIC ANEMOMETERS for-film anemometry, and voltage signal linearisms for hydrodynamic sensor calibration in spring 06 p0844 N68-15333 ircraft entry speed into (RAE-TR-67287) 18 p3071 N68-29635 SP-919] 20 p3460 N68-32462 AN/AYN-I true aimper ta converter preprodu [REPT.-1057-011] 24 p4291 N68-38065 our at subsonic specumented close to hyber

SPEEDOMETERS SPEEDOMETERS U SPEED INDICATORS CELESTIAL SPHERE NT POINCARE SPHERES NT ROTATING SPHERES Radar cross sections for totally reflecting spheres sing exact Mie theory using exact Mie (ECOM-5142) 01 p0031 N68-10824 Boundary layer transition experiments on cones and spheres at supersonic speeds to determine roughness and cooling effects

[C7-2007/020]

02 p0197 N68-11107 Viacous flow in circular cylindrical tube containing finite line of spherical particles 02 p0197 N68-11188 Variation of sphere drag coefficient with Reynolds numbers and Mach numbers [AEDC-TR-67-218] 03 p0296 N68-12010 Radiation pressure on conductin [SU-IPR-112] ting spheres 03 p0415 N68-12474 Energy response of neutron detector using cadmium loaded polyethylene spheres [LA-3595] 04 p0507 N68-13012 Impedance loading analysis for reduced radar ackscatter from infinite cone, and sphere 04 p0475 N68-13029 Soil-spacecraft interaction forces during impact tests vith wedge, spherical, and cylindrical shaped projec-[NASA-CR-91690] 05 p0746 N68-14175 Geometry effects in unreflected arrays subcritical cylindrical components studies using known criticality of uranium metal enriched in uranium 235 [ORNL-CDC-4] 05 p0693 N68-14277 Linear relationship between magnetohydrodynamic sphere drag and flow velocity at high magnetic field strength [TR-46] 06 s0889 N68-15473 Drag coefficient of slowly moving sphere in gas cal-ulated by continuum theory 06 p0827 N68-15507 Drag, thermal, and pressure gradient forces on small sphere in gaseous field with weak gradients calculated with Stokes-Fourier equations

06 e0827 N68.15511 06 p0827 N68-15511 Spectrometric temperature measurements in wake of hypervelocity sphere traveling in argon atmosphere [ISL-T-33/66] 07 p1093 N68-16146 Matched asymptotic expansic parameters for initial developm flow about impulsively started sp [RE-317] sions in terms of small ment of incompressible 07 p0984 N68-16441 homogeneous gaseous fields [TR-21] Retardation coefficients of small spheres in weak, in-07 p0984 N68-16494 Approximation analysis for plane wave scattering on section on dielectric spheres 07 p0965 N68-16934 Electromagnetic scattering from cylindrically and spherically stratified bodies [TR-42] 09 p1380 N68-18282 Simultaneous wind profiles derived from rough sur-face jimspheres and smooth 100-gram spherical bal-09 p1367 N68-18285 [ECOM-5156] Laminar free convection flow and heat transfer about isothermal spheres at extremely small Grashof and Prandtl numbers 10 p1611 N68-19636 mputer program for determining tion view factors for apherical of spherical radiating bodies ng geometric configuration view facto faces of spherical radi [NASA-TN-D-4457] 10 p1614 N68-20331 Rhombohedral cell model for structural analysis on systematic sphere packing [CRREL-RR-201] 11 p1718 N68-20961 Toroidal and poloidal field representation for convective flow within sphere
[RM-5581-PR] 11 p1686 N68-21411

Drag coefficient of slowly moving spheres in near 13 p2053 N68-23556 Free differentiable actions on homotopy spheres [AROD-2056-19-M] 13 p2096 N68-24018

[NASA-CR-87684] 120 km [NASA-CR-86707] Pyrolytic carbon coating trained fluidized bed furnace [ORNL-TM-2113] [SC-R-68-1691] ducting spheres (SC-R-68-1692) les of geodesy a Sphericity and ellipse (FTD-HT-67-1741 Local rates of mass transfe cubic packing to flowing fluid Supersonic flow of cor [FTD-HT-23-1068-67] Metallographic technic tural integrity of plutonius [CONF-670533-8] device [TN-1968-16] Oxidation of carbon spi Single sphere migration in viscous liquid Couette sy

Wind tunnel measurements of superfluid helium drag 14 p2243 N68-25595 quivalent circuit response and polarized sphere del to explain negative induced polarization anoma-SPHERICAL HARMONICS 15 p2456 N68-25678 Computer program for calculating two dimensional heat transfer of small roentering sphere [SC-RR-67-2996] [5 p2578 N68-26763 ing earth gravitational pot bers of spherical harmonics [NWL-K-68/67] Density measurements by falling spheres from 30 to 16 p2654 N68-27555 d stress-strain analysis for 16 p2779 N68-27624 Lunar circular basins and mare distrib pherical harmonics computer program to hape and internal structure of micro of microspheres by ener program to deter 16 p2705 N68-28049 [NASA-CR-93820] Perturbation expansion for long range potentials and pherical models for classical fluid 17 p2924 N68-28467 [TOR-0158/53930-43/-3] Theory of scattering from imperfectly conducting 17 p2920 N68-28874 Numerical results of scattering from imperfectly con-[NASA-CR-92125] 17 n2850 N68-28932 Plutonium 238 dioxide microspheres prepared by the [JUL-512-MA] 17 p2843 N68-29170 Reflection, adsorption, and longitudinal and latera spersion of liquids in study of liquid flow through acked bods with applications to visco [D1-82-0733] SPHERICAL SHELLS 18 p3061 N68-29901 Inert particle effects on particle to fluid mass transfer from single sphere at low Reynolds and high Peclet number flow 18 p3062 N68-30036 Reynolds number effects on geometric flow charac-teristics originating in boundary layer separation from surface of sphere in free flight 18 p2999 N68-30658 d geodetic surveying 18 p3071 N68-30858 idality theorems for centrally 19 p3301 N68-31259 Beta particle decay in heavy spherical nuclei [JINR-P6-3785] 19 p3335 N68-31900 [AFOSR-67-2254] Surface oscillation effect on boiling heat transfer from cryogenic fluid filled sphere
20 p3608 N68-32330 al focused blast device 20 p3477 N68-32391 REPT.-6} Stress analysis for junction ith radially attached nozzles Binary kernel method for calculating quantum attistical distribution functions of hard sphere system 20 p3544 N68-32922 [TID-24103] Drag coefficient for sphere in supersonic rarefied gas [FTD-HT-66-787] 20 p3394 N68-33468 Geometric properties of unit sphere of Banach al-21 p3711 N68-33694 X ray scattering data analysis to determine particle diameter distribution in suspension of apherical parti-cles with uniform electron density [NASA-CR-92976] 21 p3730 N68-33886 fer from spheres in simple 22 p3855 N68-34902 Flow of rarefied plasma past spheres formulated by [AEDC-TR-67-254] 22 p3940 N68-35037 tible gas mixture over 22 p3980 N68-35867 for determining struc-side microspheres 23 p4069 N68-36867 (NASA-CR-920211 Ferrimagnetic single crystal sphere orientation [AFCRL-68-0036] 23 p4063 N68-36933 24 p4210 N68-37455 ena for suspensions [AFOSR-68-0469] 24 p4245 N68-37740

SUBJECT INDEX Motion of apherical cap bubbles in superheated liquids described by differential equation ial equation 18 p3061 N68-29996 Small perturbation effects on equilibrium of conducting fluids filling spherical cavities in magnetic fields 02 p0255 N68-11665 IBM 7030 Fortran 4 computer program for calculat-g earth gravitational potentials from variable num-06 p0840 N68-15731 Universal time changes in geomagnetic solar quiet aily variation - spherical harmonics coefficients nics coefficients 10 p1525 N68-20425 10 p1597 N68-20434 Numerical properties of Legendre function in har-tonic analysis of spherical coordinates 13 p2090 N68-23108 Spherical harmonics for evaluating perturbing forces on lunar satellite due to nonsymmetric mass distribu-13 p2152 N68-24085 Inversion and application of Legendre-type integral 17 p2905 N68-28553 me integrals of spherical harmonics products, elications to viscous dissipation in fluids us dissipation in fluids 22 p3858 N68-35220 Critical masses of oil reflected and moderated en-ched uranium spherical and hemispherical shell as-01 p0089 N68-10126 Sabot stripping method for gas guns [NASA-CR-90503] 02 p0195 N68-11656 Edge effect theory for postcritical deformation and ability of sloping spherical segments of thin walled onvex shells 02 p0278 N68-11678 Modified substitution method to study nonlinear sta-lity of round-bottom oblate spheroidal shell bility of round-bottom oblate spheroidal shell [FTD-HT-66-42] 04 p0587 N68-13123 Nonlinear equations of isotropic elastic spherical 04 p0589 N68-13385 AFOSR OF Closed solution for responses of unanness, considered shells to oscillating axisymmetric pressures 05 p0751 No6-14755 on region of spherical shells 05 p0751 N68-14901 Stability of cylindrical and spherical shells under 07 p1088 N68-16301 Moment theory used for solving dynamic loading problem for flat large radius spherical shell 07 p1089 N68-16303 Impact stresses and deformations in spherical elastic 07 p1090 N68-16670 Mathematical analysis of load capacity of hollow spherical shell reinforced at edge [FTD-HT-66-584] 09 p1439 N68-18331 Mathematical model for internal radiative heat ransfer effects on temperature distribution in apherical 09 p1448 N68-18508 Dynamic response and stability of shallow thin clastic spherical shells subjected to time dependent oading 10 p1602 N68-19647 Hydroelastic response of spherical shell upon verti-10 p1606 N68-20108 Electromagnetic wave scattering by apherical shell th circular aperture 10 p1609 N68-20476 Numerical calculations of axisymmetric dynamic nap-through of elastic clamped shallow spherical nells 13 p2161 N68-23857 Local buckling theory for predicting buckling pres-ure of uniformly loaded spherical cap 13 p2163 N68-24116

od for calculating symmetric

13 p2164 N68-24237

vibration in spherical shells [FTD-HT-23-550-67]

SUB

(IS

M

A

D circu

Ai place shell [PIB

Str

Th

Ax

Nu

PHER

Gra

liquid [NAS

Sim drical [NAS.

Gra

INAS

Liqu

[NAS

Ana lant di

NAS/

Dro

apheric NAS

Man

[NAS/

PHERI

Plan with a rock m [REPT

[TR-19]

Attitude stability of spherical sh (REPT.-67SD285)

Mass transfer for spherical particles suspended in irred aqueous iodine solutions

Electromagnetic scattering behavior of metallic there loaded with circumferential slot in plane per-endicular to direction of incidence 14 p.2299 N68-25114

14 p2350 N68-24473

14 p2240 N68-24551

SPHERICAL CAPS

AFOSR-67-1982]

of torsional vibrations of a spherical caps and circular

01 p0145 N68-10919

NT NUCLEAR SPIN NT SPIN-ORBIT INTERACTIONS NT SPIN-SPIN COUPLING

Ultrasonic radiation field of focusing apherical ource at finite amplitudes Elastic stability analysis for spherical shells under external pressure [ISAS-423, V. 33, NO. 5] 16 p2717 N68-28134 14 p2354 N68-24419 ysis on apherical deflagra-in oxygen acetylene mix-Streak photographic analy-on and detonation waves i Forced convection in concentric sphere heat exchan-[REPT.-10/66] 14 p2371 N68-24852 Spherical wave propagation in non-stationary turbulent media [AFCRL-68-0333] 22 p3864 N68-35993 Matrix analysis of outer edge effect on stress state of herical shell with circular hole 14 p2357 N68-24993 PHEROIDS
NT OBLATE SPHEROIDS
NT PROLATE SPHEROIDS Structural analysis of plastic spherical sandwich sells under hydrostatic pressure 15 p2571 N68-26532 Airy stress function point matching method for closely spaced holes on upherical shells [TID-24309] Velocity calculations for ablating metal spheres traveling in atmospheric reentry simulator [ISL-T-1/67] 06 p0879 N68-15271 Asymptotic method used to investigate discontinui-ties on wave fronts in axisymmetric strain of apherical shell of revolution [NASA-CR-92717] 18 p3174 N68-29663 Spheroidal-function Displacement of floating elastic spherical shell with circular hole constrained by stiffening ring device 18 p3175 N68-29732 plane wave by penetrable sphero [EDL-M1050] Determination of apparent density of plutonium dioxide apheroids produced by sintering process [AEEW-M-797] 13 p2089 N68-23737 Mathematical models for equilibrium modes of rubber apherical shell under internal pressure 18 p3179 N68-30314 dio frequency induction or spheroidization of ceru Axisymmetric elasticity solutions for stress and dis-secement with axial and edge loading of spherical Precession and nutation of deformable bodies - equa-tions of motion for spheroidal deformation [D1-82-0721] 20 p3602 N68-33007 shells [PIBAL-68-12] 18 p3181 N68-30564 Stresses and loads on radial nozzles in spherical and cylindrical shells to study reinforcement of openings in Geometric optics and focal region fields of spherical NASA-CR-958961 18 p3181 N68-30578 Spheroidal method for calculating polar orbits of ar-tificial satellites [NASA-CR-96714] 21 p3772 N68-34508 Thermoelasticity and dynamic response of spherical shells to thermal shock 19 p3375 N68-31058 Asymptotic method of investigating flexibility of non-shallow spherical dome, and nonlinear Reissner differential equations for determining symmetric defor-HERULES SPHERULITES Electron microprobe and microscopic analyses of polished surfaces of magnetic spherules and grains collected from Greenland ice [SAO-SR-251] 04 p0304 N68-13779 19 p3378 N68-31711 Nonlinearities in axisymmetric stress-strain state of spherical shell weakened by reinforcement ring SPHERULITES forcement ring 19 p3378 N68-31712 Experimental study of gran.

Experimental study of gran.

Experimental study of gran.

Experimental study of gran.

Of gphrosdized carbon streis

Of gphrosdized carbon of gphrosdized carbon streis Axisymmetric buckling of thin walled spherical shells under uniform external pressure [SUDAAR-332] 20 p3600 N68-32538 behavior of apher [NYO-2394-28] Numerical analysis of stress distribution in closed herical shell loaded by concentrated forces 21 p3788 N68-34109 SPHYGMOGRAPHY Theory of finite amplitude waves in fluid-fille elastic tubes, including wave distortion, shock wavepropagation, and Korotkoff sounds NASA-TN-D-4803] 20 p3463 N68-3303 Approximation methods for determining axisymmetrical temperature distribution and thermal streams in thin spherical conical, and spherically-blunted shells [PBAL-68-21] 22 p3971 N68-35205 SPICULES Chromosphere spicular structure and feasibility of observations using large astronomical satellite [REPT.-50] 18 p3160 N68-30733 Electromagnetic scattering from radially in-omogeneous cylindrical or spherical bodies 23 p4107 N68-36361 Chromospheric spicules in hydrogen and helium re-SPHERICAL TANKS SAO-804-1501 Gravity effects on self-pressurization of spherical SPIKE ANTENNAS U MONOPOLE ANTENNAS [NASA-TN-D-4286] 02 p0260 N68-11645 Simulated low gravity sloshing in spherical and cylindrical tanks with inverted ellipsoidal bottoms [NASA-CR-61746] 09 p1327 N68-18663 SPIKE POTENTIALS Effects of injector catalytic surfaces on ignition pres-sure spiking in Apollo command module engine [NASA-CR-62070] 13 p2144 N68-23694 Gravity effects on forced circulation pattern in apherical tanks [NASA-TN-D-4409] 10 p1517 N68-20352 Comparison, at simulated altitude, of nitrogen stroxide/monomethylhydrazine and hydrogen perox-le/monomethylhydrazine ignition pressure spiking Liquid flow into baffled spherical tank during [NASA-TM-X-1526] 11 p1686 N68-21365 characteristics [NASA-CR-62071] Analytical and experiment last distribution during outfl possible space vehicle applica [NASA-TN-D-4828] ntal investigation of propel-flow of spherical tanks for SPIKES [AERODYNAMIC CONFIGURATIONS] Wind tunnel aerodynamic spike tests for drag redution, and rain drop disintegration capabilities of supsonic vehicle nose shapes 22 p3857 N68-35104 Drop tower investiga ation of liquid reorientation in spherical containers [NASA-TM-X-1659] 22 p3857 N68-35114 Unstarted inlet flow field during restart cycle of asymmetric mixed compression configuration at Mach Manufacturing technology for cryogenic stretch formed helium pressure vessels [NASA-CR-98041] 24 p4261 N68-37609 [NASA-TM-X-1547] SPHERICAL WAVES J-75 engine inlet noise reduction test using simulated spersonic inlet design with expandable spike [6-3173] 20 p3396 N68-32200 Plane and spherical transient Voigt waves compared ith nuclear and high explosion generated waves in [T6-3173] SPILLING rock masses [REPT.-1-170] 02 p0205 N68-11274 Particle accelerator beam spill control (PPAD-620E) 10 p1511 N68-19538 Analyses of initial point explosion with back pressure r plane, cylindrical, and spherical waves in gases 02 p0284 N68-11554

Earth surface propagation of plane and spherical

Temperature variation a critical magnetic neutron IFA-FN-28 19 p3387 N68-32179 03 p0398 N68-12747 and negative maments of city, rarefied gas flows 06 p0831 N68-16046 Erbium low energy spin parity assignments, neutro single particle states of curium plutonium uraniur isotopes, and charged particle blocking in single (ANL-7405) 17 p2933 N68-29023 Near-earth environment effects on attitude of slowly apinning X Ray Explorer satellite
[APL-TG-1010] 22 p3964 N68-35185 Computed spherical oscillation tables for earth 22 p3964 N68-35185 07 p0992 N68-16733 Design data on gas lubricated self-acting bearings for supending spin axis of gyroscopes [MTI-68TR29] 24 p4262 N68-38123 solution for scattering of 11 p1744 N68-20865 PIN DECOUPLING Boron 11 decoupling studies on proton medicar mag-netic resonance of dicarba tetraborane [TR-15] 05 p0628 N68-14918 borane 05 p0628 N68-14918 Analysis and instrum sonance spectroscopy m in micleur magnetic ction coupled planna genera-ceramic powders 14 p2263 N68-24588 13 p2015 N68-23673 for meson baryon acat-to decouplet exchange 13 p2120 N68-23924 tering amplitud (INP-592/PH) SPIN DYNAMICS Optical measurement technique for nozzle contour supersonic wind tunnel, entry dynamics of apinning chicle, wake surveys on free falling cone, and base 21 p3730 N68-33884 03 p0333 N68-12314 topics in solid state physics [AD-661330] roscopy of crystals and 04 p0558 N68-13449 aircraft spin dynamics al computer methods 08 pl 109 N68-17444 Feasibility of determining using flight test results and dis Effects of core spinsolar evolution theory [NASA-TM-X-60923] 09 p1416 N68-19136 Pulsed source of highly polarization of electrons eject on of fast, polarized, metastab ized electrons, and spin ed in collisional ionizapolarization of tion of fast, poli (AD-664668) le deuterium atoms 10 p1570 N68-20204 ım electrodynam 16 p2730 N68-28133 20 p3463 N68-33056 Computerized prediction celeration effects on solid p listics and heat transfer [NASA-CR-66639] n analyses of radial spin ac-propellant rocket motor bal-19 p3359 N68-31305 Spins and moments of in [PUC-937-321] 110 and 112 20 p3547 N68-33114 Literature survey of acc propellant rocket engines [NASA-CR-66641] ion spin effects on solid 23 p4164 N68-37221 21 p3759 N68-34315 PEN FORGING U METAL SPINNING SPIN-LATTICE RELAXATION Magnetic hyperfine field, nuclear g-factor, and apin ettice relaxation for antimony in iron from nuclear (UCRL-17716) 05 p0729 N68-14603 Boundary effects on spin wave mode shapes at mag-netic film surfaces 07 p1068 N68-16958 Nuclear magnetic relaxation and atomic diffu 13 p2144 N68-23947 aluminum alloys [COO-1198-486] 07 p1070 N68-17007 Spin-lattice interactions measured by electron sp stressed crystals [NASA-CR-77668] s of ions with unfilled F-shells upin resonance in unitatially 09 p1268 N68-19413 09 p1408 N68-18955 Spin relaxation in optically pumped rubidium and use of optical pumping to detect free radicals in photol-us of simple alkanea 11 p1621 N68-21703 10 p1488 N68-20110 Nuclear spin relaxation in liqu ids 10 p1489 N68-20111 of nitrogen 14, and pres-13 p2013 N68-23520 n time measurements in temperatures 13 p2014 N68-23605 ELECTRON CAPTURE
ELECTRON SPIN
ISOTOPIC SPIN
METAL SPINNING clear spin-lattice and ninum powder 15 p2535 N68-25950

SU

F

4

d

in

di

200

-

sp

de

cwi

sp

sta

bil [R

gri

SPEN

SPIN

wo [A

IN

die [Y

SPIN

Phonon spin-lattice relaxation times for uranium and neodymium ions in calcium fluoride [NASA-CR-77664] 16 p2744 N68-27442 Nuclear spin-lattice relunation, and BCS theory on in superconducting 18 p3148 N68-29587 lattice relaxation time terated liquid silane 18 p3138 N68-30775 Measurements of proton ap in liquid silane and partially de [INP-583/PL] Spin-lattice relaxation time a rements for uraniperatures 19 p3350 N68-30997 Optical detection of spin-lattice rela-relaxation in needymium doped ethyl st ce relaxation and cross

ethyl sulfates 19 p3355 N68-31680 Magnon processes of nuclear spin-lattice relaxation magnetic insulators

20 p3563 N68-32338 e and spin-relaxation 20 p3537 N68-32743 Atomic and mol lulium discharge ecular reactions in optically pumped

20 p3422 N68-32787 Electron paramagnetic re d spin-lattice relaxation nce, spin Hamiltonian and spin-latti [ISS-67/34] 20 p3573 N68-33083

magnetic field 21 p3732 N68-34554 Nuclear upin rela: [AROD-4768-5-P] Spin-spin and spin-lattice relaxation times of fluorine 19 in powdered lanthanom trifluoride samples contain-ing praseodymium and neodymium ions

m ions 23 p4146 N68-36059 psoidal conduction hand relaxation frequency calculated for ionized impurity scattering in

23 p4153 N68-36741 Proton transfer reaction kinetics determined by second Wien effect 24 p4210 N68-37431

SPIN-ORBIT INTERACTIONS ELECTRON CAPTURE

duced effects in beta decay and muon capture 01 p0109 N68-10495 Nucleon-nucleon spin orbit potential from cluster todal calculations on light nuclei BMWF-FBK-67-69] 05 p0708 N68-14237

Measurement of hydrogen spin exchange interaction and spin exchange cross section with hydrogen maser [ECOM-2892] 09 p1349 N68-18316

Many body states of nuclear shell model with definite agular momentum and isobaric spin with mixed single particle orbita [AECL-3007] 09 p1390 N68-18854

Spin dependent effects on differential cross sections and polarizations of /alpha, nucleon/ reaction eon/reaction 10 pl567 N68-19878

Feasibility of two-proton decay 11 pi756 N68-21380

11 p1756 N68-21380
caused by spin-phonon interaction
[FTD-HT-66-567]
Matrix 11 p1776 N68-21714 mating tensor and spin Matrix elements for approxin orbit interactions in two body no (IC-67-26) clear coupling 12 p1923 N68-22196

Spin fluctuation effects on properties of transition 15 p2544 N68-26804

Spin-orbit matr [HDL-TR-1380] trix eler 16 p2718 N68-27019 Molecular orbital tech ques and perturbation analy-is and cubic field splitting of of spin-orbit interactions in zinc compounds

16 p2609 N68-27422

Spin-spin and spin-orbit coupling, molecular wave nctions, and Hartree approximation for self con-ment fields in zero field splitting in Nh 18 p3022 N68-30063 n corrections to interac-

Relativistic and one photon tions between two atomic system [TR-N69-1] 20 p3549 N68-33366 Spin orbit doublet splitting in oxygen 17 20 p3550 N68-33423

Scattering cross sections for spin orbit electron tchange in alkali atoms 22 p3926 N68-35031

Residual interactions in mass 15 and 17 nuclei 24 p4308 N68-37548

acceleration effects on erformance 24 p4336 N68-37605 SPIN REDUCTION

Effect of infrared spectrometer gas jetting on Mariner Mars 1969 celestial mechanics experiment and preparations for numerical integration of lunar mo-

03 p0414 N68-12307 Microwave frequency electromechanical despun an-nna system for advanced technological satellites NASA-CR-93732] 10 p1496 N68-19789 tenna system for adv [NASA-CR-93732]

Fundamental principles and performances of one stage, two stage, and stretch yo-yo despin systems [NASA-TM-X-60068] 16 p2773 N68-27796

Computerized simulation ontrol system and nutatio of interactions between nal motion of dual spin прасеста 20 p3596 N68-33532

Rotating flywheel with momentum exchange for at-itude control of spacecraft meteorological sensors 20 p3598 N68-33544

SPIN RESONANCE

Equations for localized magnetic moments by aramagnetic resonance as applied to dilute magnetic

alloys [NYO-2150-38] 01 p0125 N68-10700 Polarization of reson SU/6/W model ices in simple peripheral [NP-16936] 01 p0114 N68-10835

Lattice deform effect on paramagnetic resonance spectrum [FTD-MT-65-572] 04 p0555 N68-13039

Quantum mechanics and statistical mechanics and to solution of biological and chemical problem mical bonding, resonance, spin, and transp 05 p0626 N68-14582

05 p0626 N68-14582 sumption used to describe nuclear double resonance detection of rare spin species (UCRL-17468) Spin

Spin effects, elementary particle reactions, and olarized proton targets Conditions on dens ity matrix elements and their ap-

07 p1053 N68-17057 Electron paramagnetic res [CERTS-NT-02-4] nce in semiconductors 08 p1223 N68-17644 Monochromatic light effects on electron spin monance of diamond

10 p1576 N68-19778 Magnetic resonance tructure of dyspros (UCRL-17969) 12 p1935 N68-22722

ce in thin permalloy films

13 p2134 N68-23529 n and photon production nce interaction calcula

15 p2515 N68-25979 Dirac field proton model for relationship of spin ances of pion syste

15 p2524 N68-26616 [NYO-1932/2/-130] spin in reaction of neganergy 16 p2721 N68-27237

Isoharic spin analog reso oton inelastic scattering es in zirconium 90 from

16 p2721 N68-27346 rption spectra, and fine ad Cu ions Electron spin resonance, abso and hyperfine structure of Mn a

d Cu ions 18 p3149 N68-29612 Microwave resonance probe of spin exchange relaxa-tion in cesium vapor

19 p3321 N68-30976 sonance production in high energy negative kaon interactions

20 p3541 N68-32281 urements for urani-Experimental cross section measurements for urani-um 234 and 236 with resonance parameters [GA-8135] 23 p4126 N68-36994

ination using Bruekner rce operators 23 p4136 N68-37371 Nuclear RPA force determinenction matrix and effective for [JINR-P4-3849]

Reviews of papers on structure of materials, solid tate physics, and energetic particle interaction COO-[198-534] 24 p4331 N68-37791 state physics, and ([COO-1198-534]

SPIN-SPIN COUPLING Bethe-Salpeter equation for two spinless particles in-teracting through massive scalar field 07 p1051 N68-16869

Matrix elements for approximating tensor and spin orbit interactions in two body nuclear coupling [IC-67-26] 12 p1923 N68-22196

Sum rules for tensor and axial tensor currents in higher spin meson couplings [TUEP-68-4] 14 p2302 N68-24513

Baryon-meson spin-spin coupling and isobars using assical approximation and quantum mechanics 17 p2929 N68-28708 Two spin deviate problem for exact analysis of in-teracting Fermi gas

18 p3126 N68-29642 Proton magnetic resonance spectrum, line shapes, nd transitions for spin-spin coupling in anhydrous quid ammonia

18 p3128 N68-29757 Spin phonon interaction in fe [JINR-P4-3794] rromagnetic crystals 20 p3572 N68-33028

Spin-spin and spin-lattice relaxation times of fluorine 19 in powdered lanthanum trifluoride samples contain-ing praseodymium and neodymium ions 23 p4146 N68-36059

Electron spin-spin relaxation time determinations vanadyl acetylacetonate solutions under high press based on electron spin resonance linewidth means 24 p4212 N68-37627

SPIN STABILIZATION

Design criteria for com act, storable solar array for use with spin stabilized satellites [NASA-CR-90347] 02 p0162 N68-11490

Mathematical models of rotational spin effects on proton type sat LIPRS-438221 04 p0576 N68-13409

Fin/spin stabilization methods used in design of im-proved Athena vehicle 04 p0583 N68-13584

Transformation analysis for control synthesis of npinning aerospace vehicle [RS-26-O] 07 p0976 N68-16149

Reorientating spinning vehicles in m 07 p1021 N68-16387

Satellite attitude control and stabilization - conference proceedin [ESRO-SP-16] 08 p1244 N68-17413

Analytical measurements model in horizontal wind turn ents of spin on Delta aircraft 08 p1109 N68-17445

Spin stabilization of apogee motor for ELDO launch hicle used for satellite transfer to synchronous orbits d investigation of lateral stability errors ity errors 10 p1601 N68-20489 (NLR-V-1926)

Spin axis for spinning satellite determined from range rate data [NASA-TN-D-4483] 11 p1782 N68-21182

tenna bearing system for on satellites 11 p1705 N68-21201 Mechanically despun spin stabilized commun [BMWF-FB-W-67-33]

ng systems for despun anten-nunication satellites 11 p1706 N68-21216 Design criteria for be nas on spin stabilized or (BMWF-FB-W-67-34)

ations for determining dual Linear variational equ [TR-0158/3133-02/-1] 11 p1789 N68-21625

Design and operation of damper for apinning or non-apinning, stender or blunt atmospheric entry bodies [NASA-CR-94580] 13 p2155 N68-23669 Euler equations of motion for determining effects of erodynamic disturbances on spin-stabilized space

(REPT.-67SD349) 14 p2179 N68-24518

Star field mapping technique for determining at-titude of spin stabilized spacecraft [NASA-TN-D-4637] 17 p2910 N68-28418

Pioneer 6 space probe spin stabilized orientation control system design survey [NASA-CR-86071] 17 p2977 N68-29274

Solar cell battery power system of satellite to demon-strate two and three axis gravity gradient stabilization using magnetic and hysteresis damping techniques 18 p3007 N68-30713

FORTRAN 4 program for predicting uncontrolled dynamic response characteristics of spinning, cable-connected, two-body space station [NASA-TM-X-38018] 19 p3368 N68-31895

Nutational damping of spinning satellite stabalized by rotors [APL-TG-997] 20 p3585 N68-32514

Conference on spacecraft with relative rotation etween two structural members for attitude stabiliza-

SPLICING and control - theory and design of nutation damal study of mag anisotropy in col [CEA-BIB-105] Analytical and experimental studies of fracture propagation in brittle splices of resin bonded materials 16 p2778 N68-27587 pers in multiple axes con TR-0158/3307-01/-16] spinel ferrites 12 p1958 N68-23033 20 m3595 N68-33527 control of dual-spin SPLINE PUNCTIONS 20 n3596 N68-33528 Uniform appro-15 p2405 N68-25997 Floquet analysis of ene sipation effects on MRC-TSR-7681 06 p0867 N68-16057 for calculation of spline chromium ions in magn [TR-0158/9230-02/-3] 20 p3596 N68-33530 porem to yield 15 p2540 N68-26402 al nutation damp ne of dual-spin satellite MRC-TSR-776 11 p1726 N68-20821 20 p3596 N68-33531 nate /spinel/ 16 p2669 N68-27461 hot pressing of magnesis (NASA-TM-X-59053) Splines, n-widtl [MRC-TSR-784] 11 p1730 N68-21396 Viscous fluid filled ring as nutation damper for spin ed spacecraft functions in uniform inctions 12 p1900 N68-23040 opic analysis of crystal 20 p3596 N68-33533 sites in spinel st [CEA-R-3356] 16 p2746 N68-28035 ic analysis and design for ball-in-tube satellite metric and non-Computer sub solutions to differ IMRC-TSR-8421 20 p3596 N68-33534 ous nutation damper with cantilevered mass for pin spacecraft stabilization nate spinels 20 p3509 N68-32448 s by spline functions 15 p2493 N68-26471 ALGOL program for PENNING [METALLURGY]
U METAL SPINNING ing spline approxi 20 p3596 N68-33535 tion with prescrib [MRC-TSR-833] 15 p2494 N68-26578 Angular accelerometer and hydra utation control of spinning spacecraf zine thrustor for SPINOR GROUPS it reduction for cubic Dirac spinors, covariant currents, and Lorentz group over finite field [RT/FI/68/6] 15 p2518 N68-26236 20 p3597 N68-33536 Magnetic torquing coil for spin control of dual spin 16 p2711 N68-26992 Algorithm for use of cu one variable function accus [AERE-R-5602] es to approxim Dynamical e of Bugoliubov axiom 20 p3597 N68-33537 16 p2698 N68-28230 Design of spin axis and velocity control system for sal-spin spacecraft 19 p3324 N68-31092 Multivariable 1 interpolation between sal space 20 p3513 N68-32325 Spinor particle electric dipole moments and elec-20 p3597 N68-33538 given data points in AFCRL-68-02841 tromagnetic inte [JINR-E2-3801] Sampled data controlled despin system for dual spin accoraft attitude control 22 p3936 N68-35852 Spline function to real number at MRC-TSR-828] at all integer points on SPIRAL ANTENNAS NT LOG SPIRAL ANTENNAS 20 p3597 N68-33539 20 p3513 N68-32619 Control loop system for earth oriented payload espin from dual-spin satellite configuration ite interpolation ier coefficients base lines on unifor Hooded probe antennas a ference measurement in shiel [A-945-F] nfiguration 20 p3597 N68-33540 enclosures 09 p1301 N68-18310 Dual-apin configuration and orbital performance of orbiting solar observatory tribution of conical ntegral equations for curr iangular spiral antennas IMRC-TSR-7881 20 p3515 N68-33058 20 p3598 N68-33543 rpolations of odd degree sly spaced joints 22 p3902 N68-35793 15 p2425 N68-26184 Error bounds to smooth funct [LA-3886] Performance of dual-acceruft attitude control sy zero moments sion line model for analysis of planar equiangular spiral anten 20 p3598 N68-33545 19 p3235 N68-30900 [MRC-TSR-893] 24 p4277 N68-38222 Nutating gyrostat systems for dual-spin spacecraft SPLITTING NT MILKY WAY GALAXY 20 p3598 N68-33546 Spectral fo ed soft mes arred spirals NGC 4618 and NGC 4625 luminosity ibution from photographic photometry 02 p0267 N68-11635 Dynamical analysis of thre -body gravity gradient for calculating electron (LPTHE-TH-221) nace splitting of kaons 13 p2118 N68-23709 spacecraft [APL-TG-1005] 22 p3965 N68-35204 Lande splitting facts citation of platinum 19 [LYCEN-6785] nic energy level exheavy point mass moving in orbit inning cable-connected undisturbed Keplerian of red shifts, stellar rotation and in [AD-662468] bright galaxies 08 p1235 N68-17297 14 p2312 N68-25070 eta radiation spi c acid complexes 23 p4165 N68-36136 Energy tru evolution of spiral galaxcopper from copper rib (SGAE-BL-27/1968) 16 p2598 N68-27739 Active magnetic attitude control system for spin-sta-[NASA-TM-X-61081] 13 g2149 N68-23316 bilized earth satellites (RAE-LIB-TRANS-1311) Visual and ultraviolet p spiral galaxies ometry of six Sb type 24 p4345 N68-37993 SPIN TESTS 17 p2965 N68-28350 17 p2927 N68-28632 Tethered space vehicle operations /rotational and gravity gradient/ explored in Gemini program Unified theory for spiral and radio galaxies 21 p3768 N68-34218 Spin orbit doublet splittis paygen 17 20 p3550 N68-33423 05 p0744 N68-14946 Magnetic field configuration in galactic spiral arms 21 p3768 N68-34219 First order theory for perintic spectrograph contains nce of split-pole mag-arated straight sector in and centrifuge test facilities for testing solid rocket propellant engines - ann [NASA-CR-66625] Stellar orbits and stability of spiral structure 21 p3769 N68-34220 inted bibliography 15 p2448 N68-25842 and circular s [BARC-326] 21 p3689 N68-33931 Spinning friction and torque dependence on ball bearing-groove conformity [NASA-TN-D-4669] 16 p2672 N68-28258 22 p3920 N68-34903 SPIRAL WRAPPING Determination of residual stresses in winding glass fiber reinforced plastics [FTD-HT-67-268] 22 p3971 N68-35237 PIN WAVES U MAGNONS splittings [IC-68-34] 23 p4132 N68-37163 SPIRALS POILER SLOT AILERONS SPINAL CORD Stimulus size and viewing distance effects on duration of illusory motion in spiral aftereffect [FAA-AM-68-10] 20 p3411 N68-32920 Wind tunnel study to explore use of slot spoilers for rect control of flap induced lift and interal aircraft associated with upwar [AMRL-TR-66-233] 09 p1280 N68-18737 [NASA-TN-D-4664] Spiral boundary layer in 17 p2802 N68-28830 stability applied to planetary Ganglia, cell sites and co central nervous system, /bro ctions, in treatment of and spinal cord/, as net-SPONTANEOUS COMBUSTIO boundary layers [NASA-CR-86714] 21 p3770 N68-34264 Hypergolic ignition as AeroZINE 50 nitrogen to [NASA-CR-65794] work for neurophysical 18 p3010 N68-30376 PIROMETERS 01 p0153 N68-10946 X ray effects on pi Spirometer modification tion of respiratory flow data [NASA-TN-D-4234] to permit computer reduc-20 p3404 N68-32427 on of bu Pressure triggered co press explosive hexage 01 p0062 N68-10057 nd ionizing radio 02 p0285 N68-11563 x arc of puinea pigs 20 p3408 Nes-33287 n rate determined by Effect of vessel s 14 p2200 N68-24884 (RAE-TR-67107) 03 p0387 N68-12183 U RECOVERY ZONES U WATER LANDING Self-aligning bearings to improve air lubricated spin-les for machine tools det self ignition in Technique for st [Y-1581] 03 p0347 N68-12205 (UCRL-17811) 07 p1098 N68-16883 SPINEL. n fluid dynamics, plans and combustion ther

Effect of high premare oxygen exposure on red blood cells in apienectomized rais [NASA-TM-X-61195] 21 p3638 N68-34666

and Faraday effect in fer-

nocrystals 11 p1774 N68-21627

Ferror

08 p[209 N68-17701

SQUIB

L

chari [NAS

NAS

(NAS

SQUIR

SRE RE

ST VEN

STABIL.

11 6

אלאלא

NT NT NT NT

Stabil Adams ferentia

INASA-

Composite dependently and a (RAE-T)

Orifice

bearing carrying

Hamilt tional sta (DRTE-1

ides in his

Commi noise stab [FTD-HT

Conver

Stability cooling liq

Ring cu

Lo

SUB

SQUA

Mathematical model for station tribution in thermal self-ignition in inside vessel 08 p1256 N68-17722

Development of fire extinguishing system tective clothing for oxygen enriched atm human safety, space env and accident prevention [AMD-TR-67-2] 09 p1287 N68-18744 Protective clothing fire tests in various cabin at-mosphere compositions

09 p1288 N68-18751 ring methods in self Evaluation of temperature n ignition of oils

16 p2670 N68-27866 SPONTANEOUS IGNITION TEMPERATURE U IGNITION TEMPERATURE

SPORADIC E LAYER

ities in E1, sporadic Drifts of small-scale inhomoge E, and F layers near Black Sea co nat 06 p0837 N68-15400

Seasonal variation of sporadic E layer over Kiev 06 p0837 N68-15401

Experimental and theoretical studies on sporadic E layer, and summary information on other French space 17 p2966 N68-28461

Sun-moon tidal resuts on F 2 region and sporadic E layer - world wide geomagnetic data 21 p3685 N68-33983

tric sporadic E occurrence stream activity 24 p4280 N68-37920 Correlation of ionospheric with thunderstorm and jet stre [AWS-TR-204] SPORADIC METEOROIDS

Statistical characteristics of radio echoes from soradic meteors 06 p0837 N68-15406

Sporadic and shower mete es and their luminous efficiency [NASA-CR-94396] 12 p1970 N68-23032 SPORES

MICROSPORES

Dry heat resistance of Bacillus subtilis var. Niger spores on stainless steel strips, between mated steel sur-faces, and relationship of water activity of spores on

NASA-CR-90097] 01 p0012 N68-10628 Trace elements in ap-mination of hacterial spo [NASA-CR-93684] tion of bacteria and ger-

09 p1284 N68-19322 Microbiological studies of spore release, vacuum probe sampling, effectiveness of ultrasonic baths, dry heat inactivation, and Surveyor 7 and Apollo spacecraft contamination

[NASA-CR-93967] 11 p1635 N68-21078

Dry heat resistance of bacterial spores from steriliza-tion and assembly laboratory [NASA-CR-94340] 12 p1824 N68-22532 12 p1824 N68-22532

Vertical laminar air flow and acceleration of die-off rate of heterotrophic mesophilic bacteria and vegeta-tive cella with apores [NASA-CR-94342] 12 p1826 N68-22759

Spore concentration in polymerized plastic solids, and probability of release of spore upon fracture of 17 p2826 N68-29347

Weldability of aluminum alloys used in Saturn IC (NASA-CR-61181) 95 p0666 N68-14131 Pre-pressure resistance spot welding of stainless steel 18 p3082 N68-30769 S&T-MEMO-9/67] Pre-pressure jig weldi and welding fixture desig [S&T-MEMO-9/67] ng of stainless steel fuel tank, 21 p3697 N68-34100 Resistance welding a and gluing of thin walled aluminum alloy structures [FTD-MT-24-325-67] 22 p3882 N68-35291 Mechanized process for m bined resistance spot welding r making joints using com-ing and gluing of metal struc-[FTD-MT-24-252-67] 22 p3883 N68-35435

SPRAY CHARACTERISTICS

Effect of selected fluid pa microscopic properties (NASA-TM-X-32381) 02 p0200 N68-11610 Scale model test co device for pilot visibility cted on spray alleviation m VTOL air/sea craft near [TAR-TR-6704] 03 p0300 N68-12243 Gas absorption theory applied to containment aprays, and use of equilibrium and mass transfer rate

09 p1383 N68-18940 ORNL-TM-20021

Nozzie diameter, injure effects on evapore on pressure, and tempera-n and induced air flow in ted water jets 22 p3857 N68-35165

Holograms and laser-illuminated photography of reacting sprays in liquid propellant rocket engines [NASA-CR-97209] 23 p4161 N68-36737

PRAY NOZZLES

Effect of selected fluid parameter distribution - fluorescent rameters on spatial d at method for study s of fluid spray 02 p0200 N68-11610 microscopic properties [NASA-TM-X-52381] Determining quality of fuel atomization from cen-

(FTD-HT-67-235) 18 p3158 N68-30483 Design and perform for agricultural aircraft [FAA-DS-68-3] e of liquid dispersal system

21 p3624 N68-33881 SPRAYED COATINGS

Spray deposition of thorium powder on tungsten foil for high temperature insulation in radioisotope power [TE-4059-77-68] 09 p1348 N68-19052

Plastic powder coating of alu and electrostatic spray techniqu [PLASTEC-18] m by fluidized bed 11 p1653 N68-21332

Effect of sprayable, strippable protective coating on painted substrates [NADC-MA-6805] 20 p3509 N68-32525 Mechanical properties of high strength alloys with

tective coatings 22 p3881 N68-35225 plasma sprayed protect NASA-TT-F-1 [927]

SPRAYED PROTECTIVE COATINGS U PROTECTIVE COATINGS

SPRAYERS

Heat and mass transfer in liquid-liquid spray towers 13 p2173 N68-24145

Design of engine powered liquid upony pricultural aircraft dispersal system 24 p4260 N68-37569 agricultura [DS-68-3]

Improved agar spray technique for sampling surface microorganism [NASA-CR-97349] 24 p4203 N68-37871 SPRAVING

FLAME SPRAYING

leing of cylinders in simulate [NRC-9782] freezing sea spray 03 p0383 N68-12118 Fuel vapor and spr existing flammability [DS-67-7] es in aircraft tanks and

16 p2746 N68-26994 Heat transfer by direct contact of immiscible liquids in spray column

20 p3611 N68-33139 Size of droplets formed during spraying of liquids through rotating porous solids [M-7387] 22 n3882 NAS-35260

SPRAYING APPARATUS

U SPRAYERS

SPRAYS U SPRAYERS

SPREAD REFLECTION

U DIFFUSE RADIATION

U REFLECTION

SPREADING

Initial stage of electric discharge column spreadi water with small spreading rates and zero mag forces 02 p0256 N68-11680

and associated inter-High altitude jet spreading ference problems on spacecraft 17 p2873 N68-29007

SPRINGS (ELASTIC) Elastic sensitive elements for absolute gas pressure

(FTD-HT-67-23) 01 p0063 N68-10246 d by considering charac-ping of system Oscillating systems evaluateristic mass of spring and da [RAE-LIB-TRANS-1249]

04 p0544 N68-13180 ear dynamic systems with inverse quadratic 12 p1916 N68-22244

of bimetallic helical Temperature compensati springs by thermometal action 14 p2360 N68-25420

Shim spring isolator 14 p2266 N68-25511

Statical analysis of elastic susp sion systems with (NRC-10121) 21 p3787 N68-33841

in of constant force spring Computerized si suspension system
[AMMRC-TR-68-07] 21 p3790 N68-34422

ear vibrations of particle in planar motion and 22 p3970 N68-35028

SPUR [REACTORS] U SPACE POWER UNIT REACTORS

SPUTTERING

Spettered molybdenum disulfide film deposition and friction characteristics in vacuum [NASA-TN-D-4269] 02 p0222 N68-11644 Low energy sputtering method for thin film produc-

[AAEC/TM-349] 03 p0334 N68-12530

a for fabrication of urani-Triode sputtering to of p1003 N68-16630 (BNWL-553) urements of cesi-

um ion and mercury ion sp [NASA-CR-72344] 08 p1223 N68-17483

Sputtering yields and er ion bombarded liquid meta-statics ion thrustors for spaenergy transfer efficiency of etals for application in electrostatics ion thrustors (NASA-CR-54678)

08 p1210 N68-18198 Radio frequency spi integral cover-glass cos [NASA-CR-93410] g techniques for applying to silicon solar cells 09 p1273 N68-18351

Deposition of integr tz coatings on silicon solar cells by radio frequer NASA-CR-934081 09 p1273 N68-18451

Angular distribution of scatte energy particles on polycrystalli [SGAE-PH-62/1967] ered and sputtered high ne targets 09 p1391 N68-18858

Sputter ion source for lunar lander mass spectrome-

09 n1342 N68-18947 NASA-CR-935451

High energy sputtering of ai (IBK-435) nc single crystals 10 p1575 N68-19522

Angular distribution and yield measurements of sin-gle crystal copper sputtered by 1 to 10 keV cesium ions

10 p1578 N68-20039

Surface structure, and electrical and photoelectrical properties of thin lead sulfide films obtained by cathode sputtering

13 p2139 N68-24081 High vacuum sputtering tec and nickel contacted solar cella [NASA-CR-94715] tering techniques for alumin

14 p2191 N68-24615

Sputtering method for fabricating alumin nickel contacted solar cells [NASA-CR-94768] 14 p2193 N6 14 p2193 N68-25098

Transmission sputt ering of thin gold films by low 15 p2539 N68-26336

ns sputtered from Spectral energy distribution of ato tungsten single crystal by mercury ions
[FTD-HT-67-193] 15 p2540 N68-26480 Yield analysis for proton spe

ttering of polycrystalline ORO-3557-31 15 p2543 N68-26676

Thin films of tantalueposited by reactive sputt m nitrogen compound ering on quartz substrate deposited by reactive a and carbon coated grids (AFAL-TR-67-345) 16 p2744 N68-27453

us of cesium ion sputtering um oxides, and electron angular distribution of alu-Neutron activation aluminum and

19 p3222 N68-31007 Atomic collisions and low energy sputtering of copper from bombarding argon ions 19 p3323 N68-31012

Low energy sputtering [AD-671049] 19 m3353 N68-31334 Computer programass spectrographic [ECOM-2968] ative interpretation of

19 p3253 N68-31619 Design and perfor for direct current aps [NASA-CR-86092] ltrahigh vacuum system 20 p3457 N68-33129

olids by argon ions 21 p3755 N68-34483 Sputtering of poly (ANL-TRANS-627) Thick film vacuus aputtering for solar c (NASA-CR-97123) on of silicon dioxide by 23 p3992 N68-36241

SOUALLS

orecasting procedure for heavy summer squalls ed on wind velocity and cloud measurements 23 p4094 N68-36427

SQUEEZING U COMPRESSING

SOURLCH CIRCUITS

Performance of alternator damping circuits in un-balanced operation, in parallel operation, and during transverse reactance [EE-TRANS-1389] 20 p3449 N68-32497

SQUIBS

I amp, I watt, no fire, dual circuit, four pin high pressure aquib with uniform output and initiation characteristics for high temperature environments [NASA-CR-93182] 08 p1120 N68-17567

Development of high pressure squibs for deep space probe vehicles [NASA-CR-96285] 20 p3402 N68-32603

Low voltage capacitor discharge firing circuit to initiate hot bridgewire squibs for spacecraft applications [NASA-CR-97214] 23 p3993 N68-36501

SQUIRRELS U GROUND SQUIRRELS

SRE REACTOR
U SODIUM REACTOR EXPERIMENT

ST VENANT FLEXURE PROBLEM U SAINT VENANT PRINCIPLE

STABILITY

ILITY
ACOUSTIC INSTABILITY
AERODYNAMIC STABILITY
AIRCRAFT STABILITY
ATTITUDE STABILITY
BOUNDARY LAYER STABILITY
COMBUSTION STABILITY
CONTROL STABILITY

BOUNDARY LAYER STABILITY
COMBUSTION STABILITY
COMBUSTION STABILITY
DIMENSIONAL STABILITY
DIMENSIONAL STABILITY
DIMENSIONAL STABILITY
PREMISECTIONAL STABILITY
FLAME STABILITY
FLAME STABILITY
FREQUENCY STABILITY
GYOROCOPIC STABILITY
HOVERING STABILITY
LATERAL STABILITY
LONGITUDINAL STABILITY
LONGITUDINAL STABILITY
LONGITUDINAL STABILITY
MAGNETOSPHERIC INSTABILITY
MAGNETOSPHERIC INSTABILITY
STATIC STABILITY
SPACECRAFT STABILITY
STATIC STABILITY
STATIC STABILITY
STORAGE STABILITY
STORAGE STABILITY
STORAGE STABILITY
STRUCTURAL STABILITY
SURFACE STABILITY
THERMAL STABILITY
THERMAL STABILITY
LIBRIDATE
LIBRIDAT

NT

NT

Stability regions for Runge-Kutta methoda and Adams predictor-corrector methods for ordinary dif-ferential equations (APOSR-67-2329) 02 p0228 N68-11229

amplifiers and fluidic Stability and res

[NASA-CR-72192]

02 p0162 N68-11403 Compression set re ependence on main sity and stability (RAE-TR-670751

02 p0225 N68-11453 Torsional loss of stability in plast

02 p0278 N68-11674

Orifice flow configurati bearing to insure pneumo carrying capacity [AEDC-TR-67-222]

03 p0346 N68-11929 Hamiltonian mechanics m tional stability problems of ear (DRTE-1188) thod applied to libra-torbiting satellite 03 p0413 N68-12013

Chemical stability of plides in high temperature a [AAEC/TM-352] n thorium uranium ox-

03 p0310 N68-12047 noise stability and efficiency p [FTD-HT-66-355] d telecommunication

04 p0478 N68-13309 Convergence in second order dissipative systems 04 p0530 N68-13325

ive liquid films used in on chambers or nozzles 04 p0568 N68-13852 Stability criteria of prote oling liquid rocket combus

Ring current stab [JINR-P9-3474-2] rical resonator 07 p1045 N68-16586 ity studies, and ionic

07 p1067 N68-16764

(RIA-67-2770) Differential equations of the second bility characteristics of

10 p1532 N68-19579

Function stal [JPRS-44778] 10 p1507 N68-19633

10 p1604 N68-19876 Stability of time varying f

11 p1676 N68-20704 ium alum

TR-SAI 11 p1716 N68-21718 ability limits in elec-imber of acceleration

DESY-67/391 12 p1856 N68-22637

Stability of stra bars to repeated axial TR-67-81 13 p2158 N68-23338

Ch determine stability of a [FTD-MT-24-167-67] ic optical properties 13 p2111 N68-24257

ility analysis of tw ed rotor on anis [NASA-TT-F-11660] 14 p2179 N68-24474

Stability of linear t [NASA-CR-94777] g systems 14 p2233 N68-25368

Stability analysis of ms by Linpu 15 p2439 N68-25983

ferential equations ap-fluid mechanics 17 p2873 N68-29125 Techniques of solu-plicable to stability per [REPT.-08759-3-T] car con stability and suppression

of self oscillations [FTD-MT-24-102-67] 18 p3051 N68-30099 for linear solid state dis-semiconductor materials pro-

20 p3453 N68-32415

Stability of coll [NRC-TT-1309] g gas cavity in rotating liquid 20 p3461 N68-32611 characteristics of

20 p3489 N68-33111 Graph s for calculating

regions of absolute st [NASA-CR-96360] car systems 20 p3455 N68-33554 lity of force ref

21 p3656 N68-33711

bility during flight thr [NASA-TN-D-4786] 21 p3721 N68-33756 ating gravitational inst m in system of tw 21 p3680 N68-33993

Feedback system [WAPD-TM-724] 21 p3675 N68-34636 a consisting of elec-

[NASA-CR-97189] 23 p4141 N68-36689 sama turbuk

and experimenty for cold electr (ORO-3458-13) 24 p4324 N68-37992

of finite difference scheme 24 p4290 N68-38447

lity in periodically 24 p4241 N68-38492

STABILITY AUGMENTATION
U FEEDBACK CONTROL
U STABILIZATION

STABILITY DERIVATIVES
NT PITCHING MOMENTS
NT ROLLING MOMENTS
NT YAWING MOMENTS

s for two general forms of coupled

(NASA-CR-91108) 03 p0331 N68-12179

SC-RR-66-5531 03 p0296 N68-12393

trong stability of Hamilto

06 p0865 N68-15603 ellite und

06 p0763 N68-15615 06 p0763 N&S-15616

08 p1112 N68-17461

12 p1853 N68-22286

15 p2386 N68-26330 hypersonic and high sup-bution theory (AASU-284)

19 p3194 N68-31439

21 p3710 N68-33623

ariant manifolds of systems th or without delay 22 p3901 N68-35581 rived using functing applicable to el

cal engineering (RADC-TR-68-231) 22 n3852 N68-35957

STABILITY TESTS

NT FLIGHT STABILITY TESTS

NT WIND TUNNEL STABILITY TESTS

ity experiments for boiling water reactors 04 p0541 N68-13866 [QR-9]

ilty tests on boiling water reactors, bubbler frequency response measurements, as ations of regulation circuit of velocity modula

[EURAEC-1899] dies using free flying

08 pl105 N68-17458 ds for dynamic stability analyses of es during flight through and exit

large launch vehi from earth atmos [NASA-CR-944] 09 p1443 N64-18825

(BNWL-574) 14 p2292 N68-24983 Double dead-time analysis in liquid bipro [NASA-TN-D-4564]

reactors 14 p2294 N68-25173 Stability tests on ([EURAEC-1964]

bility of select erals in simulated lunar [NASA-CR-1034] 14 p2252 N68-25579

16 p2748 N68-27855

retention, electric re-bility tests to screen ic batteries

17 p2811 N68-28725 on dynamic model of tack 17 p2804 N68-29383

STABILIZATION

NT SIGNAL STABILIZATION

NT SPIN STABILIZATION

Limit cycle and co teristics of X-15 stabil [NASA-TN-D-4287] ntation system 02 p0160 N68-11545

SUL

bod

tion [AS

E

E

N

strea from [ARI

(NAS

[NAS

Eff

Fre

(AFF

INAS

Em NAS

Stag of hyd [MICI

Spec

STAGNA

Assc of hea 1936 to [PB-17

Tran

Stage wall tur [AASU

STAGNA

Vort

FTD-I

Stage wall tur (AASU

STAININ

Stain on mi

Cor

flow f

Na

STABILIZED PLATFORMS Structure determination and stabilizing conditions of orthorhombic beta phases of niobium and vanadium [LA-TR-67-73] 04 p0521 N68-13459 Stability augmentation systems for impro-speed handling and ground attack operations 08 pt 110 N68-17451 Threshold voltage mability in fluid with st as on electric field instability in floid with [NASA-CR-93335] on place predicts of place of Stabilization of materials for substrate and base of average with hydrated lime, cement, and asphalt ment, and asphalt 10 p1617 N68-20393 Stability-theoretic proof of stabilizability of controllable processes [MRC-TSR-822] 11 p1675 N68-20596 Basic requirements for rectifiers and systems of sta-bilization for ion currents [FTD-MT-24-90-67] 11 p1765 N68-21642 Stabilization of intermetallic uranium alloys with ternary add [BMWF-FBK-67-88] c phases of aluminum-12 p1892 N68-22930 Stability criterion for [NASA-TN-D-4203] 15 p2434 N68-26640 Invariance of composite pulse program control and stability of discrete compensator described by pulse transfer function 18 p3050 N68-29829 Stabilization and control system sensitivity to power-off failure rate studied by simulated missions using block power switching [NASA-CR-86085] 18 p3170 N68-30152 Stabilization of high current secondary emission [SLAC-PUB-405] 19 p3281 N68-31905 Flight control systems and electronic stability aug-entation systems for advanced aircraft 20 p3403 N68-33186 Describing functions for stability analysis of integral ulse frequency modulated unity feedback closed loop [NASA-CR-96783] 21 p3674 N68-34594 mpedance of channel sority charge carriers 23 p4033 N68-37315 Stabilization of input le transistors by extraction of min

STABILIZED PLATFORMS

platforms [FTD-MT-64-536]

Equations and numerical and drift in gyroscopes, gyroc

06 p0845 N68-15544 Approximation method and motion equations for termining systematic drifting of triaxial stabilized atform due to angular oscillations 06 p0845 N68-15546 Geometric inertial navigation system with horizon-ily oriented gyrostabilized platform tally oriented gyrostab [FTD-HT-23-573-67] form 07 p1022 N68-16744 Structural design and er meline Voyager spacecraft, lanetary scan platform neering mechanics of ropulsion support, and planetary scan platfo [NASA-CR-93562] 09 p1434 N68-19104

alyses of motion stability omnumes and stabilized

Automatic balancing system for frictionlessly sup-ported, attitude control test platforms about axes commonly orthogonal to gravity [NASA-TN-D-4426] 09 p1315 N68-19185 lation system design 10 pt528 N68-19642 Precision tilt and v [NASA-TR-R-281]

Platform stabilization b integrated gyros [BMWF-FB-W-68-34] rvo loops with gas bearing 21 p3722 N68-34162

Effect of stochastic disturbar bilized platform with gas bearin [BMWF-FB-W-68-36] ces on behavior of sta-21 p3691 N68-34197

Technical stand and require bles for testing gyroscope ements of sidereal turnta-and position indicator 22 p3879 N68-35706 [BMWF-FB-W-68-47]

Performance test di titude control system of [NASA-TM-X-1677] onia resistojet at-23 p4160 N68-36512 Motion analysis of tri-(WHOI-REF-68-42)

24 p4254 N68-38358 STABILIZERS

Literature survey of late data on comtruction and performance of gyroscopes and accelerometers [NLR-V-1959] 10 p1531 N68-20446 STABILIZERS [AGENTS]

Gamma ray effect on synthesis of organo-tin stabil-izers and catalysts for vinyl chloride plastics and polyesters

07 p0959 N68-16791

Tricarbonyl mangane silicone fluid lubricants (FTD-HT-67-226) se as stabilizing agent added to 18 p3099 N68-30482 Stabilization methods to prevent thermal degrada-tion of polyvinyl chloride polymers [TRANS-1526] 22 p3827 N68-35518

STABILIZERS (FLUID DYNAMICS)

Fin/spin stabilization methods used in design of im-roved Athena vehicle 04 p0583 N68-13584

Semiconductor device for use as altimeter or allitude stabilizer in aircraft flight control [CEA-R-3281] 10 p1532 N68-20527 10 p1532 N68-20527

Stabilizer and tail assembly effects on overall aerodynamic characteristics of lifting bodies at hypersonic speeds [NASA-TM-X-1620]

18 p2995 N68-29952 Two proposed stabilization methods for X-15 orizontal surface control system NASA-CR-95955] 19 p3204 N68-31411 [NASA-CR-95955]

Reliability and maintainability tests of airborne lydraulic fluidic components and systems [USAAVLABS-TR-68-36]

24 p4202 N68-38424

STABLE OSCILLATIONS

Oscillator stability in range and range rate tracking [NASA-CR-80891] 05 p0631 N68-14819 Parametric oscillator with several stable states of frequency for use in digital computer design 06 p0806 N68-15257

Excitation of parametric oscillators, amplitude of oscillations under steady-state operating conditions, and power relationships in parametrons

06 p0817 N68-15259

Influence of dry friction and inertia of actuating elements in study of stable oscillations and conditions for existence in automatic control system with doubling ac-06 p0818 N68-15286

Operational performance tests on dry lubricated ball bearings under simulated gimbal oscillation in vacuum [NASA-TM-X-53707] 10 p1533 N68-19731

Effect of direction of interplanetary magnetic field [NASA-CR-96139] 19 p3271 N68-31553

STACKING FAULT ENERGY

Equations for stacking fault effects on diffraction atterns on 110 and 321 planes of BCC structures erived and compared with faults on 211 planes (R-11) (TR-11)

Effects of cold work on X ray diffraction line posi-tions of rolled slabs of thorium and of thorium fillings in terms of stacking fault probabilities determined by 11 p1711 N68-20823 BARC-298]

Electron microscopic and resistivity measurements on ordering processes in iron chromium nickel alloys 22 p3888 N68-35087

STACKING FAULTS U CRYSTAL DEFECTS

STACKS

Wind direction and velocity effects on calculation ventilation stack height for dispersing radioactive con [JPRS-43977]

05 p0697 N68-13922 STADAN (SATELLITE TRACKING NETWORK)

Automated multifunctional receiver for space racking and data acquisition network, manned space flight network, and deep space network [NASA-TM-X-63057] 04 p0480 N68-13560

Portable automatic calibration tracker to improve angular calibration of antennas and radio satellite tracking systems in STADAN /Satellite Tracking Net-

[NASA-TM-X-63116] 08 p1150 N68-18181 Digital data quality monitor for Nascom network data transmission system applications [NASA-TM-X-61062] 13 p2030 N68-24154

Systems analysis of electrical grounding system for lightning protection of STADAN [NASA-CR-94682] 14 p2234 N68-24516

Automated ground station software program to con-trol four tracking links by single computer [NASA-TM-X-63335] 23 p4021 N68-36773

STAGE SEPARATION

Simulation of stage separation in European I spacecraft 02 p0272 N68-11833

Development of steam generators for operating ejector stages of rocket altitude simulating test stands [BMWF-FB-W-68-23] 14 p2191 N68-24798 Measurement and analysis of Mariner type spacecraft separation transient response 14 p2364 N68-25526

Susceptibility of Apollo service module to mechanical shock transmitted from pyrotechnic separation line 14 p2365 N68-25527

Voltage breakdown failures and anomalies during unch vehicle first stage separation - potential dif-rences between two stages of vehicle separation - potential 15, 2014 No. 15 p2443 N68-26884

Short circuit anomalies occurring at separation of Agena rocket from booster 15 p2443 N68-26885

rospace vehicle stage and shroud separation [NASA-TM-X-1607] m systems devel evelopment 17 p2976 N68-28869

Design, development, and testing of device for m suring spatial orientation between separating S-2 and 4B stages of Saturn 5 [NASA-CR-61888] 18 p3074 N68-300 18 p3074 N68-30086

Small water-graphite nuclear rocket stages com-ared with chemical upper stages for use in unmanned spacecraft [NASA-TN-D-4827] 22 p3910 N68-35073

Static and dynamic characteristics of wind tunn odel of parallel staged reusable launch vehicle durin stage separation [NASA-TN-D-4765] 23 p4175 N68-36106

Acceptability of missile stage separation devices [ONERA-TP-615] 23 p4161 N68-37155

STAGING [ROCKETS] U STAGE SEPARATION

STAGNATION FLOW

Multifluid theory for stagnation flow of supersonic partially ionized monatomic gas over biased blunt body (SC-RR-67-289) 02 p0252 N68-11183 Nonsteady stagnation point flow around reentry 05 p0722 N68-13925

Stagnant film concept of mass transfer in crystal

TR-0158/9230-03/-1]

09 p1405 N68-18269 Wall injection area and axial bypass effects on flow attern of stagnation surface in radial inflow vortexes NASA-CR-1028] 12 p1904 N68-22088 NASA-CR-1028]

Laminar flame propagation equations in stagnation flow using flat flame diffusion burner [NASA-CR-95729] 17 p2988 N68-29504 17 p2988 N68-29504 Creeping flow solution of Leidenfrost boiling on moving surfaces [NASA-TM-X-52443] 19 p3202 N68-31094

19 p3202 N68-31094 Steady melting of infinite body perpendicular to stream of hot fluid 20 p3464 N68-33075

Rarefied gas flow analysis near forward stagnation point of blunt hypersonic body 22 p3862 N68-35612

Shape and velocity of single air bubbles rising in small diameter tubes in stagnant and flowing liquids 23 p4043 N68-36053

Aerodynamic heating during surface ablation in stag-nation region of blumt graphite body [NAL-TR-149] 23 p4187 N68-36516

Magnetohydrodynamic stagnation point flow studied by differential equation system and numerical analysis 23 p4141 N68-36740

STAGNATION POINT

Computations of laminar boundary layer with chemi-cal reactions in neighborhood of stagnation point for body of revolution 01 p0153 N68-10987

Convective stagnation heat transfer of carbon dioxide, nitrogen-argon gas mixtures compared to air in shock tube tests [NASA-TN-D-4255] 02 p0292 N68-11811

02 p0292 N68-11811 Large surface enthalpy effects on stagnation point shear, and heat transfer in axisymmetrical body flow [TR-0158/3240-10/-2] 04 p0494 N68-13226

Nonsteady stagnation point flow around reentry body 05 p0722 N68-13925

Approximation method for calculating heat, and mass exchange in laminar multicomponent boundary layer near stagnation point of injected gases [NASA-TT-F-11389] 05 p0756 N68-14646

Velocity similarity rule relating compressible flow elocity on general round leading edge to incompressi-le velocity and angular displacement from stagnation

NPL-AERO-1053] 06 p0825 N68-15317 Nonlinear integro-differential equation for radiant gas flow near stagnation point of blunt bodies 06 p0928 N68-16036 SUBJECT INDEX eat transfer and Prandtl number effects studied incompressible viscous fluid at three dimensional [RE-316] 07 p1095 N68-16600 Interaction effects of plasma body in presence of strong magn [UTIAS-TN-122] na flowing around blunt metic field 07 p1064 N68-17071 Flow and electric field effects on response of stagna-tion point mass spectrometers [ASE-1761] Effect of external vortex on boundary layer at ax-ymmetric stagnation point determined by rheoelectrical technique [ONERA-TP-507] 12 p1860 N68-22149 Exact solutions of boundary layer equations for pseu-oplastic fluids on porous flat plate and near stagnation FTD-HT-23-587-671 13 p2055 N68-24232 stagnation point flow in ydrodynamics 15 p2528 N68-26010 Inviscid three dimensional str hydrodynamics and magnetohyd Fluid flow analysis on viscous merged shock layer with nonequilibrium chemical reactions in stagnation region of reentry vehicle [Tk-0158/3240-10/-8] 15 p2454 N68-26412 Pressure distribution in study of axisymmetric blunt body stagnation point velocity gradient in hypersonic [AEDC-TR-68-99] 18 p2993 N68-29683 Numerical analysis of interface layer generated by osic jet directed against supersonic stream using oundary layer equations for stagnation point flow MC-66-268-R1] boundary layer equa [MC-66-268-R1] Mathematical model used to calculate effect of free stream turbulence on stagnation point heat transfer from circular cylinders in cross flow [ARL-68-0022] [8 g-3061 MAR-30022 Supersonic rarefied gas flow at stagnation point of [NASA-TT-F-11797] 18 p2998 N68-30367

Navier-Stokes equation for calculating hypersonic viscous gas flow around sphere near stagnation point [NASA-TT-F-11642] 19 p3266 N6E-31947 Effects of wall temperature and magnetic field on flow field at stagnation point in low Reymolds number [RM-5340-PR] 20 p3391 N68-32515 Free stream turbulence influention zone heating (AFFDL-TR-67-195) ence on hypersonic stag-

20 p3609 N68-32615 nt heat transfer in partial ized nitrogen Convective stagnation-equitibrium flow of highly [NASA-TM-X-61187] d nitrogen 21 p3796 N68-34754

nt-heat transfer relation in y potentials 22 p3979 N68-35468 Empirical stagnation point-he gas mixtures at high enthalpy pote [NASA-TN-D-4799] Aerodynamic study of ablation near region of stagna-tion point of axisymmetric bodies at hypersonic speeds {ISAS-425, V. 33, NO. 7} 22 p3979 N68-35659

Magnetic field effect on stagnation point flow past unt body in presence of ablation of electrically con-acting shield ducting shield 23 p4186 N68-36336

Stagnation region of shock layer in high velocity flow of hydrogen-oxygen over blunt bodies [MICH-8-PU] 23 p4186 N68-36344 Species separation by stagns spersonic flow tion of gas mixtures in

24 p4244 N68-37643

STAGNATION PRESSURE

Association of stagnating anticyclones with incidents of heavy air pollution in eastern United States from 1936 to 1965 [PB-174709] 03 p0365 N68-12615

Transition from supersonic to subsonic flow in tube at low Reynolds numbers and different stagnation pres-11 p1683 N68-20777

erature profiles on cold ary layers 17 p2874 N68-29385 Stagnation pressure and ter wall turbulent hypersonic box [AASU-275]

STAGNATION TEMPERATURE

Vortex effects on stagnation temperature for flow of viscous gas in turbines [FTD-MT-67-47] 15 p2381 N68-26301 Stagnation pressure and temperature profiles on cold wall turbulent hypersonic boundary layers [AASU-275] 17 p2874 N68-29385

STAINING

Staining techniques for ultrathin sections for elec-tron microscopy and for thick sections for conventional microscopy (ISS-67/26) 11 p1657 N68-21701 STAINLESS STEELS NT AUSTENITIC STAINLESS STEELS NT MARTENSITIC STAINLESS STEELS

Stainless steel oxide film formations studielectron microscopy and electron diffraction [EURAEC-1757] 01 p0074 N6 n diffraction 01 p0074 N68-10257 Warm prestressing of pressure vessel steels [KAPL-F-3350] 01 p0079 N68-10918

Axial tensile fatigue of liquid rocket engine alloys at [NASA-TN-D-4274] 02 p0222 N68-11637

Creep tests with titanium hardening stainless steels, and mi (NASA-CR-91119) alloys, precipitation naraging steels 03 p0349 N68-11935 Surface treatment effects on stainless steel corrosion

[EURAEC-1709] 03 p0352 N68-12380 Stainless steel clastor vessel construction (EURAEC-1813) ng of heavy gage steels for reac-

03 p0347 N68-12440 Characterization and cladding-fuel evaluation of minless steel uranium oxide fuel elements for nuclear reactors (ORNL-TM-1676)

03 p0377 N68-12610 Cathodically charged by propagation in stainless steel [GEAP-5415] ogen effect on crack 03 p0353 N68-12686

Fracture strength of marag solid propellant rocket engine subscale precracked specimens [FA-R-1863] ing and stainless steel cases evaluated using 03 p0411 N68-12802 Hydrogen stress cracking of stain [TR-0158/3250-10/-6] cas steel

04 p0520 N68-13112 EURAEC-18961 05 p0673 N68-14117

Stainless steel aluminum transition joint for use at levated temperatures in heavy water organic cooled reactors [AI-CE-72] 05 p0693 N68-14357

Corrosion of stainless steel and high nickel content alloys in high temperature superheated steam [EURAEC-1895] 05 p0675 N68-14480

rosion tests on carbon, and od hot water 05 p0678 N68-14779 Static, and dynamic of stainless steels in pressur [EUR-3388.F]

astelloy C, Haynes alloy sorine environments 05 p0628 N68-14906 Behavior of stainless ste 25 and tastalum in hydrog [SC-CR-67-2656] Radiation and heat treatment effects on mechanical roperties of stainless steels for cladding applications in quid-metal-cooled fast reaction

06 p0871 N68-15013 Plastic and fatigue properties of heat resistant stain-s steels for nuclear reactors

06 p0853 N68-15356 irconium alloy and stainluide fuel elements for me teel clad with uraniu

wn environments 06 p0787 N68-15360 Tungsten-stainless steel strature measurement of or for averaging tem-NASA-TN-D-4242] 06 p0847 N68-15936

Computer program echniques and diffe etting of 316 stainler [IS-T-205]

07 p1009 N68-16715 num, and magnesium as steel, and formation nesium chloride [EURAEC-1918] 07 p1010 N68-17005

Performance eval optical reflecting ele [NASA-CR-93289] d stainless steel as 08 pl185 N68-17616

Environmental exposure el perties of titanium alloy, stai loy, and composite material sh [NASA-TN-D-4318] effects on mechanical pro-stainless steel, aluminum al-

08 p1186 N68-17897 r coefficients for elec-ainless steel foils 08 p1215 N68-17898 Transmission, and be tron irradiated aluminum [NASA-TN-D-4363]

Gross surface corros stainless steels, and titar [TR-0158/3210-10/-4] of magnesium, aluminum, in nitrogen tetroxide

09 p1412 N68-18305 nalysis of resistance spot steel allows Tensile strength and X ray as welded aluminum and stainless [NASA-CR-61596] teel alloys 09 p1347 N68-1877?

Metallurgical, and mecha-on stainless steels for liquid in [MSAR-67-216] cal property evaluations tal application 09 p1353 N68-19053 casting and powde INASA-SP-50861 09 p1348 N68-19307

curburizing, nitridi plunishing, and p stainless steels [NASA-SP-5090]

DP-11021 09 p1380 N68-19490

istance of struc-NASA-TM-X-524]4] Effects of alkali liq stainless steel corrosion [NASA-CR-93727] tal gettering agents on 10 p1339 N68-19801

Organic and inorgainless steels and p esives for bonding of NASA-SP-5085) 10 p1534 N68-20056

Wear rate and friction coe polymer laminates determin ficient of steel sliding on d in liquid nitrogen and NASA-TN-D-44631 10 p1535 N68-20325

Effects of cobalt addition of AM 350 stainless steel [BM-RI-7121] precipitation hardening 11 p1711 N68-20824

Ultrasonic method for a estructively detecting at in pressure vessel [BNWL-SA-1467] 11 pi703 N68-20950

of anodic contings for corro-m of stainless steels 11 p1704 NSS-21011

Stress corrosion of stainless steels and roles of sustenite, martensite, and platinum in corrosion re-(QR-18) 11 p1713 N64-21071

Machining and grind and stainless steel alloys [NASA-SP-5084] 11 p1706 N68-21241

(NASA-SP-5087) 11 p1707 N68-21429 c joints tested to determine overall strengt INASA-TM-X-15401 ned joint 12 p1881 N68-21898

Quantitative corre of carbon meter reading n of 304 stainless steel in [UNC-51871 12 p1835 N68-22405

Brazing aluminum to titanier to minimize formation of inter n couted stainless steel metallic compounds in NASA-SP-50401

12 p1883 N68-22778 Strength characteristics of solder joints of titanium alloys with stainless steels and steel 13 p.2075 N68-23836

dos seel and host re-ne regenerators 14 p2271 N68-24890 Corrosion resistance of str sistant alloys in gas turbine en (HT-67-2512/3/)

Chemical contr nickel base alloys [D-MAT-144] 14 p2273 N68-25289

spark-source mass spe (ONERA-NT-125) 14 p2218 N68-25303 Decontamination t stainless steel slabs [CEA-R-3312]

14 p2316 N68-25307 Corrosion rates for 8 ment used in sirconium [IN-1134] d staidlets steel equip-clear fuel reprocessing 14 p2275 N68-25603

resistance of stain! [EURAEC-1973] 15 p2480 N68-25815

covered staining of a and aerial fallout 15 p2392 1668-239 Survival of microo [NASA-CR-94923]

Microstrale perties of ac minum joints [QPR-3] f micromochanical pro-tainless steel and alu-15 p2568 N68-24126

(EURAEC-1947, PT. 2)

15 p2483 N68-26261 niess smel, resctivity and use as res [WARD-3791-13] 15 p3484 N68-26554

after irradiation at h (ORNL-TM-2130) 15 p2503 N68-26673

SUBJ

INOL. Stea celeral [BNL-STANDS U SU

STANNA

Rapi

of depo

STANNII

Piezo IS-T-1 Latti by relat Then (IS-171 STANTO

> Impor aureus si NASA-NASA-Distril microcol Potent human si [NASA-4

fects on

Mars env

STAR CLU

STAPHYL

Cygni, an Binary netic field

Orbital

equilibrium NASA-T Determi (NASA-T)

Photogra 5617, Ly 2

Results of

compared w

Age deter

Corrosion rates and general electrochemichal behavior of nickel, iron, and nickel iron alloys in sulreatments for improved wear and corrosion if stainless steel journals in water 32] 24 p4270 N68-38346 [AECL-2732] 16 p2610 N68-27782 STALL Stainless staal penetration detector, impact detector, and solar cell degradiation, to study microseteoroid impact damage and puncture rate, and radiation effects on Explorer 23 satellite
[NASA-TN-D-4284] 16 p2774 N68-28198 BOUNDARY LAYER SEPARATION STALLING Slipping blade stall analysis for axial flow compressor [FTD-MT-24-175-67] 15 p2381 N68-26472 effects on mechanical pro-STAMPING Cold stamping and welding techniques for manufac-turing of parts for gas turbines [FTD-MT-67-18] 18 p3080 N68-29970 16 p2685 N68-28204 Fatigue behavior of stainless steel under cyclic plastic strain resulting from differential expansion of cludding and uranium dioxide reactor fuel [TRG-135/3/] 17 p2915 N68-28944 Pulsed magnetic field methods of metal stamping at high energies [FTD-MT-24-144-67] Effects on heat flux rate of heating surface material sing plated and unplated stainless steels during ucleate boiling 18 p3082 N68-30508 Hot stamping of alum [FTD-MT-66-83] 20 p3495 N68-32397 18 p3186 N68-29900 ng shape and rate of plastic sping and pressing of sheet

Methods for determining shadeformation during stamping Experimental verification of temperature distribu-tion in steels after exposure to neodymium laser pulsed radiation [FTD-MT-24-129-67] 23 p4068 N68-36605 Pulse count chronometer method for determined deformation of blanks during high speed stamping 23 p4068 N68-36606 18 p3091 N68-30253 Resistance spot welding stainless steel foil by ex-endable wire technique

18 p3081 N68-30455 Relating ferrite decomposition and associated precipitates in stainless steel to its corrosion resistance [FTD-HT-67-223] 18 p3093 N68-30484 intergranular corrotion on carrow and intergranular corrotion on and nickel alloys in boiling water reactor loops on and nickel alloys in boiling water reactor loops on an annual section of the section iron and nickel [AECL-2800]

Development and testing of double containment talum-stainless steel mercury boiler for SNAP 8 spa POWER SYSTEM [NASA-TM-X-32452] 19 p3309 N68-31043 Cyclic incident radiation method for measuring ther-mal emittance and absorption properties of metals at

cryogenic temperature [NASA-TM-X-1618] 19 p3385 N68-31498 Design and construction of stainless steel atomic ox-ygen beam system for solid surface bombardment [NASA-CR-96136] 19 p3227 N68-31524 Boron segregation in boron stainle [KAPL-M-6731] 19 ninless steel alloys 19 p3294 N68-31706

Characterization of dislocation distribution in titani-m stainless steels after static and prolonged cyclic

20 p3498 N68-32675 Helium embrittlement type 316 stainless steel [Al-AEC-12670] 20 p3502 N68-33040 Residual stress effects on fracture strength of AISI 301 stainless steel and Ti-SAI-2.5Sn titanium cracked thin walled cylinders (NASA-TN-D-4777)

20 p3604 N68-33191 Permeation and diffusion of nitrogen, oxygen and rare gases through stainless steel [LA-3909-MS] 20 p3503 N68-33236 Fiber metal acoustic material development and test-

ing for jet aircraft noise attenuation [NASA-CR-66643] 22 22 p3894 N68-35186 Corrosion of chron ium nickel stainless steels in lithi-[FTD-MT-24-262-67] 22 p3891 N68-35323

Cavitation damage of stainless steel, nickel, and aluminum alloy in water
[NASA-TM-X-1670] 23 p4074 N68-36076

High temperature recip tion evaluation machines, cating-type wear and friction evaluation machines, and evaluation test run data on titanium alloys, steel H-11, and stainless steel 410 [NADC-MA-6802] 23 p4067 N68-36217

Effect of remelting and argon purging on properties of EP 65 stainless steel [FTD-HT-67-201] 23 p4076 N68-36647 Fast neutron irradiation effects on nuclear fuel ele-neutron and cladding materials

23 p4104 N68-37222 Design and performance of boron nitride stainless steel heat flux heater [Al-AEC-12681] 24 p4292 N68-37451

Electron microscopy analysis of effects of liquid audium on 304 stainless steel [TID-24602] 24 p4267 N68-37823 24 p4267 N68-37823

Corrosive effects of high temperature liquid sodium on mechanical properties efstainless steels
[MSAR-68-77] 24 p4267 N68-37892 Thermal gradient effects on stress rupture behavior thin walled stainless steel tubing

24 p4348 N68-37908 [Al-AEC-12695] Blank deformation mechanics, high velocity metal deformation, strain rate effects, properties of alu-minum alloy and stainless steels explosively formed, and electrohydraulic for [AMRA-CR-66-05/14] 24 p4262 N68-38082 STANDARD DEVLATION Standard deviation charts for monthly average tem-erature and temperature function analysis 19 p3304 N68-31731

STANDARD ATMOSPHERES
U REFERENCE ATMOSPHERES

Scheme of notation and nomenclature for aircraft dynamics and aerodynamics [RAE-TR-66200, PT. 1]

04 p0433 N68-13135 Development of precision connector type in-(BDX-613-98) 05 p0664 N68-14714 Standardization p

sal for methods and instrumentation to measure aircraft sonic booms [ISL-T-23/67] 06 p0844 N68-15270

Pendulum measurements taken with Cambridge and Italian Geodetic Commission apparatus along with first order world gravity net and standardization data [AFCRL-67-0524] 06 p0839 N68-15691 Bibliography on radionuclide star [PB-176049] 07 07 p1039 N68-16202

Establishment and utilization of film dosimeter per-[BNWL-542] 13 p2048 N68-23797 Convergent nozzle for standardization of thrust rig

14 p2236 N68-24947 Measurements and standardization efforts of in-vidual and community reactions to aircraft noise NC/C4/P9] 14 p2188 N68-25522

Standardization of symbols representing targets on TM-5-681 16 p2604 N68-27337

Standardization of pure beta-emitting nuclides using addified efficiency technique 18 p3140 N68-30851 [PEL-162]

Standard performance accuracy test and data analysis methods for gyros [MDC-TR-67-148] 19 p3277 N68-31393

Evaluation and testing of packagings for transport of radioactive materials in accordance with applicable international regulations ternational regulations [EUR-3485.E,F, V. 2] 20 p3492 N68-33603

Standardization of ceric sulfate solution for titration [LA-3841] 23 p4011-N68-36763 STANDARDS

NT FREQUENCY STANDARDS NT REFERENCE ATMOSPHERES

Primary standards for checking calibration of equip-tent for measuring small capacitances (REPT-670) 02 p0212 N68-11402 Deadweight facility for calibration of force meaning devices up to 300 lbs maximum load in increment

steps of 10 lbs [NRC-9772] 02 p0195 N68-11704 Dynamometer and balance standards and facilities [ONERA-TP-452] 03 p0343 N68-12356

Reference sources for calibrating semiconductor plus spectrometers 03 p0392 N68-12504 Basic safety standards for radi

04 p0460 N68-12873

Monolithic circuit test standards and methods for ime certification [NASA-CR-91346] 04 p0486 N68-12972

Radionuclide selection and radiation protection andards for timepieces with radioluminous painted 04 p0508 N68-13237

New standards for shock wave equation of state 04 p0592 N68-13888 Provisional potable water standards for aerospace

applications [AMRL-TR-66-252] 05 p0614 N68-14365 Josephson effect in tunnel junctions and point con-cts to maintain reference standards of electromotive

05 p0728 N68-14458 Gravimetric standard for primary gas flow measure-

07 p0994 N68-16138 [K-L-6181] Tabulated definitions and conversion factors for changing German and Anglo-American measuring units to international system of units

09 p1385 N68-19446 Calibration procedure for alternating current absolute voltage standard [NAVAIR-17-20AH-20] 10 p1527 N68-19528 X ray wavelength standards, and reevaluated X ray

atomic energy level [NSRDS-NBS-14] 10 p1567 N68-19820 X ray wavelength standards and reference values 10 p1567 N68-19821

Electrochemical studies on acidity standards, glass ectrode behavior, ionic equilibria, conductance idges, and hydrogen fluoride titration bridges, and hyd (NBS-TN-423) 12 p1837 N68-22535

Describing and estimating standards for missile plumbing leak fittings [NASA-TM-X-53692] 13 p2073 No8-23467 Properties of dynamometer type alternating current standard

14 p2255 N68-24682 Specifications for standard nuclear instrument modules [TID-20893, REV. 2] 14 p2258 N68-25273

Calibrated reference blocks for ultrasonic non-estructive materials testing 15 p2472 N68-25811

National Bureau of Standards annual report on In-titute for Basic Standards, Institute for Materials Research, and Institute for Applied Technology -1968 15 p2449 N68-25959 Clock for transferring time standard over great

es in vehicles such as aircraft 18 p3071 N68-29636 [RAE-TR-67296] Laser standards research, and optical and chemical reperties of laser materials

19 p3288 N68-31464 Users guide to chemical and counting problems for radioactivity standards [NP-17502] 20 p3429 N68-33012

Characteristics of experimental prototype of ab-solute radiometer 21 p3690 N68-34126

Pyrheliometric reference scale for world radiometric 21 p3690 N68-34127

Standards for chemical analysis of phosphorus [FTD-MT-66-160] 22 p3824 N68-35347

Microwave power standard by measuring direct cur-ent substitution for radio frequency power REPT.-680] 22 p3849 N68-35733 [REPT.-680] Standards used in reading machine cross correlation

and pattern recognition [FTD-HT-23-504-67] 23 p4026 N68-36482

Numerical analysis of electron bunching in accelera-tors with standing waves [FTD-MT-66-159] 04 p0547 N68-13040 Amplitude calculation of beam induced field in standing wave linear accelerators
[BNL-12231] 14 p2299 N68-24984 14 p2299 N68-24984 Nonlinearity near cyclotron resonance in interaction of standing electromagnetic waves with electrons of magnetized plasma [NP-17361] 14 p2319 N68-25495

Observation of vertical oscillations of lower solar photosphere 15 p2554 N68-26514

Cross wave resonant instability of Faraday waves [TR-2] 16 p2642 N68-27102 Electromagnetic mic micropulsations from electrojet

16 p2652 N68-27216

Magnetoresistivity of single crystal potassium mea-sured by resonant frequency of helicon standing wave 17 p2958 N68-28815 Effect of translational boun wave patterns of elastic media [NOLTR-68-92] dary motion on standing 20 p3535 N68-32371 Steady state beam loading of standing wave linear ac-celerator RF system (BNL-12589) 23 p4107 N68-36346 STANDS U SUPPORTS STANNATES Rapid method developed for determining quality of deposited stannate immersion coatings CCL-252] 22 p3882 N68-35374 of deposited (CCL-252) STANNIDES NIOBIUM STANNIDES intance tensor components annide from 50 to 300 deg K 08 pl222 N68-17281 (IS-T-1981 Lattice thermal conductivity of magnesium stannide by relaxation time measurement 15 p2538 N68-26322 nal conductivity of magnesium stannide 21 23 p4154 N68-36847 (IS-1712) STANTON NUMBER Friction coefficient and Stanton number for high temperature, subsonic, turbulent gas flow in round tabes 02 p0287 N68-11691 STAPHYLOCOCCUS Importance of Bacillus cereus and Staphylococcus areus survival and growth to extraterrestrial planetary [NASA-CR-91291] 04 p0450 N68-12847 Simulated spacecraft cabin and controlled metabolic conditions study to determine potential hazard of staphylococci and micrococci to human subjects [NASA-CR-91678] 05 p0610 N68-14330 Distribution of indigenous staphylococci, and icrococci in human subjects during life support simution at elevated cabin temperature [NASA-CR-92557] 06 p0773 N68-15701 Potential hazard of staphylococci and micrococci to human subjects in life support systems [NASA-CR-93778] 10 p1463 N68-19968 Incubation temperature and salt concentration ef-Mars environment [NASA-CR-94790] 14 p2200 N68-24999 STAR CLUSTERS
NT PRAESEPE STAR CLUSTERS Astronomical photography, tables and data on variable stars 02 p0268 N68-11799 Motions of open cluster IC 4996, OB-stars near P Cygni, and open cluster NGC 2301 stars [REPT.-76] 03 p0413 N68-12048 Binary star properties, effects of rotation and mag-netic fields on formation of single and multiple stars, scission and novae, and other aspects of stellar evolu-05 p0738 N68-14694 Orbital elements and distribution of multiple star stems among visual and spectroacopic binaries 05 p0739 N68-14698 Formation and disruption of binaries in near equilibrium star cluste [NASA-TT-F-11541] 08 p1242 N68-18137 Determination of helium abundances, and luminosity of horizontal branch stars [NASA-TM-X-63109] 08 p1242 N68-18173 Photographic magnitude of stars in clusters Tr 22 ad Ho 17 13 p2152 N68-24025 Photographic magnitudes of stars in clusters NGC 5617, Ly 2, and Tr 12 13 p2152 N68-24026 Results of photoelectric in nearest galactic clusters electric search for beta Cephei stars 14 p2342 N68-24482 Photographic measurements of stellar spectra and magnitudes in open star clusters NGC 2483 and NGC 2489

1

2

4

15

14

12

16

INASA-CR-926711 Attitude control of sounding rockets by inertial and ellar sensor for stellar oriented experiments.

08 p1199 N68-17420 Simple processors of star tracker commands for stabilizing inertially oriented satelli [NASA-TN-D-4490] Design and operation of automated stellar proper motion measuring system [NASA-CR-94336] 12 p1874 N68-22454 Maximum likelihood techniques for design of op-mum star trackers that determine position and mag-14 p2347 N68-25262 NASA-TN-D-45491 Late evolution sequences for stars of various masses compared with color-magnitude distributions of yellow and red giant stars observed in open clusters 14 p2348 N68-25409 Optical star tracker calif [NASA-TN-D-4594] Age determination of open clusters 14 p2348 N68-25582 Horizon scanners es

Photometric measurements of open clusters NGC 2533, NGC 2567, NGC 2571, and Ru 58 14 p2349 N68-25583 tral classification, photometry, and surface dis-on of stars in region of Cepheus 4 association 18 p3161 N68-29698 Spectral class er M13 motions, magnitudes, and color 20 p3586 N68-32688 Star cluste (RTS-4134) Initial collapse and dynamical mixing of spherical 21 p3769 N68-34222 STAR DISTRIBUTION Orbital elements and distribution of multiple star systems among visual and spectroscopic binaries. 05 p0739 N68-14698 Correction of zenith distance 7094 computer at Danjon astrola ce between stars by IBM 08 p1235 N68-17330 Soviet bloc research in planetary origins, solar at-sosphere, luminosity functions, star density, and radio 15 p2557 N68-25823 oltzmann and Poisson equi and gravitational pote els for disk like galaxies ations for stellar distribu-ntial in self consistent 17 p2965 N68-28349 Star field mapping tech e for determining attitude of spin stabilized [NASA-TN-D-4637] 17 p2910 N68-28418 Two dimensional computer model for collisionless self gravitating galactic system with gravitational field obtained from Poisson equation [NASA-TN-D-4646] 7 p.2969 N68-28884 Spectral classification, photometry, and surface dis-bution of stars in region of Cepheus 4 association heus 4 association 18 p3161 N68-29698 Computer programs for re btain astronomical latitudes on of stellar data to obtain astronos 19 p3272 N68-31726 tribution of spherical stellar systems
20 p3593 N68-33604 [RTS-4663] termining variations in errors of instruments for uring star positions 21 p3691 N68-34236 Updating and FK4 revision procedures for Moscow ar delineation catalogs 23 p4167 N68-36493 Catalog of 549 stars in regions G226 through G235, cluding 8 white dwarf suspects, found by direct mea-arement of proper motions in Northern Hemisphere 23 p4174 N68-37391 Cost data for horizon defin on experiment, and star sighting listings for star field mapping [NASA-CR-66702] 24 p4358 N68-38445 STAR TRACKERS trol system for stellar interferometer 04 p0507 N68-13124 Automatic contro [FTD-HT-66-366] NT Stability analysis algorithm for estimating equilibrium state of OAO control system
[NASA-CR-73164]

04 p0584 N68-13613 Electronic star occultation parameters for space navigation during Gemini 10 flight 05 p0686 N68-14163 Radio telescope photoelectric balance method of studying star image vibrations [FTD-HT-66-596] 06 p0848 N68-16078 or and beam co Two star simulator (NASA-CR-65943) 07 p0981 N68-16393 Thin film, solid state material deposition and fabrica-tion techniques for star detector strips with electronic readout for star pattern recognition from spinning

PRAESEPE STAR CLUSTERS PROTOSTARS RADIO STARS

07 p1068 N68-16822

09 p1373 N68-19236

13 p2103 N68-23377

n procedures 14 p2286 N68-24555

14 p2261 N68-25457

d for use in attitude con-

trol of stationary TV bro IDLR-MITT:-67-211

SUPERNOVAE VARIABLE STARS WHITE DWARF STARS

Interferometer positioning, calibration, and measur-g techniques for determining star coordinates in orth polar region

al and radio astronomy views of planets, stars,

Project Twinkle - aerodynamics and ballistics of Apache-Dart and Tomahawk-Dart rocket and parachise systems used to study atmospheric causes to startight scintillation /rwinkling/

04 p0584 N68-13598

04 p0579 N68-13670 Relativistic catastrophe for degenerate stars of high density at zero temperature

05 p0737 N68-14307

05 p0737 N69-14328 Light absorption spectra in atmospheres of late type

Gimbaled star trackers for satellite altitude con and guidance [NASA-TM-X-59724]

14 p2287 N68-25557 nered in design of star mical observatory 15 p2447 N68-26910

Stellar and inertial ser system for sounding suckets s for attitude co

19 n3202 N68-31091 Celestial attitude n mapping technique [NASA-TN-D-4742] 19 p3308 N68-31938

d error calculations for Stellar image fluctuation and hotoelectric tracking system d RTS-4527] 20 p3436 N68-32499

STARK EFFECT

Laplace transformation used for constructing ways functions for ground and lowest excited states of hydrogen atom - perturbation theory approximation 06 pdd87 N68-15935

rk effect of R center in potassium chloride 07 p1040 N68-16261 [NYO-2150-34] Molecular beam Stark effect resonance spectra for salts of intopic sodium, chlorine and bromine (UCRL-17916) 12 p1932 N68-22631

Far infrared spectrometer for direct observation of transistions between Stark split ground J-manifolds of rare earth iom in ethylsulphate crystals 13 p2016 N68-23730

Stark effect in color centers of several alkali halides [COO-1105-128] 15 p2544 N68-26857

Stark broadening of spec and need to include Debye sl [NASA-TM-X-59416] ctral lines in argon plasma hielding effects 16 p2736 N68-27559

Stark effect in studying solar abundance of light ele-19 p3362 N68-31057

Radio frequency Stark spectra of rubidium fluoride, abidium chloride, cesium fluoride, cesium chloride, nd sodium iodide measured by molecular beam elec-ic resonance method tric resonance me [UCRL-17909] 23 p4012 N68-36853

Absorption spectra of metal-free and metallic orphyrin due to Zeeman and Stark effects 24 p4210 N68-37423

A STARS
B STARS
BINARY STARS
CEPHEID VARIABLES
DWARF STARS
EARLY STARS
ECTI DESING BINARY ST

EARLY STARS
ECLIPSING BINARY STARS
GIANT STARS
HERCULES NOVA
HOT STARS
MAIN SEQUENCE STARS
NEUTRON STARS
NOVAE

NOVAE O STARS

SUPERGIANT STARS

02 p0194 N68-11010 03 p0413 N68-12087

GIER-ALGOL 3 for reduction of mean and apparent

Stellar convection zone growth rates of varying su-peradiabatic gradients derived along with correspond-ing eigenfunctions

06 p0914 N68-16038

THE SECTION

HARASELETT.

n method of analyzing inverter

21 p3667 N68-34061

Long term semiconductor requirements for static power conversion equipment [SRDE-67006] 13 p2138 N68-23982

STATIC INVERTERS

	Recombina	ation spec	trum (of stars	and pi	anetar
	2010/09/10			09 p14	18 N68	1864
4	Star photogerial camera NASA-CR-9	s aboard je 42901	t aircra	12 p19	65 N68	-2204
	Approxima	tion of st	ellar e	nergy di	stributio	ns an
i	NASA-TM-	(-63185)	d hinh	12 p19	69 N68	-2293
	sed for de	termining	spectr	al doub	let in	gamin officials
•				13 p20	109 N68	-2372
1	Elemental a au Bootis, a an other solar	nd metalli -type stars	c and	calcium :	bundan	ces fo
	Energy dis pectrograms amma Equul					
	Determinat	ion of stel	llar rad	lii by ph	41 N68 sotometr	y, an
ac al	Determinati aled solar to mospheric n	emperature sodels	e distri	bution fo	or consti 42 N68-	ructin
	Iris photom	etry of st	ars on			
1	hotographs NASA-CR-9	17071			44 N68-	
-	Astrometric	al studies	of refe	rence st	ers, cata	log er
[J	PRS-45452			14 p23	44 N68-	2465
ph	Catalog of iotography,	weak re	etry pr	oblems is 14 p23	u.S.S.I 44 N68-	2465
	Declination 60.0	errors in	GC cal	alog of	stars for	epoci
-					44 N68-	
ap	Astronomica here stars at	observator	ry in Cl	erving So		
	Computer pordinates of	rogram for	comp		55 N68- fastroni	
00	ordinates of	stars using	photo	rapha 14 p23	16 N68-	24972
wi	Determination of two ASA-CR-94	on of pho and three	tograp referen	hic posi ce stars	tion of 1	10
- 6	Atomic spec	tral schem	ne for			
	m spectra of				6 N68-	
wi	Statistical d th similar bri	eterminati ghtness	on of			
	Space naviga ASA-CR-82	tion using	star rei	erences	6 N68-	
					2 N68-	
tal		terminational coordi	n of ac	ro points system (of funda for faint	amen-
	RS-45787]			17 p297	0 N68-2	28887
tal	Photographic stars for fain	: observati t star cetal	on of g	alaxies a	nd fundi	men
				17 p297	U N68-2	28882
, tro	Determination nomical coo	rdinate sys	tem for	faint sta 17 n297	r catalog	8889
-	Photographic rlight using p	method f	or mes	suring p	olarizati	on of
	Optical study			18 p316	7 N68-3	0454
	12/40/2007			20 p359		
Bes	itructure and seral relativit	y stability	or rot	21 p376	R NAR. 3	4213
3	ray astrono positioning ASA-CR-897	my rocket of SCO X-	experi l stron	ment for g X ray s	identific ource	ation
Elen	ASA-CR-891 afrared irrad R-0158/3525	iance from	stars	21 p3//.	3 NOB-3	4710
			1	22 p396	N68-3	5950
Date	Observation duced by lun	and analy	rsis of	diffract	tion put	terns
coll	lydrodynami apse and ex itron pair pro	uplosion of	stars	induced	by elec	tron-
				to bette	N68-3	6692
(RA	tar tables for E-TR-6804	satellite at	titude	control 13 p4172	N68-3	7113
INA	SA-TM-X-4	3364)	stars an	d X ray s	N68-3	7682

STARTING	
Method for measuring st wind tunnels and prediction tered by cone-cylinder mod sional wind tunnel nozale [WRE-HSA-22]	arting loads in supersonic of dynamic loads encoun-
sional wind tunnel nozzle [WRE-HSA-22]	05 p0603 N68-14085
Maximum angular accel- ventilating mine fans during	eration characteristics of
	13 p2048 N68-23818
Starting characteristics of high frequency field in direct [NASA-TT-F-11730]	
Heat flux and flow chi modes of heat pipe startup [LA-DC-9026]	
Self priming methods for c	17 p2983 N68-28359 centrifugal pumps by inter-
(SP-911) STATE EQUATIONS	20 p3485 N68-32477
U EQUATIONS OF STAT	E
Approximation to time of	ptimal control linear state-
(D1-82-0675)	08 p1156 N68-17933
Dynamic programming an ble theory applied to accelere [NASA-CR-61870]	d inaccessible state varia- ometer design
Optimal control of discre	te time stochastic system
Optimal control of discre whose dynamic equations ar in state vector with random o	nd loss function are linear oefficients
(P-3631-1) Critical points of state ve	19 p3255 Nea-31171
time invariant, differential sys	stems 21 p3712 N68-33776
Variance of the state esti	
Kalman filters	21 p3656 N68-33843
STATIC AERODYNAMIC CH	ARACTERISTICS
Static aerodynamic charac in Mach number range 2.2 to [NASA-CR-94553]	9.5
Instruction manual for sta	tic structural analyses on
shell-type spacecraft structure [NASA-CR-912]	14 p2356 N68-24802
Subsonic and transonic stateristics data on 60 deg half-as [NASA-CR-95373]	atic aerodynamic charac- ngle cones 16 n2586 N68-28271
Static and dynamic chara model of parallel staged reuse stage separation	cteristics of wind tunnel
[NASA-TN-D-4765]	23 p4175 N68-36106
STATIC DEFORMATION Finite static deformation	and static electric field
combinations for elastic diele	trics 15 p2510 N68-26548
STATIC DISCHARGERS Fabrication and testing	of active electrostatic
discharger system for CH-47 t {DCR-224B}	nelicopter 09 p1269 N68-18467
STATIC ELECTRICITY Transistorized electric field	intensity meter
Transistorized electric field [TN-198]	
Complex methods based Ca for static two dimensional field [BNL-11762]	uchy-Riemann equations
[BNL-11762] Evaluation of antistatic con	08 p1208 N68-17337 tines for polystyrene con-
[NAD-CR-RDTR-111]	19 p3298 N68-31385
Precinitation static effects	on aircraft recention of
very low frequency signals as hyperbolic navigation system [P&B-PUBL979-8]	22 p3909 N68-35107
Control of static electricity film in vacuum [NASA-CR-97186]	A Dr. Carl San Charles and Carlos
STATIC FIRING	23 p4109 N68-36774
Full scale tests of major three parameters and verification of [NASA-CR-938]	01 =0143 N68-10574
Design, development, and st	utic firing tests of apogee
Design, development, and st kick motor for Radio Astronor [NASA-CR-93965]	ny Explorer Satellite 11 p1777 N68-21097
Static and in-flight firing frequency energy absorption i	measurement of radio n solid propellant rocket
exhaust	17 p2962 N68-29U14
TATIC PRICTION	CONTRACTOR AND ADDRESS.

STATIC PRICTION

Static and sliding co

```
Multiple purpose inverter design based on phase
demodulated inverter circuit selected from state-of-
the-art assessment of ten inverter circuits
[NASA-CR-92200] 18 p3005 N68-30318
                                                                                         818
                                                                                                           Laplace transform
                                                                                         with
                                                                                                        [RAE-TR-67252]
                                                                                         766
                                                                                                     STATIC LOADS
                                                                                                           Static and dynamic structural analysis of cryogenic
                                                                                         359
                                                                                         ter
                                                                                         47
                                                                                         tate
                                                                                         933
                                                                                         ria
                                                                                         171
                                                                                         ear
                                                                                         776
                                                                                         843
                                                                                         313
                                                                                         102
                                                                                         271
                                                                                         nel
ing
                                                                                         06
                                                                                         eld
                                                                                         48
                                                                                         67
                                                                                         58
                                                                                         97
                                                                                         io
et
Static and sliding contact behavior of materials in sodium environments at high temperatures [NAA-SR-12446] 05 p0675 N68-14488
```

9	propellant load systems at Las [NASA-CR-90212]	on policy N68-10971
r-	[NASA-CR-90212] Static fatigue failure of woo	OI PO129 1408-10971
7	cycle [VP-X-24]	
	[VP-X-24]	08 p1251 N68-17692
	Dynamic characteristics of controller for Brayton cycle to [NASA-TM-X-1456]	rboalternator 09 p1274 N68-18702
6-	[NASA-TM-X-1436]	09 p1274 N68-18702
3	Static bearing capacity of upon by vertical or inclin spacecraft landing performant	ed loads for evaluating
-	spacecraft landing performand [RM-407]	10 p1599 N68-20224
9	Bending stiffness effects on bar in static tension under own	vibration frequencies of
1	bar in static tension under owr	13 p2161 N68-23611
r	Plate theory compared to e	insticity theory for static
1	and dynamic response of recta [AFOSR-68-0577]	Ingular plate 15 p2572 N68-26744
	Perturbation theory for ben	ding load analysis on un-
5	Perturbation theory for ben guided and malaligned rockets [ISAS-421, V. 33, NO. 3]	COURT AND SOUTH AND SOUTH
		16 p2783 N68-27883
3	Computer programs for ben shapes and mixed boundary co and static loads	ding of plates of arbitary
	and static loads	muldons of free viorackin
8		16 p2790 N68-28318
8	Analysis capability to pre- crushing response of Dovetail ([NASA-CR-95368]	spherical impact limiter
3		
2	Characterization of dislocat um stainless steels after stati	ic and prolonged cyclic
	loading	20 p3498 N68-32675
1	Statical analysis of elastic extensional springs	
	extensional springs [NRC-10121]	21 p3787 N68-33841
	Thin shell wall analysis usin	
•	triangular finite element	23 p4182 N68-36687
1	Energy formulation for ela	stic stability problem of
	Energy formulation for ela thin orthotropic shells of revol axisyrametric loading	lution subjected to static
	[SC-CR-67-2709]	23 p4183 N68-36961
	NT HYDROSTATIC PRESS	TIPE
•	Air ducts for increased effect	
	explosions	02 p0240 N68-11551
	Heat transfer and static pre	
	Heat transfer and static pre- flat upper surfaces of sharp of	dged delta wings in free
	[ARC-R&M-3469]	04 p0436 N68-13550
	Flow conditions in inlet man drive turbine investigated usin pressure measurements in or	nifold of M-1 fuel pump
	pressure measurements in co	onjunction with smoke
	(NASA-TM-X-1513)	06 p0828 N68-15639
	Aircraft windshield resistant transfer in two-phase thermosy suring mean static pressures of [DME/NAE-1967-/3/]	ce to bird impact, heat
	transfer in two-phase thermony suring mean static pressures of	phon, and errors in mea- moving fluid
	[DME/NAE-1967-/3/]	06 p0767 N68-15811
	Static pressure and flow fie with short trailing-edge flap [NASA-TN-D-4308]	id for flat plate model
	Installation and fairing of fi fices on wing surfaces of supers	ush, static pressure ori- onic aircraft
	fices on wing surfaces of supers [NASA-TM-X-1530]	09 p1268 N68-19341
	Velocity profiles and static on liquid mercury flowing thro presence of magnetic field [ARL 67-0236]	pressure measurements ough circular channel in
	presence of magnetic field	11 n1759 N68-20710
	[ARL 67-0236] Mass flow rate and static nitrogen gas flow through nozzi effects	pressure of rarefied
	nitrogen gas flow through nozzi	es, and nozzle geometry
		15 p2453 N68-26227
	Experimental cold flow investatic pressure distribution arou [AFAPL-TR-67-147]	estigation of chordwise
	[AFAPL-TR-67-147]	16 p2587 N68-27232

Stati subject pender [ARC-Line and thi [NASA Wind teristics [NASA Wind of Apol [NASA Mech

Sides teristics [NASA Stabil ty probl STATIC 1 Static to kinet [ARC-0 Static hydroca [FTD-N V/ST apparat

Static design of suitabili [NASA-Static gines to material lant [NASA-Residing Sheet ma Static mat delt

Static. reactors [KFK-64 Perfor ground of NASA-Static zle for su [NASA-Electro and testin [NASA-STATIC T

Flight STATICS NT EL Generaling static displaces [NASA-4

STARTERS U ENGINE STARTERS

General purpose structural analy ing static and dynamic structural p

displacement methor [NASA-CR-95021]

lysis program for solv-problems by force and

17 p2981 N68-28904

01 p0084 N68-10293

01 p0042 N68-10307

r pattern recognition 01 p0042 N68-10310

tions of distri

Comparing and analyzing static and dynamic oxida-tion of lubricating greases [RIA-68-897] 18 p3100 N68-30565 let and static pre d to study degree of par-w turbine efficiency 17 p2962 N68-29070 I waiting time and resid busy period for M/G/I q IAD-6590621 tial admission effect or [FTD-HT-23-828-67] 18 p3100 N68-30565 STATIC STABILITY STATIONARY ORBITS NT DIMENSIONAL STABILITY
NT SHELL STABILITY
NT STRUCTURAL STABILITY Ionospheric electron conter Early Bird satellite at fixed posi-17 p2878 N68-29090 Solid state time-division analog multiplier with full-ave modulator for static stability Orbital transfer from low al ationary orbits using micropulation unit itude parking orbits to othrust from electric 05 p0661 N68-14372 RAE-TR-67249] 18 p3162 N68-29743 Stability theorems established for static and dynamic losses in discrete, linear, elastic systems [NASA-CR-66537] 05 p0747 N68-14499 d for static and dynamic STATIONKEEPING tion keeping using connecting Static and dynamic lon in wing V/STOL aircraft in [NASA-TN-D-4322] tether - Analysis and si bility tests of fan 02 p0271 N68-11641 06 p0767 N68-15894 rs with mid-air aircraft colli-warning devices 08 p1116 N68-18226 U. S. Navy experiences w Statistical model of atm ment related to manned fi Mathematical model of rocket trajectories, drag, and positive static stability [NASA-TM-X-52396] 08 p1242 N68-18117 ormance character ns satellite config ristics of two passive commu-urations using solar radiation Static instability of recta objected to uniform in-plan endent lateral loads gular orthotropic panels loads and deflection dein theory of supercon [ITF-67-1] [NASA-CR-66575] 09 p1431 N68-18810 Statistics of switching threshold crossing detects [NASA-CR-90306] Structural weight anal lity of applying statio ARC-292811 13 p2163 N68-24134 design charts on feasi-ig concepts to passive Linear stability criteria for panel flutter of thin plates and thin-walled cylinders [NASA-CR-89183] 14 p2359 N68-25338 Thomas Fermi [NASA-CR-66574]. 09 p1431 N68-18812 average propertie (UCRL-17725) Wind tunnel studies of static aerodynamic characteristics of multilobe gliding parachute
[NASA-TN-D-4672] 17 p2801 N68-28447 ctrostatic ion thrustor ontact ionization for u or employing cesium on lung-satellite attitude control and Semi-infinite cyli [NASA-TM-X-52194] 09 p1414 N68-18820 Static and dynamic stability and magnetoelastic ibrations of linear isotropic elastic beam plate in maglay req icopter instrument flight Analysis of fast two and it circuits affected by statistical t [INR-806/III/E] rule formation flight [REPT.-12543-FR1] 18 p3175 N68-29805 10 p1458 N68-19895 Realizable feedback conspace vehicle stationed ne [GGC/EE/67-10] Wind tunnel test data on static and dynamic stability Apollo command module configuration ol system to restrict drift of of Apollo command m [NASA-TN-D-4688] nguration 19 p3194 N68-31445 10 p1591 N68-19961 techanical problems used to ects of stability theory of stru d to analyze mathematical Divergent-flow contact-ionization electrostarustor for satellite attitude control and stationkee [AFCRL-67-0384] 19 p3377 N68-31446 neral method for de INASA-TN-D-44201 10 p1586 N68-20187 Sideslip angle effects on static stability characteristics of T tail transport configuration
[NASA-TM-X-1665] 23 p3983 N68-36112 [NASA-TN-D-4254] Hovering lunar libratio tionary with respect to ea [NASA-TN-D-4468] ation satellite sta Mathematical mo uid mechanics, ropagation, partick on system 11 p1786 N68-21733 Stability theory applied to static and dynamic stabili-ty problems of electric power systems 24 p4300 N68-37795 Design, developme delivery of electroth titude control and fou brication, evaluation, and three axis, spacecraft attitude control and fo [NASA-CR-72362] stationkeeping system 12 p1962 N68-22586 STATIC TESTS ical analysis of a Static and fatigue tests for aircraft structures subject to kinetic heating [ARC-CP-970] 03 p0423 N68-12558 Satellite stationkee g in vicinity of unstable collibration point A-CR-95948] Method for obtaining obital rendervous and app coplanar, circle-to-circle in [NASA-CR-90536] 19 p3364 N68-31418 Static method for determining thermal stability of odrocarbon fuels eeping computer simu-Synchronous satel [FTD-MT-65-320] 04 p0563 N68-13227 [ESD-TR-68-87] 22 p3965 N68-35427 V/STOL wind tunnel testing - design of wind tunnel STATIONS
U DEEP SPACE INSTRUMENTATION FACILITY Statistical analysis of p ties of JP-4 jet fuel procus (UDRI-TR-67-139) 04 p0442 N68-13247 Static test firing of 260-SL-3 rocket motor to verify esign concepts, fabrication techniques, and materials inability GLOBAL TRACKING NETWORK GROUND STATIONS INTEGRATED MISSION CONTROL CENTER ORBITAL SPACE STATIONS SPACE DETECTION AND TRACKING Digital computer progra suitability [NASA-CR-72284] 06 p0899 N68-16053 NASA-CR-910451 Static tests of 65 inch diameter subscale rocket en-gines to evaluate nozzle fabrication methoda, nozzle materials, liner material, case insulation, and propel-SYSTEM SPACE STATIONS STADAN (SATE (SATELLITE TRACKING NET-[AD-661210] WORK)
TRACKING STATIONS
WEATHER STATIONS [NASA-CR-54869] 07 p1075 N68-17198 Approximate s tivariate two samp (FSU-M128) Residual strength tests on cracked aluminum alloy STATISTICAL ANALYSIS

NT AMPLITUDE DISTRIBUTION ANALYSIS

NT BIVARIATE ANALYSIS

NT CORRELATION COEFFICIENTS

NT FACTOR ANALYSIS

NT KOLMOGOROFF-SMIRNOFF TEST

NT MAXWELL-BOLTZMANN DENSITY FUNC-INLR-TN-M.21641 Estimation problems on and sum of two in and random variable 13 p2163 N68-24132 ion and su Static and vibration mat delta wing models racteristics of inflatable Air-16 p2786 N68-27938 TR-130) Static, oscillator, and transient tests on fast ceramic actors for reactivity and kinetics Digital compute statistical analyses [FTD-MT-67-23] 19 p3310 N68-31249 [KFK-649] TION
NONPARAMETRIC STATISTICS
NORMAL DENSITY FUNCTIONS
PEARSON DISTRIBUTIONS
POISSON DENSITY FUNCTIONS
PROBABILITY DENSITY FUNCTIONS
PROBABILITY DISTRIBUTION FUNCTIONS
PROBABILITY DISTRIBUTION FUNCTIONS Performance characteristics from static tests in round effect of V/STOL transport model NASA-CR-1180] 22 p3954 N68-35594 Problem solving statistical problems [RM-5387-PR] NASA-CR-1180] Static performance of a xiliary inlet ejector noz-[JPRS-43551] zle for supersonic-cruise aircraft [NASA-TM-X-1653] PROBABILITY DISTRIBUTION FOR RANK TESTS RAYLEIGH DISTRIBUTION REGRESSION ANALYSIS REGRESSION COEFFICIENTS SEQUENTIAL ANALYSIS STANDARD DEVIATION VARIANCE (STATISTICS) WEIBULL DENSITY FUNCTIONS 22 n3955 N68-35764 Load distributions aussian case for par Electroadhesive devices - theory, design, fabrication, and testing [NASA-CR-1211] square values (ARC-RAM-3513) 24 p4240 N68-37906 STATIC THRUST Kolmogoroff-Si inspection results (SC-TM-66-613) Flight speed influence on thrust calibration of jet en-Computer program for reducing midfield at lats from many captive firings of full-scale rock gines into statistical analysis and acoustic 17 p2805 N68-28851 NT ELECTROSTATICS NT HYDROSTATICS

[NASA-CR-61182]

01 p0097 N68-10061

Statistical theory of gradient systems of automatic optimization with one and two test steps [TIL/T-5734] 01 p0041 N68-10213

01 p0043 N68-10318 Statistical analysis of self-adjusting network system th mathematical model 01 p0043 N68-10321 ric turbulence environ-01 p0058 N68-10565 n correlation function 01 p0124 N68-10631 tter for tunnel diode 02 ±0190 N68-11039 ethods for calculating ct of nuclear masses 02 p0244 N68-11305 escribed end displace 02 a0275 N68-11328 hiple fold coincidence ne apreads 02 p0192 N68-11440 determining transient 02 p0240 N68-11470 ng circular array anten-62 p0181 N68-11475 statistical analyses for nics, detonation wave perturbation theory, and 02 p0293 N68-11548 nent theory for river 02 p0207 N68-11572 I multiple impulse or-02 p0269 N68-F1840 and chemical proper-ing 1966 03 p0410 N68-11940 for statistical analysis of on Saturn-class vehicle 03 p0295 N68-11974 lysis - statistical estima and parameter identifi 03 p0320 N68-12029 utions for multric tests 03 p0359 N68-12072 to geometric distribu-ent nonidentically dis-03 p0360 N68-12291 iderations for use in 03 p0325 N68-12337 computer simulation 03 p0326 N68-12398 03 ±0323 N68-12484 03 p0424 N68-12652 ic to validate supp 03 p0361 N68-12673 bility theory applied to laus h vehicle cost esti-TR-1001/2515-01/-1] 03 p0430 N68-12722 Cost estimates and econo ontrol systems, and landing mics of radar approact aids for airport surface (SRDS-RD-67-281 04 p0438 N68-12879

IBM 704

LNE-67/6

Maximus puter prog normal pop [REPT.-67

Statistica in gas fluidi

(NASA-C)

Hyperbo limiting val [NBS-TN-

REPT.-33

NASA-C

Determi etistical

Solar ev of 10.7 cm (REPT.-70

AFOSR-

AFOSR-

Theory model wit [NASA-C

Observi

and amin

Haysta ITN-196

R67ELS

Statisti pact load NASA-

Analys

data [BNWL

NASA-

Mathe

(LA-DC

Statis boom m [FFA-1

(FM-35

Comp

Limiting distribution of likelihood ratio statistics under local alternatives to sull hypothesis (FSU-M126) 04 p0527 N68-12894 Tests for mor (ORC-67-37) Relativistic equations for ing bodies, and for gravi witational fields of rotat-n effects on star galaxy Bayesian analys [MRC-TSR-764] 04 p0543 N68-12930 [AROD-3743-4-P] raied exponen for life testing problem (ORC-47,-1) 04 p0527 N68-12932 is and statistical analysis 04 p0528 N68-13020 ological instruments 04 p0507 N68-13032 (FTD-MT-66-82) ed reradiator siting errors in high fre 04 p0476 N68-13052 application to astronomy and related probl 04 n0575 N68-13302 Solution of discrete two n game with bluffing 04 p0530 N68-13326 Mathematical prop logarithm for signal an of Fourier transform of ectrum 04 p0479 N68-13471 Control of reading n near time-variant filts construction from co 04 p0484 N68-13473 ng hypothetical missile idal model hill 04 p0501 N68-13592 over heterogeneous ter-determination 04 p0502 N68-13594 Method fur computing w vertically launched rockets d effects on dispersion of 04 p0502 N68-13595 of computers in wind 04 p0502 N68-13599 ation of machine tool (Y-1588) 05 p0666 N68-14014 sis of public opinion on continental defense [ORNL-TM-1919] 05 p0759 N68-14120 Linear error anal analysis of physical for linear filtering [HSM-M58-67] 05 p0683 N68-14268 nal identification ale images 05 p0761 N68-14399 imating single isotope tive multiple isotope 05 p0719 N68-14773 [NCEL-TR-551] Period analyses of contrecordings on Gemini 7 p [NASA-CR-91661] electroencephalogram ring orbital flight 05 p0612 N68-15003 stituted weight es of linear system functions for statistical 06 p0859 N68-15040 rnal cosmic ray varia-pe and neutron com-

06 p0900 N68-15051

06 p0859 N68-15091

06 p0824 N68-15110

atistical characteristics ic input signals of ran-

06 p0817 N68-15200

absorption, and con-

06 p0889 N68-15295

tmosphere wind circula-e, and Near East 06 p0869 N68-15297

nces on unable short oral zone fringes 5 p0833 N64-15342

of radio echoes from

06 p0837 N68-15406

g modulo three residue

06 p0809 N68-15443

(BRL-R-1376)

Point measuring analyses on silicon si NASA-CR-86032)

Nonparametric ext signal detection in add [NASA-CR-93261]

Wallops Island [NASA-TN-D-4395]

babilities useful in

Syntheses, and analyses of cybernetic problems -nathematical models for man machine systems with optimal control, operations research, economics, ter programming 06 p0819 N68-15576 JPRS-44 141 and applications of 06 p0819 N68-15577 Theory and applications of opt timal control systems 06 p0819 N68-15578 strol system with 06 p0819 N68-15579 Information value, and dyna election of optimal control syste amic programming for 06 p0799 N68-15582 Inverse functions, and fin-nalysis of complex problem te automata for reliability 06 p0864 N68-15588 ns for probability distribution guration output 06 p0799 N68-15599 Extension of expre of signal processing cont (IDA/HQ-67-6496) Computer program for ical analysis of infrared emittance spectra of rock [NASA-CR-92594] 06 p0840 N68-15767 Debugging programs, grams, and utility routines of on line medium size procformation handling [AFCRL-67-0605] raphic software, display pro-s for enhanced performance ocessor used for statistical in-06 p0812 N68-15775 Statistical ray analysis of radio wave scattering by aisotropically turbulent nonhomogeneous solar [NASA-CR-92698] Probability density f applied to goodness of f [NASA-TM-X-63100] Nonstationary ran [NASA-CR-61190] Statistical analysis as [AFCRL-67-0677] Stokes operator, and for statistical analysis of e Relation between Eule in statistical theory of tur (RISO-50) Generation of process with specifie [NASA-CR-92799] [NASA-CR-1020] Apollo Saturn-207 i trajectory dispersion analysis [NASA-CR-92803] Nonlinear least estimation, and different [LA-3763] Mathematical model of strength of strength of the cristics in, and test instrumeransmission systems handling [NASA-TT-F-434] Comparison of damped atistical segment models IONR-TR-RLT-1021 Statistical method for le size determination to

e failure rate based on normalized 06 p0863 N68-15517 parameters 06 p0863 N68-15532

07 p1075 N68-16270 of chi-square statistics 07 p1013 N68-16400 07 p1035 N68-16431 07 p1018 N68-16721 n correlation functions magnetic field 07 p1052 N68-16945 d Lagrangian averages 07 p0988 N68-17058 nonstationary random dation function 07 p0980 N68-17150 07 p0972 N68-17154 icle operational flight 07 p1083 N68-17180 methods for quantal es, minimum chi-square 08 p1192 N68-17438 stical channel charac-tation for, digital data niformly coded binary OF p1146 N68-17542 08 p1218 N68-17703 ional oscillators, and viscoelastic polymer 08 pl 191 N68-17764 08 pl182 N68-17774 for precise resistance 08 p1228 N68-18067 statistics for consta

08 p1149 N68-18070

08 p1259 N68-18096

08 pl 198 N68-18246

sampled wind data from meteorological tower on

Statistical minimum root-mean-square error inver in method for solving integral equation of radiative

AD-6657831 Microbarographic pressure fl and phase lags in background frequency ionospheric propagati [CU-170-67-ONR-266-PHYS.] 11 p1688 N68-21020 relay lines (FTD-HT-67-68)

Statistical analysis for operational reliability of radio 11 p1661 N68-21427 Methodology used ce system performance analysis /assessmen [NASA-CR-1016] 11 p1783 N68-21442

de value, and asymp totic properties of sta [AFML-TR-67-375] 09 p1357 N68-18283 Distribution of maxis and minir num of ratios of order statistics (AD-664475) 09 p1359 N68-18454

Nonparametric techniques for probability distribu-on, probability density, and hazard function estimates for life quality (NASA-CR-93483) 09 p1359 N68-18499 BE-C and Geos-A satellites,

Laser tracking data fr and analytical and statis [NASA-CR-93411] nniques employed 09 p1349 N68-18507 nes for restricted

09 p1359 N68-18538 Statistical analysis of factors inf a high voltage vacuum devices and fields on vacuum syste [ECOM-00394-11] 09 p1314 N68-18545

Synthesis of linear forecast systems with respect to omplex statistical quality criteria 09 p1360 N68-18578

Statistical analysis ar tallographic aspects of opper alloys 09 p1353 N68-18735 fatigue failure mech [NASA-CR-66578] Asymptotics petitors of one sample

[TR-70] 09 p1362 N68-18767 Statistical ti s for design, and evalua-

tion of low pass filters [AROD-2025-20-M] 09 p1363 N68-18833 Statistical theory of electric polarization, and theo-ries of static dielectric constant and dynamic dielectric [ANL-73811 09 p1382 N68-18901

Frequency function for te goodness of fit to normal popul [NASA-TN-D-4405] sting small samples for 09 p1364 N68-19144 Structure of certain two dimensional probability 09 p1365 N68-19293

Statistical techniques for verification of operational probability precipitation forecasts [WBTM-WR-25] 09 p1370 N68-19484

Synchronization loss analysis for narrow band ran-dom phase channel 10 p1494 N68-19617

Statistical analysis on m fect on surface roughness, a e cutting variables efower requirements 10 p1533 N68-19619

Statistical theory of charged particle transport in dis-ordered magnetic fields

10 p1572 N68-19735 Design of random signals for digital communication 10 p1495 N68-19741

Statistical analysis on no with synoptic meteorologi-tions in Siberia [NASA-TT-F-11525] ctilucent cloud occurrence al and ionospheric condi-

10 p1551 N68-19753 Convergence rate bound on to Bayes risk with discrete time ated Bayes solution

farkov processes 10 p1546 N68-19755 steraction of optical efront in presence of a cal system with incoming atmospheric turbulence TR-19 heric turbulence 10 p1558 N68-19952

Double sampling tacatistical quality control in nondestructiv (BRL-R-1382) 10 p1534 N68-20101

Statistical analysis of aircraft accidents [PB-177089] 10 p145 10 p1458 N68-20246 Theoretical approach to launcher system reliability [ELDO-TM-107] ent of space vehicle 10 p1535 N68-20414

Statistical thermodyn-capacities in critical pha s of polyphenyle and heat Ition regions 11 p1645 N68-20707

Impedded semi-Markov ar ad asymptotic distributions alysis on time dependent for queueing and waiting 11 p1725 N68-20768

ere fluctuations, coherence, ound power spectra of low

mixed accep [TR-N-29]

Water flow rate effe [FTD-HT-23-581-67]

ol circu

Statistical theory of e ductivity of radiation in i [AD-662910]

Effect of geomagnet wave radio frequency b [REPT.-24/1965]

Statistical chara scradic meteors

DEX

18283

tios of

18454

tribu-mates

8499

flites,

8507

ricted

8538

8545

ct to

1578

s of

735

nple

767

833

eo-

100

for

44

ity

93

84

17

9

IBM 7040 FORTRAN 4 program for statistical anal-is of photoproduction asymmetry of polarized 11 p1758 N68-21516 LNE-67/611 Maximum likelihood me puter program for estima-normal populations from ce [REPT.-67-C-472] d and FORTRAN com-11 p1671 N68-21673 Statistical analysis of local win gas fluidized columns ure fluctuati 12 p1858 N68-21905 systems with measure (NASA-CR-94291) 12 p1851 N68-22015 Hyperbolic character of experimental results with [NBS-TN-435] 12 p1977 N68-22363 or magnetic field force (REPT.-33) 12 p1856 N68-22668 Statistical energy analysis bration transmission of Ma chniques for estimating er spacecraft assembly 12 p1972 N68-22772 [NASA-CR-94399] Determination of gravitati atistical data on movemen nal field of moon using [FTD-HT-67-50] 12 p1970 N68-23036 Solar event forecast aids for predicting daily values of 10.7 cm flux measured at Ottawa [REPT.-7668-297] 13 p2098 N68-23228 Statistical and co al analysis of learning AFOSR-68-0505] 13 p2033 N68-23273 ticategory, pattern clas-tatistical patterns 13 p2093 N68-23382 Formulation of adaptive sification system for class [AFOSR-68-0279] Theory of bidding bel model with risk averaion [NASA-CR-94596] nd formation of bidding 13 p2095 N68-23712 Observation and forecasti ig of solar proton events 13 p2147 N68-23939 Statistical methods for repr of dynamic flight data ion and reduction 13 p1989 N68-24010 Statistical analysis of h and amino acid substitutio [TH/68/8] ous protein sequences 13 p2002 N68-24256 [TN-1968-7] flace improvement 13 n2031 N68-24298 Statistical analysis of corn bursts and sudden cosmic no [AFCRL-68-0100, PT. 3] n between solar radio 13 p2148 N68-24301 ed for finding statistical significant relatio (R67ELS-46) 14 p2280 N68-24464 Statistical analysis of repe pact loads on airline transpor [NASA-TN-D-4586] d acceleration and im-14 p2183 N68-24476 Analysis and retrieval of processed gamma spectra 14 p2227 N68-24600 BNWL-6691 Statistical analysis of component reliability data for evaluating operational failures in automatic control [NASA-TM-X-61106] 14 p2232 N68-24783 Mathematical description morphological structures by theory and statistical characte [JPRS-45405] and recognition of used on random process 14 p2197 N68-24788 Morbidity of army aviators - at tatistical study 14 p2199 N68-24869 Amplitude statistics of vibracks and airplanes during space eraft transportation 14 p2361 N68-25479 ical energy analysis and mes nel structures 14 p2368 N68-25573 dicting and evaluating atmospheric huz [LA-DC-9094] ctive emission 14 p2208 N68-25626 Statistical analysis of a commagnification heric effects on sonic 15 p2384 N68-25801 ht mechanics analysis of parameterization 15 p2381 N68-26025 missile trajectory by stat [FM-350-0] methods of spatial anai-TR-76 15 p2492 N68-26195 ta analysis from wind tun-

15 p2570 N68-26284

STATISTICAL ANALYSIS d experiments of high voltage illection and intain 7 optical or ing atmospheric Statistically designs breakdown in vacuum [ECOM-2939] e of statistical data from tion experiment for im-15 p2440 N68-26296 19 p3244 N68-31770 sis and felt eye move-Statistical analysis of a Statistical data on civil av (PB-177340-4) n accident reports 19 p3200 N68-31931 [NAVTRADEVCEN-IH-142] 15 p2401 N68-26312 Statistical analysis of sys rage on army maps for 19 p3389 N68-31996 automated cartographic sy [AIR-G1-2/68-FR] Statistical analysis of all for content addressable syst [IBJ-900/III/E] ing pair selection metho 15 p2469 N68-26610 is for analyzing impact sensitivity of Statistical met 19 p3245 N68-32169 explosive materi (PA-TM-1812) Geomognetic pulsation as 16 p2686 N68-27022 rets during 1967 ASP computers on qual ogram for calculating and prepar-ity control data 16 p2607 N68-27072 19 p3371 N68-32171 IDP-1127] Statistical correlations between radiation and meteorological parameters of earth atmosphere [M-7132] 20 p3518 N68-32360 tronomy in U.S.S.R (FTD-MT-64-357) uid precipitation struc-16 p2713 N68-27244 20 p3520 N68-32564 16 p2756 N68-27258 20 p3436 N68-32630 stic sampling and tube bility and confidence Procedures for a intervals from stress [MRC-TSR-£14] 16 p2694 N68-27260 10 p3601 N68-32635 for ranking multiply clas-Statical model and or forecasts of conditional [AWS-TR-208] techniques for weather istance probabilities 20 p3524 N68-33311 16 p2695 N68-27309 Approximation model for crest statistics and system re predicting multimodal ability for impulse noise to meet system requirem [TR-0158-S3960-30/1] 16 p2714 N68-27338 tterm of research and 20 p3517 N68-33364 Economic analysis of s levelopment in pharmac NASA-CR-83283] Statistical analysis of phot 20 p3482 N68-33412 16 p2799 N68-27429 Correlation 500 mb [M-7373] a for wind field at Statistical analysis of re-ion and transport aircraft NASA-TM-X-60385] d loads on general avia-20 p3525 N68-33520 16 p2587 N68-27430 thods for predicting account s and eigenvectors of 17 p2905 N68-28610 [FAA-NO-68-33] 21 p3619 N68-33632 Fatigue failure of metals a excitation from statistical a der narrow band random dysis of random loading 17 p2979 N68-28614 21 p3657 N68-33967 tonospheric prediction n charts for tentatively ency signal intensity in autei-17 p2851 N68-29091 21 p3731 N68-34020 Wave front coherence effects on radiation parame 17 p2853 N68-29108 21 p3713 N68-34124 tatistical analysis of socity and evaluation of erface wind direction and reliability of final reduced ns at temperatures other statistical method 21 p3704 N68-34449 data (REPT.-12) [WAPD-TM-767] 17 p2882 N68-29507 atmosphere data for Mexico 21 p3719 N68-34450 Progress reports on mathematical research, statical analysis, computer programming, stochas processes, power reactors and nuclear fuels, genetia and radiation dosages
[ORNL-4236] 17 p2907 N68-295 Statistical analysis of p systems with white noise in [NASA-CR-96822] frequency modulation 17 p2907 N68-29530 21 p3662 N68-34565 ory applied to adaptive signal active sonar system 18 p3034 N68-29860 tion using statistical 21 p3733 N68-34647 multivariate, univariate, regular data 18 p3043 N68-30665 FORTRAN 2 program for and discriminant analysis of in [AD-669696] sting gear test data wisching aircraft T.-2-53470/68-2259, APP.] 21 p3626 N68-34739 of log-normal variate sums Statistical distribution (TR-0158/3230-46/-121 ication and cloud 18 p3108 N68-30837 ibutions in interaction of water 21 p3720 N68-34790 19 p3225 N68-31322 term cloud ser Comparative study of exp erimental and statistical undle strength of com-21 p3720 N68-34791 AFML-TR-67-3511 19 p3298 N68-31374 22 p3913 N68-34817 es on mathematical cal analyses of test flight data for atmospheric INASA-CR-11261 19 p3284 N68-31478 22 p3802 N68-34908 ng 727 flight data on stress per wing surface 19 p3199 N68-31546 ed for weather forec frequency distri (FB-64/1966/) REPT.-82-68-11 22 p3903 N68-35080 is in deriving amplifying distion detectors 22 p3915 N68-33119 **Energy budg** ere analyzed by effects of eddy transport [MIT-224]-381 19 p3272 N68-31717 rts for monthly average tem-function analysis 19 p3304 N68-31731 d reduction for investmen [TR-163]

Computer programs for detailed analysis of electron trajectory variations on recorded line shape (CDO-1[12-168] 19 p3334 N68-31743

gear of main-line aircr

22 p3900 N68-35447

22 p3907 N68-35674

23 p4092 N68-36188

23 p4019 N68-36349

23 p4091 N68-37241

24 p4273 N68-37436

24 p4275 N68-37646

24 p4275 N68-37647

07 p1037 N68-16946

een model intermolecular

08 pl 157 N68-17775

ns, and experimental properties (6) 07 pi053 N68-17096

Dynamic checks, performance tests, and statistical comparisons of ground based simulators with flying the actentics of simulated aircrafts [USAAVLABS-TR-67-56]

inguage for statistical computation 23 p4030 N68-37385

between pe

SC-RR-67

computing RM-5496-

from nonus INASA-CE

INR-E4

LAE-1389

(NASA-CI

Robusto stema wi al failure

fial failure [NASA-CI

TR-78)

TR-1351

Poisson other stati BNWL-S

(TR-83)

density fur AFOSR-

(FTD-MT

Scientif

Algebra ma havi

under cla

NASA-C

Minim central cl

my, and

TR-60]

Stoppi on finite (TR-135

Statis

TR-145

Joint co

Determining probability distributions for mass pro-perties of systems [TR-0158/\$3960-30/-2] Long range foreca on statistical analysi /1891-1965/ forecusting of precipitation in May based analysis of data for European U.S.S.R. [M-7413] Statistical analysis of surface wind velocity, cloud cover, and visibility at White Sands Missile Range from 1951-1967 [ECOM-5202] 23 p4092 N68-36188 Numerical solution for measuring angle of arrival of ionospheric propagated noise [DSD-R-206] Statistical characteristics of number of cycles of correct work of automatic machine during failure [FTD-MT-24-180-67] 23 p4069 N68-36769 Statistical methods for experiment design in determining optimal conditions for complex processes [FTD-HT-23-660-67] 23 p4090 N68-37108 Statistical methods for designing nuclear physics ex-periments with emphasis on elementary particles [JINR-P1-3612] APL computer lan [NASA-CR-97263] Experimental design optimization using statistical Running and distribution free tests for symmetry 24 p4275 N68-37606 Statistical estimation and hypothesis analysis for Weibull and extreme value distributions [ARL-68-0068] 24 p4275 N68-37644 (ARL-68-400e)
Statistic confidence bounds on reliable line to:
Weibull sampling model with progressive censoring
24 p4275 N68-37645 Statistic analysis of equality hypothesis for scale arameters of populations with asymptotic extremum alue distributions Expected value tables of order statistics from first symptotic distribution to extremum values for samcted de (INR-904) [JINR-E1-3899]

Statistical analysis of 291 synoptic storm situations over central and eastern Europe
24 p4279 N68-37844 stical parameter determina double coincidence circuits nation for series con-24 p4314 N68-37848 Phase shift analysis of n-n scattering at energies near 20 MeV 24 p4317 N68-38028 Charts, data, and statistical analysis of stratospheric irculations for period 1955-1966 24 p4281 N68-38118 Statistical and error analyses of cloud paths 24 p4285 N68-38387 Statistical analysis of reli bility of automatic readers od of character recognition 24 p4234 N68-38425 [FTD-HT-23-963-67] STATISTICAL COMMUNICATION THEORY
U COMMUNICATION THEORY STATISTICAL CORRELATION TRACE Model 2 user guide - instruction manual containing timeshared computer routines for prestatistical manipulations of large, complex collections of data [TM-2621/003/00] 04 m0481 N68-13006 Digital computer time allocation in statistically com-aring two simulation experiments RM-5288-1-PR] 06 p0803 N68-15128 paring two simulate [RM-5288-1-PR] Time series analysis of earthquake occurrences in correlation with various natural phenomena [AFOSR-67-2708] 06 p0833 N68-15312 Theoretical and practical applications of correlation methods in calculating random structural vibrations [TDCK-49420] 06 p0922 N68-15672 Algorithm for perceptron system with input correla-tor for pattern recognition [FTD-RT-23-582-67] 06 p0821 N68-15874 Anti-correlation effects in multiple mode elec-omagnetic field optics

Test procedures for comparison of polynomial coefficients of polynomial growth curves with autocorre-[ARL-67-01991 08 p1194 N68-18043 Wavefront statistics in 3.2mm line of sight trans [TR-0158/3230-46/-2] 08 pl149 N68-18052 Cloud structure measurements, and precrymanic correlations with geographical regions 09 p1338 N68-19406 Statistical correlation techniques for amouthin Fourier amplitude spectra in seismographic sign NVO-1163-86) 10 p1518 N68-19512 Statistical correlation between engine design and ombustion stability in liquid propellant rocket engines [NASA-CR-72370] 10 p1584 N68-19744 Power spectrum analysis on band limited signals cor-upted by additive noise, multiple path, and Doppler effects [NRL-6673] 10 p1497 N68-19984 Electrical properties of thermoelectric legs - statisti-[REPT.-67SD336] 11 p1746 N68-21269 Statistical correlation of ocean temperature ins and associated in trumentation 15 p2458 N68-25835 homogeneities [JPRS-45681] Mathematical model for calculating food chain of Eacherichia-amoeba culture 15 p2394 N68-26218 Statistical testing and correlation of means, vari-nces, and covariances with applications for psychologances, and covaria ical testing theory [TR-76] 16 p2693 N68-27068 Characteristic function, probability density function, and probability distribution function computations for correlation detector output, and correlator output [NASA-CR-71559] 16 p2624 N68-27726 Error estimation and optimization of statistical measuring techniques 17 p2906 N68-29432 Correlation between solar activity and satellite ac-19 p3362 N68-32001 Correlation between electron work function, surface corrosion rate, and composition of nickel-copper alloys exposed to ammonia solutions 21 p3701 N68-33611 Canonical correlations method to study statistical lationship between meteorological fields of temperarelationship between meteorolo ture and geopotential at 500 mb [M-7376] 22 p3906 N68-35512 Statistical data correlation and probability density function approach to accelerated life testing of elec-24 p4235 N68-37558 STATISTICAL DECISION THEORY Statistical decision theory and scaling methods ap-tied to personnel selection test evaluation STB-67-181 02 p0168 N68-11097

of decision error proba-variations for fractiona Monte Carlo computations ilities for chain pooling and factorial experiments [NASA-TN-D-4272] 02 p0229 N68-11639 Markov decision problems i determination of optimum polic {P-3448-2} s investigated to simplify 02 p0230 N68-11771 Convergence rates for empirical Bayes two action [TR-132] 03 p0359 N68-12035 Convergence rates for empirical Bayes two-action discrete observations decision problems
[TR-131] 03 p0360 N68-12292 Arbitrary state Markovian dec [TR-105] 09 p1358 N68-18412 Multipro [TR-106] s with set-up costs 09 p1358 N68-18413 Markov decision process with cor [TR-107] 09 coatly inspection 09 p1358 N68-18417 tistical theory of automatical training and teacher als c learning systems with 09 p1318 N68-18580 Decision theory app (NMC-TM-67-77) cceptance testing 10 p1549 N68-20284 sed on order statistics Nonparametric profor solving problems [NASA-CR-94123] 11 p1732 N68-21614 ory procedures used for pat-

SUBJECT INDEX Statistical decision theory for determining relation-ship between resolution and noise spectra in Fourier [AFCRL-68-0115] 16 p2711 N68-26985 expressing value of infor-scision theory tion theory 16 p2697 N68-27759 Statistical decision theory applied to radar antenna processing for surface target detection in cluster [P68-35] 18 p3037 N68-30375 atistical decision theory applied to finding op-im radar receiver for signal detection in random [FTD-HT-67-243] 18 p3037 N68-30440 Statistical tests for signal detection in maximum. likelihood decision systems in time varying channels 24 p4273 N68-37464 STATISTICAL DISTRIBUTIONS NT PEARSON DISTRIBUTIONS NT PROBABILITY DISTRIBUTION FUNCTIONS NT RAYLEIGH DISTRIBUTION Rapid determination of component reliability dices, based on theory of statistical distribution hyperbolic law of service life [FTD-HT-67-30] 01 p0070 N68-10 01 p0070 N68-10603 Order statistics arising from independent binomial [AD-659164] 02 p0226 N68-11055 Statistical distribution of perfe performance errors in es as function of engine liquid propellant rocket engines a and propellant loading parameters [TR-0158/3116-50/-1] 02 p0261 N68-11297 Approximation theory for extending Ruzes flat effector theory to deep reflectors with nonuniform il-umination functions and nonuniform statistical surface deviations (P-2146) 03 p0319 N68-11924 ative terrain study of vertical takeoff aircraft distributions and effects on penetration 2303-D] 04 p0445 N68-13824 [CAL-VE-2303-D] Statistically isotropic deformation of composite saterials 05 p0746 N68-14140 Construction of optimal linear control system with statistical predictive error dispersion 06 p0819 N68-15579 Equilibrium statistical distributions for gases, other than Boltzmann distribution 06 p0828 N68-15613 Theory of similar tests for proof of independence of certain complicated statistics 06 p0867 N68-16044 Algorithm for calculating output statistical measures for systems containing Gaussian parametric coeffi-08 p1156 N68-18031 Maximum likelihood estimate for failure rate of age function based on incomplete data [D1-82-0660] 08 p1195 N68-18075 Numerical density of Martian craters compared with Innar craters [NASA-CR-93407] 09 p1417 N68-18381 Distribution of maximu n and minimum of ratios of order statistics [AD-664475] 09 p1359 N68-18454 Generalization of sliding duplication in branched 09 p1361 N68-18585 Differential equations for systems where fail free peration time and repair time are distributed accordoperation time and ing to exponential la 09 p1318 N68-18586 Statistical method of finding orbit eccentricity dis-tribution of binary stars 09 p1418 N68-18652 Distribution parameters of linear dimensions in roduction processes 09 p1362 N68-18681 Limiting distributions of maximum likelihood statistical tests [TM-3478/001/00] 09 p1366 N68-19482

ORC-67-101

(ORC-67-36)

13 p2096 N68-24049

Convexity preservi

Transport properties for Maxwell molecular gases [NASA-CR-93918]

Distribution of particle energy density in ring current field of magnetic storm [NASA-TM-X-63147] 10 p1520 N68-19786 10 p1520 N68-19786 Selection procedures for restricted families of proba-ility distributions with increasing failure rate ORC-67-10] 10 p1547 N68-19903 rties of totally positive 10 p1547 N68-19917 akly ionized gases, binary

TR-136

Statistical correlation bety

NASA-CR-931261

DEX

6985

7759

375

440

NS

in-

55

97

fit

4

O

SUBJECT INDEX Poisson approximation to binomial as relation between percent points of beta and gamma distribu-[SC-RR-67-886] 11 p1730 N68-21388 Distribution of leading hexade computing with IBM 360 compu [RM-5496-PR] cimal digit in scientific 11 p1732 N68-21555 Methods for generating pac-from nonuniform statistical distri [NASA-CR-62051] dom nun ibutions 11 p1734 N68-21843 Joint coordinate method for statistical interpretation of quantu [JINR-E4-3687] 12 p1941 N68-22918 ncter of nuclear fission, on from californium 252 13 p2114 N68-23164 Testing quasi-statistical od calculating mass distril [IAE-1389] Photoelectron countinguantum mechanical las (NASA-CR-94546) tics produced by fully 13 p2079 N68-23392 Robustness of reliab systems with identical cost tial failure distribution [NASA-CR-94355] lity predictions for series ponents, assuming exponen-13 p2097 N68-24204 mpling distribu as of ratio estimators for small 14 p2281 N68-24996 Evaluating diagnostic systems by comparison with case histories of medical phenomena, states, and diseases 15 p2395 N68-26265 Power of tests for uniformity of circular distribution [TR-78] 15 p2492 N68-26290 Sampling, statistical distributions, Bayes theorem and value of prior information 15 p2494 N68-26687 Poisson distribution of data on uranium isotopes, and other statistical problems in mass spectrometry [BNWL-SA-1717] 15 p2418 N68-26719 Asymptotic methods for estimating distribution and pected value of stopping variables [R-83] 15 p2495 N68-26733 Limiting distribution of sums of random number of independent variables [TR-86] Distributions of quadratic forms in central normal density functions - tal [AFOSR-68-0849] 15 p2495 N68-26767 Scientific studies in matronomy in U.S.S.R. [FTD-MT-64-357] matics, mechanics, and as-

16 p2713 N68-27244 Algebraic equations for statistical distribution func-ons having similar zones 16 p2694 N68-27246 stribution as solution of

16 p2643 N68-27251 Limiting distribution of likelihood ratio statistic under class of local alternatives and minimum average risk decision procedures for noncentral chi-square dis-[NASA-CR-95169] 16 p2696 N68-27632

Maximum likelihood properties and asymptotic dis-ibutions for limiting distribution of likelihood ratio atistic under class of local alternatives 16 p2696 N68-27633

Minimum average risk decision procedures for non-central chi-square distribution 16 p2696 N68-27634 Soviet articles on math matics, mechanics, astronomy, and statistical distri [FTD-MT-64-146]

16 p2715 N68-27756 statistical inferences based on as and distribution function of 16 p2716 N68-27769

Quantum statistical distribution functions of system of hard sphere fermions with spin 17 p2923 N68-28374

stical gamma distribution and Martingale ce applied to sequential analysis 18 p3101 N68-29569

Stopping rules which assure lower confidence limits on finite lot reliability under rectifying type inspection [TR-135] 18 p3103 N68-30406 Statistical distributions and matrices for jointly sta-tionary time series analysis [TR-143]

Estimating parameters of a convolution with in-stigation of method of moments as a general ap-TR-136] 18 p3106 N68-30549

Extreme value distribution laws for lifetimes of mul-ticomponent systems with replaceable components [ORC-68-9] 18 p3065 N68-30743

Digital computer system for measuring time interval distributions ITM-215.2221-041 19 p3248 N68-31564

Estimation for two parameter family of life length stributions derived from model of fatigue crack TR-56 19 p3381 N68-31821

Probability distributions of world wide cloud cover or computer simulated observations of earth from [NASA-CR-61226] 20 p3518 N68-32282

Time correlations is icrowaves by moving ra forward scattering of om distributions of idential spheres CFSW-E139] 20 p3436 N68-32467

Statistical model for matheric characteristics [IER-50-ITSA-49] 20 p3470 N68-32714 Coherence properties of electromagnetic radiation nitted from or propagated through random medium 20 p3437 N68-32804

Estimation for family of life distributions with appli-cations to fatigue [D1-82-0724]

FORTRAN program for calculating particle spectra roduced in high energy proton-proton collisions by the temperature statistical model NASA-CR-96317] 20 p3551 N68-33548 Fourier series and Chebyshev polynomials in statisti-al distribution theory RB. 371 21 p3715 N68-34686 [RR-37]

stimating intrinsic dimen-ification in signal analysis 22 p3831 N68-34820

Constrained maximum likelihood estimation of N stochastically ordered distributions (WMSI WORKING PAPER-138)
22 p3899 N68-35276

elity distribution of overlapping information 22 p3901 N68-35461 tion analysis for monthly 23 p4091 N68-36110

Testing and merging of confid (NRL-MEMO-1911) 23 p4088 N68-36548 Quantitative monthly pr yais for United States weat! [ESSA-TR-EDS-6] tation distribution anal-

23 p4097 N68-37389 FORTRAN calculations for barmonic oscillators and statistical complexions photolysis of cyclobu-

24 p4210 N68-37427 Probability theory, statistical distributions, con-dence intervals, sampling, and other basic statistics for physicists (BNL-12602) 24 p4274 N68-37477 of low level wind gust statistical gust shape

Wind velocity measurements amplitude and duration and characteristics [NASA-TM-X-53771] 24 p4280 N68-37946 Stratified Monte Carlo sampling for symmetric

[TR-9] 24 p4276 N68-38129 Random hazard function Weibull shape parameters [ARL-68-0076] hod used in estimating 24 p4277 N68-38214

Approximate generation ing Monte Carlo meth AROD-4721-15-M]

24 p4278 N68-38277 STATISTICAL MECHANICS

rivation and analysis of kinetic equation for spa-homogeneous plasma systems with collective in-01 p0119 N68-10891

Statistical mechanics used to calculate ther-modynamic functions of diatomic gases [LA-3597] 04 p0592 N68-12815

Statistical mechanics for ballistic trajectory calcula-ons of airborne vehicles Statistics of airborne vehicles tions of airborne vehicles [DCJRR/WGLR PAPER-66-052] 05 p0604 N68-14089

Coherent state applications to quantum stati mechanics [NYO-3699-16] 05 p0713 N68-14489

Quantum mechanics and statistical mechanics ap-tied to solution of biological and chemical problems nemical bonding, resonance, spin, and transpor-NASA-CR-91663] 05 p0626 N68-14582

r many particle production 07 p1053 N68-17056 Statistical mechanical th statistical mechanical deriv and relativistic dynamics of (AFOSR-67-2779) rized systems 08 p1208 N68-17298

Ergodic theory and di [AD-664026] te transport processes 09 p1386 N68-18452

nics of irreversible processes 09 p (382 N68-1857) ITTF-66-71 and model potentials density fluids 10 p1571 N68-20524

stical mechanics, molecular spectroscopy and y, irreversible thermodynamics, surface ry, electrochemistry, ultracentrifugation, and steering studies on polymers 14 p2213 N68-24704

Collision integral tables for potential functions of gas flow molecules at reduced temperatures [AEDC-TR-68-92] 15 p2454 N68-26405

Molecular mixing length method for determining chemical reactions in turbulent wakes [AVCO-EVERETT RES. REPT.-286] 16 p2641 N68-27024

Integral equation density matrix for theory of nonequilibrium processes in statistical mechanics (ITF-88-3) 19 p3385 N68-31581

Integral equation for density matrix and role of free Hamiltonian in evolution of dynamical system [TTF-68-5] 19 p3318 N68-32028

Kinetic equations in weak interaction approximation nonequilibrium process in statistical mechanics ITF-68-4] 19 p3319 N68-32029 TTF-68-4) Covariant statistical mechanics, and relativisti anaformation properties of thermodynamic quantitie

Statistical model for time development of neutron density in energy space [EIR-133]

Statistical med [UCRL-71080] ionized gases 20 n3558 N68-33145 ies of transport proper-derately dense, and criti-

(NASA-TM-X-52478) 20 p3613 N68-33516

tistical mechanics of a nteractions using cano nany body problem and par-onical point transfer method

22 p3914 N68-34938 Statistical mechanics of thermally driven systems 23 p4190 N68-37205

STATISTICAL MOMENTS
U DISTRIBUTION MOMENTS STATISTICAL PROBABILITY U PROBABILITY THEORY

NT KOLMOGOROFF-SMIRNOFF TEST NT RANK TESTS

Detection and scaling of statistical differences between visual texture [NASA-CR-90033] 01 p0033 N66-10127 Sensitivity testing - Methods, statistical considera-tions, and selection rules

02 p0230 N68-11720 Statistical tests for signal detection and correlation [NASA-TR-R-273] 02 p0193 N68-11789

Test programs for date tion of data-link to missis [CERN-67-31] at computers, and applica-nass spectrometer 07 p0969 N68-16575 Uniting distributions of maximum likelihood

statistical tests [TM-3478/001/00] 09 p1366 N68-19482

18-34 feature theory based on my Statistical cost theory based on my Indicate the state of the s opts in genera

Comparative analysis of two con of uniform pseudorandom number [NASA-TM-X-60370] 15 15 p2491 N68-25686 Power of tests for uniformity of circular distribution [TR-78]

Statistical testing and corrects, and covariances with appeal testing theory 16 p2693 N68-27068

bility of best invaria 16 p2695 N68-27425

Monotone failure rates statistically tested for trends [D1-82-9716] 19 p3300 N68-31075 factor structure reproduc-of binary variables 19 p3300 N68-31104 Method for computing lower confidence limits on system reliability using component failure data with unequal sampling (NPS-53WO/BGB061A) 21 p3699 N68-34631

NPS-55WO/mos-Test for exponential versus increasing sa-erage distributions based on incomplete data 23 p4087 N68-36387

Goodness of fit with unknown parameters [AROD-4721-13-M] 24 p4278 N68-38274

Binary integration method for optimum threshold lection in radar testing procedures NELC-1550] 24 p4229 N68-38330

Long range trajectory prediction and construction [CONF-670931-1] 02 p0233 N68-11609

Statistical prediction of precipitation probability [REPT.-7624-268] 07 p1020 N68-17012

Meteorological satellite photographic measurements and theoretical calculations of mountain kee waves and moisture sources of subtropical jet stream clouds in Middle East (harel/ [PB-177066]) 10 p1552 N68-20234

Project ECCRO - synoptic experiment in tropics (IERTM-NHRL-80) 10 p1553 N68-20519

10 p1552 N68-20234

STATISTICAL WEATHER FORECASTING

average distr [ORC-68-7]

selection in rad [NELC-1550]

FTD-HT-

IFTD-MT

Erosion

Axial flo

Perform

Activat

[DLR-MI

STEARATE

STEATITE

NT WE

U TAL

Equipm tranonic t [TR-6703

Ultrasc type AST TN-661

Ultrasc

Shock

TN-660

(ISL-7/4)

Effects on low-c

mined wi

Ablati

Effect

NASA-

State of

Synoptic and topographic effects on precipitation equency predictions for United States of America (WB-51 11 p1734 N68-20956 Prediction equations for estimating date of onset of rainy season in southern South Vietnam
13 p2101 N68-23944 Application of bivariate normal offset circle probability tables to geophysical phenor [CAL-XM-2464-G-I, V. 3] 17 p2906 N68-29386 Duration of cold temperature over North America [AFCRL-68-0232] 18 p3108 N68-29811 Physico-statistical method for forecasting weather [M-7190] 20 p3518 N68-32428 Synoptic-statistical analysis and forecast method for severe rain situations in central Europe 20 p3524 N68-33256 Weather forecasting methods /annotated bibliog-[TAS-68-17] 22 p3906 N68-35481 Gamma function distribution analysis for monthly precipitation in India 23 p4091 N68-36110 Hydrometeorological study of Semois Basin, Belgi-23 p4096 N68-37095 Quantitative monthly precipitation distribution analysis for United States weather stations [ESSA-TR-EDS-6] 23 p4097 N68-37389 ESSA-18-ELE-0]
Convective instability of inertia waves and physical analysis of early stage typhoon formation - adjustment of thermal wind in moist atmosphere at low letitudes EMM-66-132]
24 p4282 N66-38134 of thermal wind i [EMM-66-132] STATISTICS Statistical properties of partially polarized radar signals and noise, and polarization characteristics of rodar targets
[JPRS-46524] 24 p4228 N68-38217 Statistical properties of polarized target signal and soise in radar amplitude channels and phase meter 24 p4228 N68-38218 STATOR BLADES Cold air study of high temperature gas turt-ne -Hude feature effects un statur performance [NASA-TN-D-4418] 07 p1074 N68-16632 Boundary layer blowing techniques for high lift sta-tor blades in axial flow compressors [NASA-CR-54564] 12 p1813 N68-22579 Design and evaluation of stator blades for use in oundary layer bleed techniques in axial flow compres-[NASA-CR-54569] 17 p2802 N68-28621 Kinetic energy loss coefficients of stator blade row in open configuration [NASA-TM-X-1635] 18 p3006 N68-30506 Data and performance of flow generation rotor and single-slotted 0.75 hub diffusion factor stator [NASA-CR-54565] 20 p3579 N68-33330 Slotted axial flow compressor rotor and slotted stator tests of slot effect on performance of highly loaded blades [NASA-CR-54553] 21 p3619 N68-34398 Turbine performance with 130 percent design stator [NASA-TM-X-1663] 22 p3808 N68-35536 Multiple circular-arc slotted stator for transonic speed operation [NASA-CR-54624] 23 p.3987 N68-37393

STATORS Dynamic control, performance and response of two hase servomotors 17 p2864 N68-28676 Aerodynamic characteristics of a stator modified gas turbine for single shaft Brayton cycle power system [NASA-TM-X-1615] 17 p2815 N68-28870 Development of compressor, stator, and vane pivot seals for use in advanced air breathing engines [NASA-CR-72405] 17 p2895 N68-29320 Variable geometry concepts applied to guide vanes and stators in single stage compressors [NASA-CR-54554] 18 p3157 N68-29854 Effect of variable stator geometry on performance of air cooling turbine [NASA-TM-X-1632] 18 p2996 N68-29994 Transonic stator with multiple circular arc airfoils and minimum curvature tested over range of flow angles and velocities - stator A [NASA-CR-54621] 20 p3394 N68-33499 Transonic stator with multiple circular arc airfoils and minimum curvature tested over range of flow angles and velocities - stator B NASA-CR-54622] 20 p3394 N68-33500 Transonic stator with speed operation (NASA-CR-54624) NT COUETTE FLOW NT HARTMANN FLOW (ARL-67-0140) NLR-TR-T-136] [REPT.-70318-50] (SF/TN/5) ing in gap STEADY STATE
U EQUILIBRIUM STEADY STATE CREEP Orthotropic stress characteristics in anisotropic creep of disks Modified Ritz method for problem of steady creep of nonsymmetrically heated tubes subjected to internal pressure

uble circular arc airfoils tested over range of flow angles and velocities [NASA-CR-54623] 20 p3395 N68-33501 Performance tests of stator component in closed position and effects on performance of single stage turoine suitable for air cooling [NASA-TM-X-1675] 23-p4162 N68-37264 Multiple circular-arc slotted stator for transonic 23 p3987 N68-37393 Mathematical theory of axisymmetric steady com-pressible swirl flow with closed streamlines at high 02 p0198 N68-11267 Numerical method for calculating steady axially symmetric spiraling motions of incompressible fluid at large Reynolds numbers [ARC-R&M-3467] 06 p0829 N68-15762 Steady transonic potential flow obtained by hodo-graph method applied to non lifting symmetrical airfoil 07 p0934 N68-16605 Measurement, interpretation, and use of unsteady omentum fluxes in two phase flow 11 p1685 N68-21155 Calculation method for two dimensional equilibrium ow of radiating gas in axially symmetrical nozzles flow of radiating gas in axially symmetrical nozzles
[ANL-TRANS-337] 12 p1863 N68-22733 Finite difference methods for solution of Navier-tokes equations for steady two dimensional turbulent 13 p2055 N68-24158 Theory of steady state wave propagation in periodic structures 15 p2511 N68-26917 Pressure distribution on surface parallel to rotating isk with steady, incompressible Newtonian fluid flow-18 p3062 N68-30108 02 p0276 N68-11573 18 p3172 N68-29580 Steady state creep of long thick walled cylindrical be under combined effect of internal pressure, axial tube under combin 18 p3172 N68-29581 Rheological model of creep for determining in-uence of recovery on stress relaxation process in (RTS-45461 20 p3507 N68-33596 U EQUILIBRIUM FLOW m blowers for steam cooled reactors (45) 01 p0092 N68-10462 [KFK-345] Economic comparisons between steam and helium ooling for fast breeder reactors, and fuel element [KFK-595] 02 p0238 N68-11529

Zircaloy 2 and 4 corrotion in high temperature and high pressure water and steam [WAPD-TRANS-73] 03 p0350 N68-12152 Acoustic velocity in steam determined by ultrasonic ethods to establish relationships of specific heat tios with state of steam ratios with stat [AD-661791] 04 p0544 N68-13164 Numerical solutions for systems of ordinary and non-interpretain and interest of the system of the system chemical reaction and convective diffusion of steam and hydrogen through graphite [K-1724] 05 p0619 N68-14118 Corrosion of stainless steel and high nickel content alloys in high temperature superheated steam
[EURAEC-1895] 05 p0675 N68-14480 Static corrosion tests on iron nickel chromium alloys in high temperature steam [EUR-3387.F] 05 p0678 N68-14780 Radial vane steam separator for KRB reactor, equa-tions of flow and pressure drop, and large steam [GEAP-5524] 07 p1027 N68-16308 Experimental investigation of steam lubricated jour-nal bearings for marine propulsion systems [MTI-67TR76] 07 p1004 N68-17151 Pulsed performance of steam reaction jet [TR-1001/2230-33/-2] 08 p1231 N68-17941 Influence of cooling cycle design on dynamic behavior and safety of steam cooled fast reactors [KFK-655] 09 p1378 N68-19252 d steam generator [BAW-1280-48] 13 p1995 N68-23689 Tabulated state variables and thermodynamic values ir isentropic discharge phenomena of water, starting with saturation [DLR-FB-68-11] 13 p2172 N68-24136 Pressure effect on heat transfer coefficient for condensing steam vapors (ONR-TR-2) 16 p2792 N68-27088 Heat transfer crisis with steam-water mixtures in cir-cular tubes of water cooled reactors [EUR-3920.E] 18 p3188 N68-30200 Behavior of single component, two phase flow of steam and water droplets through nozzles 20 p3464 N68-33072 Statistical mechanical theories of transport proper-ties for dilute, dissociating, moderately dense, and criti-cal region steam cal region steam [NASA-TM-X-52478] 20 p3613 N68-33516 Radial vane steam separator devel [GEAP-5636] 24 p4295 N68-37822 STEAM FLOW Deterioration conditions of heat transfer in steam and water mixtures flowing in heated pipes [NP-TR-1522] 01 p0152 N68-10903

exchanger (SGAE-RT-13/1967)

boiling water react [EURAEC-1898]

Steam separator [EURAEC-1900]

surized steam bearing [MTI-67TR77, PT. 2]

(EURAEC-1945)

sion of Zircaloy [KAPL-M-6748]

STEAM GENERATORS U BOILERS

KFK-6371

Steam cooling system paramete chavior, and stability of fast bree

frequenc Defor exposed (EURA Rain o Steam system designed to investigate boiling flow regimes and critical heat flux [NYO-3304-9] 03 p0428 N68-12538 sels for to Atmo Heat transfer dynamics of two phase flow in heat

04 p0596 N68-13559

05 p0694 N68-14439

07 p1029 N68-16566

eter effects on dynamic

reder reactor 09 p1379 N68-19480

10 p1533 N68-19858

12 p1860 N68-22148

19 p3290 N68-30985

13 p2105 N68-23107

Centrifugal separators for steam flow regulation in oiling water reactors

Two phase flow structure in nine-rod channel with steam water at 1000 psia flow vertical upward [GEAP-5480] 07 p1027 N68-16316

Condensate effects on lubrication of externally pres-

Condensation of steam in water filled reservoir [FPL-TRANS-441] 11 p1686 N68-21455

Liquid layer effects on shear stress in condensing steam inside horizontal tube

Steam generator with downflow cyclone for boiling

Effects of silica in autoclave water on steam corro-

Pressure drop, mass rates, and heat transfer rates of steam condensation in horizontal channel 21 p3791 N68-33628

ors for boiling wat

dustrial INRC-T Fatig and for Reser cooled : Fract of react Inpla under a

STEELS NT A
NT C
NT C
NT C
NT C
NT H
NT N Ten EUR/ Web

EUR/

(FTD-MT-67-37)

STEARATES

STEATITE

TALC

[TR-6703.285]

(ISL-7/42/66)

mined with doubl [NSRDC-2568]

steel structures

[NASA-TT-F-11241]

exposed to prolonged stress, and s

Axial flow gas and stream turbin [FTD-MT-65-409] 00

STEEL STRUCTURES
NT WELDED STRUCTURES

State of the art review for erosion of steam turbine

Erosion resistance tests on steam turbine blade, and shield materials

Performance test evaluation of boiling water driven impulse turbine [DLR-MITT.-68-18] 22 p3808 N68-35666

Activation overpotential-current density relation for copper electrodes with thin stearic acid layer 21 p3648 N68-33869

Ultrasonic inspection of special quality steel plates type ASTM A-204 Gr B [TN-6610.271] 02 p0219 N68-11823

Ultrasonic inspection of high quality steel sheets and plates - procedures and equipment [TN-6608.263-A] 02 p0219 N68-11824

Shock load effects on high density steel reinforced

Effects of internal and external cyclic pressurination on low-cycle fatigue behavior of Hy-80 seed determined with double box tests

Ablative and steel chambers effect on combustion in-

Effect of initial loading of differing degree and equency on fatigue strength of drilled flat steel bars NASA-TT-F-11241] 07 p1092 N68-17047

Deformation resistance analysis for steel steam pipes

Welded joints of very thick steel plates [EURAEC-1927] 09 p1440 N68-18564

Structural behavior of thick steel plate pressure ves-sels for water cooled reactors [ORNL-4176] 11 p1742 N68-21385

Atmospheric corrosion rates of steel structures in in-dustrial center of Japan [NRC-TT-1281] 12 p1889 N68-22528

Fatigue crack growth rates for characteristic plate and forging directions of pressure vessel steels [KAPL-3383] 16 p2684 N68-28131

Rain erosion behavior of galvanic surface layers on

stability in hydrogen oxygen rocket engine 'INASA-TM-X-15111 06 p0898 N68-15644

nent specifications and techniques for ul-testing of heavy forged steel cylinders 3.285) 02 p0218 N68-11779

07 p0939 N68-16759

08 pl185 N68-17626

one stages 08 pl 124 N68-17843

06 p0918 N68-15221

06 p0921 N68-15497

08 p1252 N68-17715

09 p1354 N68-19421

11 p1742 N68-21385

19 p3374 N68-30990

STEAM TURBINES Temperature distribution of turbine rotor cooled by vapor passing through circular channels in blade shafts [FTD-HT-66-743] 02 p0282 N68-11419

2152 sonic heat

DEX

c and

3164 1118

tent 480 loys 780

308 151 141

m of 2

29

Research studies on steel embettelement in water (EUR 3784.E)

18 p3091 N68-30255
Fracture mechanics approach to structural analysis of reactor vessel steel plates
[EURAEC-2007] 18 p3116 N68-30365 Inplane stress analysis on welded steel tube joints under axial loading

NT AUSTENITIC STAINLESS STEELS NT CARBON STEELS CARBON STEELS CHROMIUM STEELS

CROLOY

NT CROLOY
NT HIGH STRENGTH STEELS
NT MARAGING STEELS
NT MARTENSTIC STAINLESS STEELS
NT NICKEL STEELS
NT STAINLESS STEELS

Tensile properties of iron and steel irradiated with (EURAEC-1864) 01 p0072 N68-10038 Welding of very thick steel plates by molten flux

EURAEC-1609] 01 ±0067 N68-10044 Long-term mechanical properties of steels subjected mechanical stress at elevated temperatures and neutron irradiation (EURAEC-1881) 01 p0074 N68-10196

Cold brittleness and maximum plasticity of low car-bon and low alloy steels used in shipbuilding [NIC-TRANS-2436] Of p0075 N68-10431

Steels with reduced sensitivity to neutron embrittle-ness for nuclear pressure vessel fabrication [EURAEC-1883] 01 p0093 N68-10483 Boron traces in iron and steels determined by predispersive spectrometer [ORNL-TR-1339] 01 p0025 N68-10813

or p0025 N68-10813 ties of steels, and stress relief test data [EURAEC-1889] cted with intermediate-

Rapid tensile tests cor grade steel reinforcing bars [AD-659263] 01 p0145 N68-10867 Cyclic deform

e and fatigue dan oy, steel and titanium 01 p0146 N68-10968 [NAEC-ASL-1115] Ultrasonic inspection of high quality steel sheets and TN-6608.263-B)

02 p0218 N68-11700 Spectroscopic analysis of manganese and iron in ir-radiated steel samples [RT/CHI/67/16] 02 p0178 N68-11852 Fluidized bed polymeric coating of large steel missile

[PA-TR-3569] 03 p0347 N68-12122 Influence of nitrogen in iron and steel under fast (EURAEC-1773) 03 ±0353 N68-12571

Influence of nitrogen in iron and steel under fast neutron irradiation [EURAEC-1919] 03 p0353 N68-12634 Test procedures for determin of reactor pressure vessel steels [COO-1477-8] ing fracture toughness

03 p0354 N68-12746 Measurement of thermal cycles in weld heat affected one of mild steel parent plates with embedded ther-(COA-NOTE-MAT-13) 04 p0589 N68-13318

Coefficient of friction between metals and nonmetals in ultrahigh vacuum [NASA-CR-61439] 05 p0666 N68-14579

Determination of magnetic properties of sheet transformer steels in weak magnetic fields 06 p0878 N68-15104

Chemical composition, tensile properties, and frac-ture toughness of steel pressure vessel to assess crack propagation in burst-type failure [NRL-MEMO-1827] 06 p0854 N68-15553 06 p0854 N68-15553

Infrared absorption spectra of metal oxides in steels [NASA-TT-F-11483] 06 p0793 N68-15868 Radiation hardening and sbrittlement in pressure

07 p1008 N68-16649 IORNL-41951 Ultrasonic vibration effect on precipitation harden-

ing of steels and super alloys [NASA-CR-92801] 07 n1008 N68-16667 Effects of adding rare earth silicides, aluminum, and cryolite to moiten steel on microstructure and sulfur distribution in steel ingots [BM-RI-7091] 07 p1009 N68-16786

07 p1009 N68-16786 and fracture of pressure Fatigue crack propagation as used steel temper embrittled [NRL-MEMO-1822] 07 p1031 N68-16817

Fracture mechanics and tensile tests of reactor vessel (WCAP-3677-5) 07 p1031 N68-16832 Plastic fatigue embrittlement of steels for reactor

[EURAEC-1892] 07 p1009 N68-17004 Naclear probe microanalysis of carbon in steel using carbon 13 nitrogen 14 and carbon 12 nitrogen 13 proton gamma reactions [RM 400] 07 p1053 N68-17054

Working procedures, methods in steel foundries [EUR-3645.F] nd isotopic measuring 07 p1004 N68-17126 Heat treatment methods for reducing cast alloy steel RAE-LIB-TRANS-1256)

Fracture properties of quenched and tempered steel weldment spe [NRL-6602] 08 p1186 N68-17678 Linear elastic fracture analy on fracture toughness of high three and aluminum alloys sis for side groove effects strength steels, titanium 08 p1253 N68-17777

07 p1010 N68-17146

Specimen size, and interface lubrication effects on findrical compression tests of copper, and steel sam-AFML-TR-67-2801 08 pl187 N64-17956

Torsional prestrain effects on embrittlement of low carbon in 37 notched steel specimens tested to failure [AD-664598] 09 p1439 N68-18309 Mechanics of crack an [SU-DMS-68-T-25] nild steel 09 p1352 N68-18421

thematical technic al conductivity for vacuum chambers

09 p1449 N68-18689 Design, materials, fabrication, inspection, and test of steel pressure vessels for water cooled nuclear re [ORNL-NSIC-21] 09 p1375 N68-18873

Heat transfer from flat, stal steel surface to sodium during electron be (HNL-TR-167) ment 09 p1450 N68-19087 tal studies on steel joints

fastened by bolt [REPT.-317.81 10 p1601 N68-19535

Synergistic effects of nuclear radiation and stress on pressure vessel materials [NRL-6620] 10 p1605 N68-19978 Analysis of flow and fracture propessity of steel plates using photoelastic model

11 p1792 N68-20706

Fracture toughness and yield stress of four-inch thick plate steel for pressure vessels [COO-1477-9] 11 p1712 N68-21002 Impact strength and relaxation tests on Mannesman WB 35 and vacuum degassed magnesium-molybdemis

[QR-10] 12 p1908 N68-22647 es of solder joints of titanin

13 p2075 N68-23836 ne spraying coating process for improved corro-esistance of steels, ceramics, and composits

13 p2086 N68-24317 Collection of papers on stress corrosion cracking of uminum alloys, nonstainless steels, stainless steels, and titanium alloys
[AGARD-CP-18] 14 p2267 N68-24397

nal survey on on stress corrosion cracking of m alloys, titanium alloys, and steels. 14 p2268 N68-24405

Materials science and metallurgy - annotated bibliog-[JPRS 44636] 14 p2270 N68-24749

Steel melting and vaporizing processes in 200-kW multichamber electron beam furnace [UCRL-TRANS-10220, PT. 2]

14 p2265 N68-25139 Effect of form of ferrite on recrystallization of frac-(UCRL-TRANS-10227) 14 p2272 N68-25140

Corrosion rates of zinc ar elation of optical properties t idiation spectrum and galvanized steel, and es to amount of corresion in 14 p2273 N68-25247

Molten steel temperature m rement in electron UCRL-TRANS-102151 14 p2266 N68-25445 to alloy steel for in-

Rure-earth silicide a BM-RI-7153) 15 p2480 N68-25750 Contact failure of

15 p2485 N68-26622 Pressure and vibration rate effects on fretting damage in steels [RIA-68-896] 16 p2673 N68-26984

Fatigue and tennile tests to sta effect on fatigue behavior and motched steels [AFML-TR-68-19] study stress concentration of strength of smooth and

16 p2775 N68-27047 Protective capacity of an tor for steel onia as corresion inhibi-16 p2674 N68-27118

Cavitation corrosion of steels and tangeten subj (NIC-TRANS-2582) 16 p2675 N68-27180

Corrosion and porosity of electrodeposited meta-rotoctive coatings by hydrogen sorption measure-[RIA-68-717] 16 p2675 N68-27223

specific heat, and Thermophysical lidification of core 16 p2668 N68-27362

on for nongray temperature

05 p0739 N68-14917

STEEP GRADIENT AIRCRAFT Crater dimensions in aluminum alloy and steel plates after projectile impact 16 p2680 N68-27590 Strain and precipitation hardening effects on frac-ture characteristics of eutectoid steel wire 16 p2680 N68-27657 Futigue and toughness bending test program to taracterize aluminum, magnesium, and titanium alcharacterize alumi loss, and steels 16 p2783 N68-27867 Determination of traces of copper, arsenic, and antimony in steels by neutron activation analysis
[AERE-AM-106] 16 p2615 N68-28196 Weld heat affected zone structure and properties of QT 35 steel determined by resistance heating [COA-NOTE-MAT-5] 17 p2898 N68-28384 Stress corrosion, flaw growth, and fatigue in study of steel cracking induced by adverse environmental con-18 p3086 N68-29610 [T&AM-312] Uniaxial stress influence on velocity of ultrasonic wave propagation in steel, aluminum, and titanium al-18 p3122 N68-29850 Welding embrittlement of steels outside of visible eat-affected zone region due to plastic deformation (COA-NOTE-MAT-19) 18 p3093 N68-30473 Nitrogen content of weld deposits from acid, ratile, and covered electrodes during arc welding, and effects on mechanical properties of steels (COA-MAT-4) 18 p3093 N68-30510 Transition temperature effects on embrittlement of at and non-heat treated pressure vessel steel during EURAEC-1751 18 p3118 N68-30698 Corrosion prevention of calcium-magnesium natings formed on iron and steel surfaces in sea water [FTD-HT-67-233] 18 p3096 N68-30807 Brittleness in steel subjected to tension after com-receive prestraining SSC-184) 18 p3097 N68-30859 Carbide phase and alloying element effects on drogen corrosion resistance of steels

hydrogen corrosion (FTD-MT-66-143) 19 p3291 N68-31304 X ray spectrometry for analysis of highly alloyed [MG/D-201/62] 19 p3293 N68-31576 Effect of sulfate reducing microorganisms on sea on of steels (NBS-9846)

19 p3294 N68-31753 Surface-replication and three dimensional metallog-raphy for studying, slip, twinning, carbide cracking, wold formation, and microcleavage in tensile tests of [SSC-183]

19 p3295 N68-31873 Hydrogen corrosion of steel at high temperatures and high pressures 20 p3495 N68-32344

est of 20NiCrMo2 /SAE 8620/ Surface heat treatment of steel by carburizing and carbo nitriding 20 p3486 N68-32547

and sulfur additions for high Metal cutting conditi surface qualities in high speed steels (EE-TRANS-1764) 20 20 p3486 N68-32548

Metallurgical analysis and hard on weld heat affected zone of steels [COA-MAT-2] 20 20 p3496 N68-32569

Porosity effects on mechanical properties of sintered 20 p3497 N68-32572

Spectrophotometric determination of nickel, cobalt and chromium in steels, and estimation of systematic errors arising from undetermined compounds d compounds 20 p3420 N68-32607

Hot torsion test method for determining plastic pro-porties and hot-workability of steels 20 p3502 N68-33000

Correlations between flexural and direct stress low cycle fatigue tests on HY-100 and HY-140 steels, Monel-400, cast and wrought 70-30 cupronickel, and Correlations between flex NiAl bronze [REPT.-2460] 20 p3504 N68-33274

Effects of forming technique, ferrite content, and uminum nitride precipitation on alloy steel ductility 20 p.3506 N68-33567

Nitrogen influence on iron and steel subjected to fast autron irradiation (M-551) 21 p3703 N68-34274

Sliding friction of cupper based sintered material painst steel in paraffinic mineral oil 22 p3881 N68-34844

Selection of die steels for high speed metal forming [FTD-MT-24-190-67] 22 p3885 N68-35935 Stress state of thin-walled tubula jected to biaxial tension in plastic de ular steel samples sub-c deformation domain 22 p3975 N68-35988

cture, formation, and adhesive strength of scale els at temperatures up to 1200 deg C and in dif-combustion atmospheres 23 p4074 N68-36237

Structural adsorption mecha mism effects on loss of metal strength [NASA-TT-F-11968] 23 p4075 N68-36320

Growth characteristics of iron oxide films on mild steel in dilute lithium hydroxide solution at 300 deg C [NRL-6724] 23 p4075 N68-36411

Fatigue-crack growth rate studies of low alloy pres-sure-vessel steels [KAPL-P-3439] 24 p4267 N68-37861

Hot extrusion of solid and hollow shapes from struc-tural and alloy steels without residue [FTD-HT-67-413] 24 p4263 N68-38206 Irradiation effects on surface activity and hydrogen diffusivity in steels [IN-1200] 24 p4270 N68-38461

STEEP GRADIENT AIRCRAFT U V/STOL AIRCRAFT

STEEPEST DESCENT METHOD Stochastic approximati convergence properties [NASA-CR-91434] on scheme with accelerated 04 p0529 N68-13217

Steepest ascent/desce decreasing function of m [NYO-2262TA-157] thod for increasing or in one variable 05 p0684 N68-14910

Two segment noise ab [INC/C3/P5] approach to landing 14 p2189 N68-25642

Steepest descent op-junction with charact design rocket nozzles n technique used in con-nethod of flow field to 21 p3758 N68-33954

1 to 8 parameter system optimizing through accent method for analog computers 23 p4028 N68-36942 [R-14-68]

U SLOPES

STEERABLE ANTENNAS

Far field patterns, element d for electronically steerable ante [NASA-CR-91383] ent design, and feed systems nna systems 04 p0475 N68-13044

Feed systems, antenna couplers and quasi-optical power distribution system for electronically steerable

[NASA-CR-93290] 08 p1146 N68-17547 Computerized design of single degree of freedom spacecraft antenna pointing system [NASA-CR-94153] 11 p1662 N68-21539

Series and optical feed systems for satellite-borne electronically steerable antenna system [NASA-CR-94686] [3 p2031 N68-24336

Design analysis for radome telescope with parabolic anten (ESD-TR-68-19) 15 n2427 N68-26298

Wind tunnel tests of scale model of Marconi 90 ft fully steerable satellite tracker [NPL-AERO-1222] 18 p2995 N68-29925 18 p2995 N68-29925

Operating characteristics and design of antenna system with electrical circuit elements to change direction or shape of antenna po [FTD-HT-23-5 [3-67] 19 p3241 N68-31613

STEERING

Iterative and perturbation a n approaches to near op-r boost vehicle guidance 10 p1597 N68-20449 timum steering equ [NASA-CR-1007]

Energy absorbing steering column for protecting ipboard personnel against underwater explosion suck motion 14 p2365 N68-25532

U CONTROL ROCKETS

STEPAN-BOLTZMANN LAW

Temperature distribution and location and shape of solid-liquid interface in solidifying bar of indium an-timonide in heat transfer study 16 p2792 N68-27219

STELLAR ATMOSPHERES NT CHROMOSPHERE NT SOLAR ATMOSPHERE NT SOLAR CORONA

Stellar convection zone growth rates of varying su-peradiabatic gradients derived along with correspond-ing eigenfunctions Q5 p0737 N68-14328

06 p0914 N68-16038

Approximate expression for istribution of stellar atmosphere

08 p1242 N68-18101

Light absorption spectra in atmospheres of late type

fance analysis of eight sharp-line A sta [NASA-CR-93687] 09 p1426 N68-19344

Stellar model atmosphere relate microturbulent veloc hydrogen ratio for G dwarfs [NASA-CR-93686] 09 p1426 N68-19348

n theory for astron (SC-T-68-15021 11 p1782 N68-21206 Matrix method for calculating source function, mean intensity, and flux in model stellar atmosphere [NASA-CR-95767] 17 p2972 N68-29416

ns of gas dynamic equations for in stellar atmosphere and for Approximate solu shock wave dissipat [FTD-HT-23-514-67] 19 p3364 N68-31313

Model atmospheres for RR Lyrae stars [NASA-CR-95982] 19 p3365 N68-31434 Shock tube measurement of calcium autoionization ne oscillator strength for use in stellar atmospheric

model calculations (NASA-CR-96146) 19 p3366 N68-31695

STELLAR DOPPLER SHIFT
U DOPPLER EFFECT
U EXTRATERRESTRIAL RADIATION STELLAR EVOLUTION

Lifetimes of ultraviolet dwarfs and nuclei of planeta-nebulae ry nebulae (NASA-TM-X-60768) 04 p0574 N68-13241

Quasars and strong radio sources, dense star systems evolution, stellar collision dynamics, counic ray elec-trons, intergalactic hydrogen absorption lines, and stel-

[CRSR-284] 04 p0575 N68-13307 Energy losses in nonro respect to stellar evolution ing stellar systems with

04 p0575 N68-13335 Conference dealing with evolution of binary stars 05 p0738 N68-14691

ary star properties, effects of rotation and mag-fields on formation of single and multiple stars, in and novae, and other aspects of stellar evolu-

05 p0738 N68-14694

Structure of nonspherical stars, variations of orbitals and tidal influences, and evolution of massive and close 05 p0738 N68-14695

Mass loss, variations in orbital element, transfer of angular momentum, and evolution of binary stars 05 p0738 N68-14696 ation and disruption of binaries in near

[NASA-TT-F-11541] 08 p1242 N68-18137 Magnetic field effect on stellar as

09 p1418 N68-18527

uclear processes 09 p1388 N68-18613 Stellar composition [AFOSR-68-0124] de red shift relations are con-cal models, using computed past Theoretical magnitude re ructed for cosmological mo istories of giant elliptical sys

hydrostatic equilibrium (RIFP-66) 09 p1422 N68-18887 ars to stage of quasi-

10 p1590 N68-19573 Computerized simulation of evolution of spiral galax-

[NASA-TM-X-61081] 13 p2149 N68-23316 Age factor in color-magnit and red giant stars in open clu de distribution of yellow 14 p2347 N68-25223

Late-evolution sequence compared with color-mag and red giant stars observe ces for stars of various masses mitude distributions of yellow nd in open clusters 14 p2348 N68-25409

scattering, stellar evoluted topics in nuclei Photoionization, electron in, conservation laws, and physics - lect (ISS-67/30) 14 p2301 N68-25633 e on evolution of red

16 p2755 N68-27075

Structure and evolution of low mass stars and stellar ydrogen with electrostatic interaction 16 p2757 N68-27321

Structur Outer ring INASA-C

Superno Astrono from Ven chondrite models

erties o NASA-T Phase d

Gravita

Gravita

Jeans C Effect of single s

Format Hertzs (RTS-47) Mather

Evoluti [AFCRL STELLAR U STAI U CELI U INEF STELLAR Synopt bility and [FTD-HT

Barred FORT

from abs tron cone [NASAof horizo Airbor NASA-Calibra

(NASA-Autoci by interfe [NASA-Densit

Red s derived i [NASA-STELLAR NT SO

Magne

DEX

4917

type

6038

\$10t

is of

9344

cor-

9348

1206

416

s for

313

434

695

eta.

241

ith

135

91

95

of

17

27

13

17

on of protostellar disks and stion prior to Hayashi track 16 p2757 N68-27383 Structure and evolu-outer rings in stellar evo [NASA-TM-X-61135] Cometary origin of m [NASA-CR-95345]

16 p2769 N68-28038 Supernovae theory of s 18 p3166 N68-30296

Astronomical studies in U.S.S.R. - radio emission from Venus, solar mass effect on radiation pressure, chondrite structure, Arend-Roland comet, and stellar 19 p3370 N68-32058 Mathematical model for con-perties of one dimensional sputing equilibrium pro-self-gravitating stellar

NASA-TR-R-2891 20 p3588 N68-32978 rical stellar systems 20 p3593 N68-33604

Phase distribution of a [RTS-4663] Gravitational instability and forn characteristics of stars and galaxies ation and structural

21 p3767 N68-34207 Initial collapse and dynamical mixing of spherical

21 p3769 N68-34222 Gravitational instability of interstellar medium and

21 p3769 N68-34223 Numerical studies relating to star formation and Jeans theory applied to gravitational collapse 21 p3769 N68-34227

us of stars and galaxies 21 p3769 N68-34228

Effect of rotation and magnetic fields on formation of single and multiple stars 21 p3770 N68-34230 Formation of close binary syste

21 p3770 N68-34231 Hertzsprung-Russell diagrams derived to study evolution of close binary systems [RTS-4774] 22 p3957 Nos-34860

Mathematical models of stellar evolution through nuclear fusion detailing neutron production and cap-22 p3958 N68-34937

Evolution of 30 solar mass star of population 1 [AFCRL-68-0364] 24 p4342 N68-38063

U STAR DISTRIBUTION

STELLAR INERTIAL NAVIGATION
U CELESTIAL NAVIGATION
U ENERTIAL NAVIGATION

STELLAR LUMINOSITY

Synoptic weather front effects on atmospheric sta-bility and stellar image observations [FTD-HT-66-604] 02 p0231 N68-11319 nions 02 p0231 N68-11319

Barred spirals NGC 4618 and NGC 4625 luminosity distribution from photographic photometry 02 p0267 N68-11635

Mass-luminosity relations in binary stars, Hertz-sprung-Russell diagrams, and photometric and spectro-scopic scanning techniques 05 s0739 N68-14697

FORTRAN program for computing stellar opacity om absorption spectra, electron scattering, and elecfrom absorption spectr tron conduction data (NASA-TM-X-631191

08 p1216 N68-18064 Determination of helius of horizontal branch stam (NASA-TM-X-63109) es, and luminosity

08 p1242 N68-18173 Airborne stellar photome determination of day sky bright [NASA-CR-1017] ry and spectrometric

10 p1590 N68-19590 Calibration curves for bright unfiltered tracking phototubes [NASA-CR-94347] ter navigational stars by

13 p2148 N68-23139 Autocorrelation of in t stellar light measured by interferometer [NASA-TN-D-4480]

14 p2261 N68-25518 Soviet bloc research in planetary origins, solar at-mosphere, luminosity functions, star density, and radio

15 p2557 N68-25823

Density distribution of variable str 22 p3958 N68-34960 er hypothesis using Q values mosity, period, and spectrum 23 p4166 N68-36239 Red supergiant pulsar hyperived from stellar luminosity. [NASA-TM-X-61284]

STELLAR MAGNETIC FIELDS NT SOLAR MAGNETIC FIELD

Magnetic field effect on stellar accretion 09 p1418 N68-18527

Photoelectric narrow band photometry of magnetic ad related stars 10 p1593 N68-20135

STELLAR MASS

Physical and optical coupling, apparent and real rela-tive movement, and distributions and mass ratios of bi-05 p0738 N68-14693

Quantum mechanical Kubo expressions used to find electrical and thermal conductivity, and shear viscosity of degenerate Lorentz electron gas in study of stellar

18 p3163 N68-29932 s of stars and galaxies 21 p3769 N68-34228 Jeans criterion and dimens

nes of B stars in I

22 p3959 N68-34963

STELLAR MASS EJECTION

Mass loss, variations in orbital element, transfer of agular momentum, and evolution of binary stars 05 p0738 N68-14696

Mathematical model for ejection mechanism of ex-tragalactic radio sources [NASA-CR-91807] 06 p0914 N68-16025 Stellar mass ejection giant stars of 5 solar mas 16 p2755 N68-27075

on supernovac [NRC-TT-1323] 19 p3371 N68-32181 Survival of heavy nu in Colgates supernova

cosmic ray acceleration [NASA-TM-X-63363] 23 p4164 N68-37233 STELLAR MOTIONS

Motions of open cluster IC 4996, Off-stars near P Cypni, and open cluster NGC 2301 stars [REPT.-76] 03 p0413 N68-12048 oscillations of Cepheid lar surface 07 p1082 N68-17031 Discrete model of star, a iodel, and oscillations near

Schmidt telescope survey of proper motion stars [PB-175946] 07 p1000 N68-17048 sted stellar proper Design and operation of

motion measuring system [NASA-CR-94336] 12 p1874 N68-22454 Harmonics, pulsation an tion of Cepheid variable sta [NASA-CR-87250] de, and vibratory mo-

16 p2758 N68-27467 Star cluster M13 mot [RTS-4134] gnitudes, and color 20 p3586 N68-32688

Stellar orbits and stability of spiral structure 21 p3769 N68-34220 ical photography 23 p4168 N68-36496

Structure and pulsation poor massive blue stars wi [NASA-TM-X-61297] properties of hydrogen lium cores 23 p4172 N68-37166 stars for regions G211 tographs 23 p4173 N68-37347 Catalog of proper motion through G225 - tables and n

ons G226 through G235, cts, found by direct mea-Northern Hemisphere 23 p4174 N68-37391 Catalog of 549 stars in regic icluding 8 white dwarf suspec arement of proper motions in

STELLAR OCCULTATION

Electronic star occultation navigation during Gemini 10 flig 05 p0686 N68-14163

STELLAR RADIATION

Design and performance requirements for X ray as-commy experiment on Apollo applications program [NASA-CR-65888] 07 p1086 N68-16505

13 p2146 N68-23676

Nucleogenesis theories on stellar and galactic cosmic rays and meteorites, and high energy nucleosynthesis principles 19 p3323 N68-31025

Sounding rocket and sa and stellar radiation at Laborators 21 p3762 N68-34065

STELLAR REFRACTION
U ATMOSPHERIC REFRACTION

STELLAR ROTATION NT SOLAR ROTATION

04 p0575 N68-13335

Time measurement services at Latvian Astronom Observatory in support of meteorological geophysical studies, and effects of irregularities in ex-

95 p0740 N68-14922 Time lag of photoelect ind effects of temperate ind optical properties ar time transit device nomberic absorption. 05 p0740 N68-14927

ion of grating slits effect on accuracy of star 05 p0740 N68-14928

Spectrographic observation and internal mo [AD-662468] ons of red shifts, stellar s of bright galaxies 08 p1235 N68-17297

(NASA-CR-93728) 10 p1591 N68-19800 d its effect on stellar rota-

INASA-TM-X-633521 22 p3962 N68-35731

STELLAR SPECTRA NT SOLAR SPECTRA

Spectral analysis of possible abundance anomalies in close binary stars in spectral region Ao-A2 and F5-F6 [NASA-TM-X-63042] 02 p0269 N68-11821

05 p0733 N68-14787

Velocity curve derived for NGC 4449 galaxy 05 p0739 N68-14916

Position and location of flat Praescpe clusters, Orion neb matic liquid filters, and stellar s are stars in Pleiades and bula through monochro-repectrophotometry in or 06 p0907 N68-15085 s by hydrogen and heli-

um spectral line observe [NASA-TM-X-60843] 07 p1075 N68-16276

Elemental abundances for Tau Bootis, and metallic and ten other solar-type stars netal-rich solar-type star calcium abundances for 13 p2151 N68-23767

of stellar spectra and rs NGC 2483 and NGC 14 p2347 N68-25262

Spectral classification, photometry, and surface dis-tribution of stars in region of Cepheus 4 association 18 p3161 N68-29698

p related to recom-Trapping ions and vector co ination spectra of complex at

18 p3162 N68-29844 Optical study of stellar flares 20 p3592 N68-33389

pothesis using Q values ty, period, and spectrum 23 p4166 N68-36239 derived from stellar lun [NASA-TM-X-61284]

absolute calibration of energy distribution of 12 ctrophotometric standard stars 24 p4340 N68-37639 Spectral classification for carbon stars in red or blue

24 p4340 N68-37642

STELLAR SPECTROPHOTOMETRY

tesearch proposal for extra-a n-atmospheric observa-ces on rockets and satel-[NASA-TT-F-11233] 01 p0066 N68-10986 bee rocket ultraviolet spectrophotometry in (NASA-TM-X-63044) 02 p0267 N68-11652 Stellar spectrophotometry of 197 stars in or near Orion nebula 02 e0267 N68-11716

Surface temperatures calculated for hot white dwarf 04 p0375 N68-13344

imentation and techniques for ultraviolet stellar (NASA-CR-91378) 04 p0576 N68-13388

netry of magnetic 10 p1593 N68-20135

Approximation of a magnitudes from multic [NASA-TM-X-63185] ergy distributions and 12 p1969 N68-22932 of metal-rich Chi

13 p2151 N68-23766 Photometric measurements of 2533, NGC 2567, NGC 2571, at

16 p2754 N68-27023

17 p2965 N68-28362

23 p4172 N68-37057

24 p4340 N68-37639

03 p0384 N68-12323

05 p0738 N68-14692

05 p0738 N68-14695

07 p1080 N68-16619

09 p1424 N68-19168

10 p1589 N68-19516

16 p2757 N68-27321

alysis to determine

SUBJE

Eval

[NASA

STERNS U AF

STEROU

NT C

Adre

at low

(SAM

Gen and re

STIFF S

STIFFE

Sur fened [NAS

Cor

simply having [NAS

Pre on bu cylind [NAS

Fin

Bu

Bot

Ex

DLF

simpl [NAS

longi jecte ARI

STIFF?

Ge

TR-

Sti meni tions [NA

Sh unde [VP-

FUNC IKA

teri

sis of

STIELT.

Spectrophotometry of galactic nebulae internal pacity and internal mass structure of HII emission re-AFCRL-68-00781 Effective temperature for normal and peculiar A stars, from spectroscopic and photometric study of visual colors Near infrared photometry of late type stars [AFCRL-68-0042] 18 p3162 N68-29810 IFCHA. Stellar image fluctuation and error Stellar image fluctuation and error botoelectric tracking system design 20 p3436 N64-32499 using RTS-4527] Calcium K line strength for 146 A stars using sotoelectric grating slot spectrometer 20 p3587 N68-32806 Tables of spectrum line numbers for stellar photo-Absolute calibration of energy distribution of 12 STELLAR STRUCTURE Dipole moment of oxygen-hydrogen radical, icrowave spectrometer for study of free radicals, ewtonian gravity theory in dyadic notation, and wave ropagation in stellar system Introductory lecture to conference on evolution and structure of binary stars Structure of nonspherical stars, variations of orbitals and tidal influences, and evolution of massive and close bioscient Calculation method for sun structure on basis of real NRL-6580] Stellar physics and sunspots, solar winds and flares, planetary emissions, and other astronomical research in U.S.S.R. Model atmosphere anal abundances, in stellar structures [NASA-CR-93693] Structure and evolution of low mass stars and stellar hydrogen with electrostatic interaction

Structure and evolution of protostellar disks and outer rings in stellar evolution prior to Hayashi track [NASA-TM-X-61135] 16 p2757 N68-27383 Structure and pulsational properties of hydrogen poor massive blue stars with helium cores [NASA-TM-X-61297] 23 p4172 N68-37166 STELLARATORS Excitation of fast magnetoacoustic wave in stellars-[MATT-TRANS-43] 09 p1401 N68-18570 Estimated stability of st utor magnetic field force nst static pertur [REPT.-33] 12 p1856 N68-22668 Structural analysis and magnetic field topology of stellarator diverter [MATT-TRANS-46] 12 p1857 N68-22951

Interaction of charged particles with plasma in a stellarator [NASA-TT-F-11629] 14 p2321 N68-24459 Longitudinal magnetic field calculated for Sirius rucutrack stellarator [NP-TR-1619] 14 p2324 N68-24898 Effects of toroidicity on magnetic surfaces of stel-16 p2639 N68-28046 [NP-TR-1636] of strongly-turbulent [MATT-580] 21 p3749 N68-34164 Toroidal stellarator magnetic trap with double coil agnetic field

22 p3942 N68-35321 Sirius stellarator design characteristics, and plasma generation and heating arrangements [MATT-TRANS-45] 23 p4144 N68-37158

Pulsed electron beam used to determine magnetic surfaces in racetrack-shaped stellarator [IPP-2/69] 24 p4304 N68-38454 STELLITE (TRADEMARK)

[NASA-TT-F-11630]

Emittance values for Haynes 25 for aerospace nuclear safety reentry analyses [SC-RR-66-576] 05 p0674 N68-14377 Effect of solidified structure ties of carbon steel and Stellite res on mechanical proper-21 p3702 N68-33783

STEP FUNCTIONS

Variable mesh multistep methods for ordinary dif-[NASA-CR-91341] 04 p0529 N68-13301 Multiple intogration within moving interval for determining characteristics of complex dynamic systems [NASA-TT-F-11220] 08 p1155 N68-17611

Data correlation on temperature transition change in ressure vessel steel with irradiation exposure based on ep function damage model tep function damage model WAPD-TM-471, ADD. 1]

12 p1904 N68-22328 tor with step function for ti or timing signal delays 14 p2254 N68-24593 EIR-1301 Nonlinear step pulse stee cation to proton synchroton [CERN-68-25] ing delay line for appli-20 p3452 N68-33204

Runge-Kutta formulas of high order with stepsize control through leading truncation error term [NASA-TR-R-287] 23 p4089 N68-36753

STEREOCHEMISTRY

Sterochemistry of cyclohexene derivatives and abmethylcarbinols 09 p1295 N68-18892

and stereochemistry of m and cleavage reactions asymmetric silicon - formati of ullicon-carbon bond 10 p1493 N68-20496

Stereochemical classification ion of molecular groups in netric syntheses, and optinuclear spectroscopy, asymmetal purity analyses 16 p2611 N68-27882

Stereochemistry and reaction kinetics in oxidation of butylbenzene in emulsion by molecular oxygen 16 p2602 N68-28332

Optically active polymeric imidazole and its effects on solvolysis of esters for explanation of stereospecificity of enzyme catalyzed reactions

17 p2837 N68-28455

studies of C 13-CO metal carbonyls 17 p2840 N68-28840 Vibrational spectroscopic exchange and substitution with

Conformational studies of polypeptides containing touromatic and nitrouromatic side chains 18 p3020 N68-29863

kinetics of electrophilic additions to acetylenes [AD-669614] 18 p3032 N68-30863 Silicon nitrogen bond in stereochemistry studies of symmetric silicon

20 p3429 N68-33045

STEREOGRAPHY U STEREOPHOTOGRAPHY

STEREOPHOTOGRAPHY

Analytic method for a preparation of aerial photograph [FTD-MT-65-517] stereophotogrammetric hy materials 06 p0846 N68-15568 etric compilation maps of fissure Stereophotogram [ACIC-TC-1292] 06 p0841 N68-15845 Stereophotogrammetric defe on three dimensional structures etric deformation measurements

07 p1093 N68-17136 npared for monocular (AD-664184) 09 p1333 N68-18694 trical survey of noctilucent [NASA-TT-F-11520] 09 p1333 N68-18821 Comparison of two-photo and three-photo relative 10 p1527 N68-19501 [PB-176462] Lunar mapping from sta ments from Ranger photogr. [NASA-CR-92080] tographic measure 12 p1873 N68-22331 Theoretical analys (AFOSR-68-0673) phic process 14 p2296 N68-24350

viet textbook on and equipment used in aerial photography at [FTD-MT-63-220] 16 p2659 N68-27136 t for variable scale

Optical marking equi stereophotography applica [TR-39-TR] 18 p3071 N68-29719 Equipment and techniques stereophotography and spect is for high speed X ray ctrographic recording of

[FTD-HT-67-210, V. 9] 19 p3277 N68-31423

Acoustic holography demonstra space point, wave front may be sys illuminated by changing wave field [DOUGLAS PAPER-5150] tes recording at on thesized, and object 24 p4257 N68-38000 STEREOSCOPIC PHOTOGRAPHY
U STEREOPHOTOGRAPHY

STEREOSCOPIC VISION

Binocular perception and electrophysiological stu-dies of suppression and fusion in stereopais [SRRC-CR-67-36] 04 p0451 N68-12977 Human depth perception of television displays in

(NASA-CR-61630) 09 p1289 N68-19145 Successive comparisons metho thod used for distance 10 p1474 N68-19705 [NASA-CR-73205]

Experimental procedures for studying factors affecting visual planimetric pointing [AD-668260] 15 p2467 N68-26241 15 p2467 N68-26241 STEREOSCOPY

NT STEREOPHOTOGRAPHY

CALCOMP 570 plotter for stereoscopic drawing of free dimensional lines and curves - computer prothree dimensional grams included [NOLTR-68-48] 19 p3247 N68-31388

STEREOTELEVISION

Stereotelevision versus nonstereotelevision extraterrestrial environments of target acquisition in extraterrestrial environments with poor signal to noise ratio 09 p1289 N68-18903

STERILIZATION NT CHEMICAL STERILIZATION NT SPACECRAFT STERILIZATION

Module truss, propellant tanks, and functional tests for sterilizable bipropellant liquid propulsion system exposed to ethylene oxide

[NASA-CR-90333] 02 p0261 N68-11176 Continuous coating apparatus for heat sterilizable hattery separators [NASA-CR-90330] 02 p0162 N68-11225 Thermally sterilized nickel cadmium buttery

[NASA-CR-90501] 02 p0163 N68-11804

Effect of heat sterilization on electrochemistry of ickel-cadmium batteries nickel-cadmium butte [NASA-CR-92531] 06 p0768 N68-15505 Development, heat sterilization, and shock testing of lver-zinc cell

INASA-CR-93180] 08 p1119 N68-17342 Exposure of assembled and fueled bipropellant liquid rocket propulsion system to ethylene oxide and heat sterilization environments [NASA-CR-93191] 08 p1230 N68-17407

08 p1230 N68-17407 Zirconium oxide loadi varied to improve separate ngs and coating methods its for heat sterilizable but-

[NASA-CR-93194] 08 p1119 N68-17493 Hydrazine-based bi system exposed to ethy pellant liquid propulsion oxide and heat sterilization environments [NASA-CR-94041]

11 p1777 N68-21076 totubes with visible reponse for use in sci [NASA-CR-94244]

12 p1848 N68-22064 Copolymeric separa sterilizable battery [NASA-CR-94322] ilm preparation for heat 12 p1818 N68-22211

Combined effects of ethyl thermal sterilization on spac [NASA-CR-94312] cecraft polymeric materials 12 p1894 N68-22344 Systems approach for mination control techni lishing cohesive con-

tamination control to [NASA-CR-94357] 12 p1823 N68-22442 Standard contamina work in experimental a evention procedures for and sterilization labora-

INASA-CR-94351] 12 p1826 N68-22765 Microbial load caused by stopping laminar flow in sperimental Assembly and Sterilization Laboratory

NASA-CR-94385] 12 p1857 N68-22776 ng of Experimental As-tory /EASL/ 12 p1882 N68-22777 Procedures for rou sembly and Sterilizat [NASA-CR-94390]

Impact specifications and a bilities for high energy electroc [NASA-CR-94404] sterilizable battery cupaemical cell 12 p1821 N68-22908 dies on germfree animals 18 p3011 N68-30528

Capacity loss in heat sterilizable impact resistant electrochemical cells [NASA-CR-95981] 19 p3205 N68-31518

19 p3205 N68-31518 Development of sterilizable wide angle gas bearing NASA-CR-96134] 19 p3278 N68-31525

[NASA-CR-66671]

[NASA-CR-97352]

STEROIDS

NT CORTICOSTEROIDS

NT TETRACYCLINES

U AFTERBODIES

STIELTJES INTEGRAL

Electrical performance, bioassays, and packaging oncepts evaluated in sterile assembly of silver zinc

DEX

al sin-

12977

ays in

19145

nt 19705

ffect-

6241

ng of

1388

tive-

1903

176

shile

225

ery

104

of

05

of

07

13

stic system parameters 01 p0041 N68-10247

01 p0083 N68-10249

01 p0041 N68-10305

01 p0085 N68-10642

01 p0085 N68-10692

programs with recourse of linear programming

02 p0226 N68-11069

02 p0191 P68-11122

for probability general

es in applied proba

STOCHASTIC PROCESSES

NT MARKOV CHAINS

NT MARKOV PROCESSES

NT RANDOM PROCESSES

[AROD-5211-4]

INASA-CR-90093)

TR-281

REPT.-544)

(D1-82-0627)

Special forms of stock ormulated as generalized ader uncertainty model

Near-optimal stochastic i [D1-82-0647]

chartic Line

ation of stock

Generalized listow and complex Wiener integrals, and related integral equation 13 p2094 N68-23623 STIFF STRUCTURES U RIGID STRUCTURES STIFFENING weight design aspects of stiffened cylinders under compressi [NASA-CR-963] 02 p0275 N68-11282 Computer programs for calculating instability of simply supported, axially compressed circular cylinders having longitudinal and circumferential stiffenses [NASA-CR-91141] 03 p0421 N68-12237 Prebuckling deformations, and ring stiffener effects on buckling load of eccentrically stiffened orthotropic cylinders [NASA-TN-D-4283] 05 p0746 N68-14091 Finite element method applied to static stress analysis of shallow shells and elastic edge stiffening [AD-664822] 10 p1605 N68-19894 Buckling behavior of circular cylindrical shells with eccentric longitudinal stiffeners [DLR-FB-67-75] 11 p1796 N68-21301 Boundaries of regions of parametric instability of imply supported stiffened rectangular plate [NASA-CR-94675] ngular plate 14 p2354 N68-24439 [NASA-CR-99017] Experimental investigation to determine effect of longitudinal stiffening on strength of conical shells sub-jected to axial compression loads and internal pression (RRLSM-313) 17 p2982 N68-29037 STIFFNESS General theory for optimal design of elastic stru-(TR-14) 01 p0143 N68-10581 Stiffness matrices derived for triangular shell ele-ments associated with polyhedral deflection distribu-NASA-CR-932061 08 p1245 N68-17384 Shear deflection equation for plywood box beams (VP-X-311 08 p1252 N68-17693 Relative stiffness of macromolecules in polymer chains evaluated by rate of change of polymer coils with changing second virial coefficient 10 p1488 N68-20095 Bending stiffness effects on vibration frequencies of bur in static tension under own weight 15 p2161 N68-23611 Stresses and deformations in cracks and joints of elastic structures which do not transfer tensile stresses 15 p2566 N68-25727 Mass matrix for prismati-function in formulation of stif [KAPL-M-6913] ntic bar using deformation siffness matrix 17 p2921 N68-28986 stic stiffness and propertie ns of rubidium 19 p3290 N68-31055 TR-111 Effects of notch geometry, temperature, and stiffness of stress state on notch sensitivity of heat resistant alloys [RTS-4406] 20 p3599 N68-32347 Stiffness matrix for curved memb mbrane shell 21 p3783 N68-33790 Direct stiffness finite element technique for computerized stress analysis of aircraft structures 21 p3783 N68-33792 Stiffness and mass matrices for finite cylindrical shell element to be used in predicting vibration modes of curved fan blade 21 p3787 N68-33842 Stress and displacement discontinuities on stiffness characteristics of elastic structures - continuum (PUBL.-123) 23 p4184 N68-37256

Approximate theory using effective sti describe dynamic behavior of laminated medi minated media 24 p4348 N68-37678 21 p3627 N68-34330 STR-BENE Evaluation of filters used to sterilize liquids and gases Steric hindrance in thermal and catalyzed isomeriza-ous of chlorinated dischlorostilbenes 04 p0469 N68-13529 24 p4261 N68-37810 STIMULANT U CAFFEINE U NOREPINEPHRINE STIMULATED EMISSION Adrenocortical steroids, body organ weights, and he-matology of rats exposed to pure oxygen environments at low pressures for application to low pressure, nor-motic environments [SAM-TR-67-78] 10 p1468 N68-20208 Stimulated in rwitch laser [REPT.-8581] ed Raman emission computed from Q-02 p0220 N68-11765 Stimulated Raman effect und excitation studied in hydrogen ga [TR-539] der high intensity laser 10 p1468 N68-20208 03 p0349 N68-12269 Fluorescence of proteins and their electron stim lated states (REPT.-1203) 04 p0452 N68-13100 ion cross section 07 p1004 N68-16618 NELC-15181 Effect of ultraviolet and X ra ted emission from colored sod am chloride crystals 08 p1226 N68-17994 ing of electrons by Q 11 p1708 N68-20630 on effects in nitrogen, 11 p1708 N68-20705 mic molecules 19 p3225 N68-31297 (UTEC-MD-68-015) Thermal instability n radiative recombination line intensities u [NASA-CR-96160] ions in H 2 region 19 p3370 N68-32057 Spectral characte m areenide p-n june FTD-HT-67-393] lated emission galli-22 p3952 N68-35872 23 p4113 N68-36122 Stimulated Raman effect in off-axis resonator 23 p4072 N68-36305 23 p40'S
STIMULATED EMISSION DEVICES
NT GALLIUM ARSENIDE LASERS
NT GAS LASERS
NT GAS MASERS
NT INFRARED LASERS
NT INFRARED LASERS
NT LASERS
NT LASERS
NT LASERS
NT MASERS
NT ORGANIC LASERS
NT ORGANIC LASERS
NT OF WILSED LASERS
NT OF WILSED LASERS
NT OF WITCHED LASERS
NT SEMICONDUCTOR LASERS
NT SEMICONDUCTOR LASERS
NT SEMICONDUCTOR LASERS
NT SOLID STATE LASERS SOLID STATE LASERS
TRAVELING WAVE MASERS Atmospheric effects on beam energy distribution of aser range finder
[BRL-MR-1871] 08 p1183 N68-17773 Design and development of for space vehicle application [NASA-CR-94937] nt of atomic hydrogen maser 15 p2477 N68-25901 Diffractometry with iron-55 and beta excited X ray [COO-1239-15] 16 p2614 N68-28145 tum generator light ber WESTONS [FTD-HT-23-809-67] 18 p3083 N68-30106 Argon laser beam displightness modulator lay system with raster scan and

NT AUDITORY STIMULI

STIMULI

Composition limit the ing functions [MRC-TSR-732] 02 p0228 N68-11349 R67SD501 02 p0199 N68-11363 Linear stochastic a with application to ap guidance problems (NASA-CR-90504) ptimal feedback contro minimum fuel midconro 02 p0193 N68-11862 in optimal strategy is early strategies for co-ocess under coatty se Computer program is lass of non-randomized olling Poisson product [FSU-M125] First and second orderveloped for approxim utic gradient algorithms nknown density and dis-[TR-EE67-14] 03 p0331 N68-12110 04 p0528 N68-12986 [TR-542] **Optimally** scale tain column and row (D1-82-0645) 04 p0528 N68-13026 eme with accelerated [NASA-CR-91434] 04 p0529 N68-13217 Cramer theory of n rocesses applied to d clocity in given intervals stationary stochastic 04 p0500 N68-13342 nal control problem of scraft with low threat rocket [RE-309] 04 p0535 N68-13628 bly additive orthogonally in Hilbert space, and in-land functions 06 p0859 N68-15092 regration of related of [NRC-TSR-738] Stochastic ore (AD-662034) 06 g0860 N68-15157 em for generalized integrals summable by Abel-Poisson d trig 06 p0862 N68-15429 Analysis of single queue system for two priority quest flows 06 p0864 N68-15586 n learning behavior in 20 p3494 N68-33411 sductor quantum generator with external 06 p0784 N68-15927 Bayesian reliab 07 p1014 N68-16403 22 p3886 N68-35566 Nonlinear perturba and control of tim systems when measur [NASA-CR-92981] ry for optimal estim 7 90977 Nee-16918 Tracking instrument for neurophysiological study of reshold of electrical stimulation of nerve cells 17 p2829 N68-28605 ack system bang-beng control of 07 p0978 1968-16972 Quantitative measurements of responses attributed to stimulus in stimulus subject systems [NASA-CR-62057] 11 p1733 N68-21829 undom variable 06 p1192 N68-17275 SC-DC-67-2118 reparison of polynomial coef-Test procedures for co-cients of polynomial gr Mass transfer for opherical particles asspended in stirred aqueous iodine solutions

lated residuals (ARL-67-0199)

14 p2240 N68-24551

08 of 194 N48-18843

STOCKPILING

SUBJEC

sphere i with Sto (TR-20

Speci

STOKES

STOL AL

STOMAC

Effec

ulcers a

STONES U RO

STONY !

NT A

Abla

(NAS/

Com and Xe [MPIH

STOPPU

STOPPE

Opti

For

Que

(UCR

FO

(GA-

Ret

(FTD

Pas

STORA

Sys

NA

Re

|NA

Pre

St

INA

Fa

INA

C

H

iN.

IN.

03 p0364 N68-12394

(USN

Unconditional time to failure distribution derived from stochastic hazard functions [RAC-TP-280] 09 p1357 N68-18357 Stochastic structure in algorithm for analyzing PERT 09 p1360 N68-18583 Mathematical model for bala cing stochastic lines 09 p1365 N68-19377 Stochestic integral equations 10 p1544 N68-19602 Convergence rate bound on estimated Bayes solution to Bayes risk with discrete time Markov processes 10 p1546 N68-19755 orochastic programs in abstr [D1-82-0672] 10 p1509 N68-19880 Convexity preserving properties of totally positive (ORC-67-36) 10 p1547 N68-19917 Ladder processes for constructing basic stochastic process in continuous time and obtaining limit theorems, with results applied to queues [TR-34] 10 p1547 N68-20015 Stochastic programs for convex functions and con-nuity mathematics [D1-82-0704] 11 p1723 N68-20655 Convergence in distribution of stoch [TR-10] 11 p1726 N68-20896 Algorithm for optim stochastic linear systems [D1-82-0695] nal control of discrete time 11 p1677 N68-21012 vertibility of matrices 11 p1733 N68-21824 Literature survey [NASA-CR-62058] Statistical feedback op systems with measur [NASA-CR-94291] 12 p1851 N68-22015 Conditions for asymptominimum variance estimatio [NASA-CR-94292] tic stability of discrete 12 p1897 N68-22025 Cybernetics applications ochastic processes, single animal metabolism to feedback control in product dynamic model, (JPRS-45276) 12 p1852 N68-22285 Controlled feedback to evaluate stability reserve of ochastic objects undergoing stationary random varia-12 p1853 N68-22286 Existence theorems and com for finite state stochastic games [NASA-CR-94428] putational procedures 12 p1899 N68-22805 Numerical methods for solving degenerate nonlinear elliptic equations arising in optimal stochastic control [NASA-CR-94427] 12 p1854 N68-22812 Associated random variables defined and results ap-plied to reliability models of various types of main-13 p2093 N68-23394 Likelihood functional for coherent multiple sensor using Gaussian statistics [REPT.-6400-150-T] 13 p2026 N68-23431 Nonlinear perturbation theory for estimation and ic systems 13 p2044 N68-23487 Summary data on identification and sensitivity problems of optimal stochastic control [PIBEE68-0001] 14 p2231 N68-24353 Dynamic stability stochastic excitation [DOC.-678D299] lity of structures subjected to 14 p2354 N68-24463 Stochastic analyses for model systems with repaira-[R67ASD6] 14 p2263 N68-24529 Optimal stochastic cor Mars transfer trajectory stic control theory applied to Earth-14 p2233 N68-25233 Stochastic process over discrete abelian group 14 p2281 N68-25468 Risk aversion in stochastic programming with [RR-122] 16 p2692 N68-27027 Optimization of stock-respect to probability of specific time interval [NASA-CR-95140] stochastic control processes with lity of entering target manifold in 16 p2633 N68-27207 Distribution function for stochastic heating of parti-cles in magnetostatic field, and particle diffusion [IPPCZ-77] 17 p2935 N68-29165 ons - maximum likelihood de-on processes in background of Optical communic action of M-ary Po

Progress reports on mathematical research, statisti-al analysis, computer programming, stochastic rocesses, power reactors and nuclear fuels, genetics, nd radiation dosages [ORNL-4236] 17 p2907 N68-29530 Volterra functional analy with deterministic and stocks alysis of nonlinear systems hastic inputs 18 p3050 N68-29923 Functional polynomials and stochastic approxima-tion procedure for identification of nonlinear systems of nonlinear systems 18 p3102 N68-29935 First order certainty equi in management planning [TR-27] nce for decision making 18 p3104 N68-30026 Numerical solution of stochastic Hamilton-Jacobi equation for fuel optimal spacecraft attitude control [NASA-CR-95882] 18 p3171 N68-30281 Statistical distribution matrices for jointly staconary time series analysis [TR-145] 18 p3106 N68-30537 Efficiency of nonparametric tests in detection of ochastic signal in noise 19 p3236 N68-30937 Optimal control algorithms for mean-square error in me stochastic linear dynamic systems ID1-82-06931 19 p3255 N68-30969 Equivalent gain function and stochastic analysis for nonlinear sampled-data control system
19 p3255 N68-31089 Optimal control of discrete time stochastic system whose dynamic equations and loss function are linear in state vector with random coefficients [P-3631-1] 19 p3255 N68-31171 Optimal control of discrete-time stochastic system with dynamic equations and loss function linear in state [P-3631] 19 p3257 N68-31822 FORTRAN computer programs for graphical evalua-tion networks with exclusive or-gates [NASA-CR-96294] 20 p3445 N68-33137 Optimal adaptive filter for sampled stochastic processes with unknown parameter [NASA-CR-96374] 20 p3454 N68-33163 Theory of learning stochastic s 20 p3454 N68-33305 Effect of stochastic di nces on behavior of stabilized platform with gas bearing gyroscope as sensor (BMWF-FB-W-68-36) 21 p3691 N68-34197 Distribution theory to represent stochastic modula-[NASA-TM-X-61230] 21 p3660 N68-34322 Optimal decision rules for stochastic programs ap-lied to inventory control problem 22 p3899 N68-35183 Constrained maximum likelihood estimation of N stochastically ordered distributions [WMSI WORKING PAPER-138] 22 p3899 N68-35276 Stochastic and kinetic interaction processes related to solar probe mission 22 p3962 N68-35784 Decoder analysis for convolustochastic sequential machine model [NASA-CR-97101] 22 | tional codes by 22 p3839 N68-35912 Optimal filtering and control of time-continuous ochastic dynamical systems 23 p4035 N68-36368 Stochastic sequential machine figures of merit calculated for performance and task complexity
23 p4026 N68-36673 Stochastic control algorithm for discrete time [NASA-CR-97188] 23 p4037 N68-36690 Maximum likelihood identification of stochastic [NASA-CR-97269] 23 p4038 N68-37165 Stochastic stability of heavy liquid free surface en-closed in partly filled prismatic cylinder subjected to random vertical acceleration [NASA-CR-98009] 23 p4052 N68-37231 Stochastic approximation used development in pattern classificati sed for iterative design ation 24 p4238 N68-37592

Optimum receiver method for estimating prace unferences between stochastic narrowband signals 24 p4223 N68-37640

Alternate derivation of equations developed by Kraichnan on dynamics of nonlinear stochastic systems

methods for regression

on problems 24 p4223 N68-37651

24 p4277 N68-38269

Stochastic approximation function analysis in communic

[ARL-68-0075]

CERN Electron Storage and Accumulation Ring ICESAR/ efficiency - effects of background noise on particles in high frequency accelerators [CERN-68-3] 14 p2238 N68-25488 STOICHIOMETRY Urania behavior in thermal gradient and control of [GEMP-516] 03 p0356 N68-12169 Mathematical model of charcoal ignition tempera-tures in relation to charcoal activity, oxygen activity, reaction stoichiometry, and activation energy [ORNL-4129] 03 g6426 N68-12384 Nonstoichiometry in uranium oxide with respect to dependence on temperature and oxygen pressure [CEA-R-3218] 07 p0934 N68-16314 Potentiometric method of determing stoichiometric step formation constants of neodymium and thulium 2-hydroxyisobutyrate complexes at 25 deg C and at ionic strengths of 0.50 to 0.70 08 pl138 N68-17262 Irradiation experiments for measurements of depar-ture effects from stoichiometry on heat transfer in uranium dioxide fuel specimens (BNWL-536) 11 p1652 N68-21285 Methods for preparing stoichiometric cobaltous [COO-1616-7] 12 p1935 N68-22692 Thermodynamic properties for stoichiometric and fuel-rich mixtures of kerosene/air - kerosene and hydrogen fuels 13 p2140 N68-23633 Equilibrium composition for stoichiometric and fuel-rich mistures of kerosene/air - kerosene and hydrogen fuels 13 p2140 N68-23634 Thermodynamic properties for stoichiometric and fuel-rich mixtures of hydrogen/air - kerosene and hydrogen fuels 13 p2140 N68-23639 Equilibrium composition for stoichiometric and fuel-rich mixtures of hydrogen/air - kerosene and hydrogen 13 p2140 N68-23640 Nonstoichiometric effects on high temperature strength of iron, titan [REPT.-67-C-243] ium, and ura 13 p2016 N68-23702 Stoichiometry of disproportionation of tetravalent lutonium corrected for pentavalent state 14 p2208 N68-24351 [MLM-1482] Thermodynamics and melting point of plutonia and urania in high temperature research on hypostoichiometric mixed compositions [TiEAP-3393] 17 p2987 N68-29232 Electrical resistivity of arc melted, spin cast, hot ressed, and hypostoichiometric niobium carbides at high temperatures (USBM-RC-1327) 17 p2959 N68-29258 Heats of formation for anhydrous crystalline sodium orate by HCl acid solution calorimetry 18 p3024 N68-30192 Thermochemical and electrical properties, crystal structures, and stoichiometry of uranium oxides [JAERI-4045] 18 p3120 N68-30764 Thermodynamic, design of high pres sic, volumetric, and entropy data for pressure synthesis technique for new [AFCRL-68-0109] 19 p3223 N68-31143 netric black alumina 19 p3229 N68-31784 Reactivity of nomito (NRC-TT-1325) Interatomic distances of stoichiometric and non-stoichiometric magnesium aluminate spinels 20 p3509 N68-32448 Nonstoichiometry and crystal defects in solid state chemistry of lanthanides 20 p3423 N68-32836 Thermodynamic properties of oxygen in non-oichiometric uranium dioxide [AECL-3072] 22 p3976 N68-34875 STOKES FLOW Drag generation theory, design, and drop tests for high altitude Stokes flow decelerator [NASA-CR-91905] 06 p0766 N68-15425 STOKES LAW First and second Stokes components of laser beams during forced Raman scattering [NASA-TT-F-11816] 18 p3084 N68-30212 STOKES LAW [FLUID MECHANICS] Collision efficiency of falling cloud droplets from determination of forces between two spheres in viscous

additive Poisson noiss [NASA-TN-D-4623]

17 p2855 N68-29528

EX

ing

188

of

60

ty.

84

14

2

SUBJECT INDEX STOL AIRCRAFT STOMACH STONES (ROCKS). ROCKS STONY METEORITES NT CHONDRITES and Xe determined in [MPIH-1967/5/11] STOPPING STOPPING POWER (UCKL-17717) [GA-8556] [FTD-MT-66-74] [NYO-2962-6] STORABLE PROPELLANTS NT AIRCRAFT FUELS [NASA-TM-X-1559] ITR-0158/9210-02/-1]

Failure mechanisms for sp concepts for storable propell [NASA-TM-X-1463] Inorganic fluoride propellant seed germination and plant growth [AMRL-TR-66-187, V. 1] Chemical compositions, propellant permeability, and mechanical properties of storable propellant bladder materials based on polymeric chemical structure [NASA-CR-96156] 19 p3299 N68-31896 Hydrogen and methane o expansion of storable propei [NASA-TM-X-52434] Storability and perform liquid propellants for [NASA-CR-96743] Treatment of metallic surfaces for use with space storable propellants (NASA-CR-97062)

Drag, thermal, and pressure gradient forces on small sphere in gaseous field with weak gradients calculated with Stokesy Fourier equations [TR-20] 06 p0827 N68-15511 STORAGE Modifications and techniques for improvement of zinc dry cells for high temperature storage [ECOM-02534-F] 03 p0303 N68-12022 Spectral properties of Stokes type system [AROD-5863-15-M] 16 p2643 N68-27154 Algorithm for optimization of transportation and storage in petroleum industry

05 p0762 N68-14618 STOKES THEOREM (VECTOR CALCULUS) STORAGE BATTERIES

NT NICKEL CADMIUM BATTERIES

NT SILVER CADMIUM BATTERIES

NT SILVER ZINC BATTERIES Stokes operator, and photon correlation functions for statistical analysis of electromagnetic field 07 p1052 N68-16945 Activated storage life and discharge rate improve-ment of lithium/copper fluoride cell [ECOM-02304-F] 01 p0021 N68-10516 U SHORT TAKEOFF AIRCRAFT Effects of gastric freezing on development of peptic icers and natural reproduction of gastric mucosal cells Properties of silver zinc storage batteries, and ul-trasonic effects on nickel electrode performance [FTD-MT-65-485] 04 p0448 N68-13054 21 p3631 N68-33908 Improved properties of silver zinc storage batteries, and production of zinc and silver electrodes

04 p0448 N68-13055 Effects of ultrasonic oscillations on oxidized nickel electrode in alkaline storage battery 04 p0448 N68-13056 NT ACHONDRITES NT CARBONACEOUS METEORITES Fuel cell-battery hybrid power source for electric vehicular propulsion [AD-662234] 06 p0769 N68-15712 Ablation properties and lumi meteoroid materials determined in [NASA-TM-X-59062] 16 nosity of artificial ined in plasma jet tests 16 p2755 N68-27161 Storage cells, machine tools for storage module achining, resistors, capacitors, semiconductors for Contents and isotopic comp of Xe determined in stony m osition of He, Ne, Ar, Kr, nachining, resistors, capacitors, semiconductors for timbus D solar conversion power supply NASA-CR-93292] 08 pl 119 N68-17546 19 p3365 N68-31431 Increased discharge capacity of sintered silver elec-trodes used in storage batteries [NRL-6619] 08 p1125 N68-18054 Optimal stopping problem [P-3635] 20 p3514 N68-32656 Electrochemical p tetragonal lead mone acid cell (NRL-6613) cal preparation of lead dioxide from monoxide by anodic exidation in lead-Fortran 4 program for calculating range and energy dissipation rates of heavy ions in stopping materials [USNRDL-TR-67-122] 04 p0547 N68-13089 10 p1486 N68-20004 Multirweep cyclic voltar d characterization of no nograms for electroches queous systems for seco Quasi-elastic stopping cross sections for very low 12 p1932 N68-22615 (NASA-CR-72377) 10 p1486 N68-20012 FORTRAN codes for computing slowing down Injection moldable poly ners suitable for use in heat 19 p3332 N68-31590 sterilizable battery cases [NASA-CR-94353] 12 p1895 N68-22707 Retarding properties of nuclear photographic emul-Impact specifications and sterilizable battery capa-22 p3930 N68-35528 bilities for high energy electroch [NASA-CR-94404] emical cell 12 p1821 N68-22908 Pauli excitation of neon atoms, stopping power of naterials, energy transfer, ionization processes and ther studies related to radiation effects Acceptance tests of nickel cadmium secondary cells for spacecraft power supply [NASA-CR-94617] mism, cadmism-silver oxide, and sinc-aliver oxide bat-teries and electrochemical cells [ECOM-2949] 13 p1996 N68-24162 23 p4120 N68-36770 Measured mass stopping powers of graphite and plastics in relation to cavity ionization theory. 24 p4309 N68-37602 System and component design analyses of gelled, space-storable propellants for spacecraft engines [NASA-CR-91808] 05 p0730 N68-14346 NASA-CR-91800 j

Relative erosion resistance of ablative manual relative erosion of storable-propellant rocket engine 10 p1584 N68-19708 Preignition product formation in hypergolic nitrogen troxide-hydrazine system at simulated high altitude 11 p1776 N68-20732 Static and dynamic behavior of space storable, cryogenic liquid rocket propellants in low gravity and transient situations [NASA-CR-92082] 12 p1959 N68-21975 ific materials and design t rocket engines 12 p1961 N68-22272

nt axidizers effects on

13 p2140 N68-23685

on used to simulate

21 p3793 N68-33996

22 p3953 N68-35591

23 p4076 N68-36651

ce tests on high energy

Chronology of storage battery and primary cell developments, and state-of-the-art survey 17 p2810 N68-28715 17 p2810 N68-28715 Discharge depth effect on cycle life of positive lead-acid plates 17 p2810 N68-28716 High energy combinations using batteries with lithi-um anode and electrolyte of organic compound 17 p28[1 N68-28722 Design, fabrication, and testing of zinc air 24 V, 48 A-hr standard line battery system [ECOM-02082-F] 24 p4202 N68-38456 TORAGE RINGS [PARTICLE ACCELERATORS] Particle beam accumulation in storage rings by ra requency technique amisted by computer progr analysis (CERN-68-22) 20 p3538 N68-33106 STORAGE STABILITY Long term storage tests to determine spacecraft aterials compatibility with hydrazine and hydrazine (NASA-CR-90336) 02 p0260 N68-11296 ity of solutions of 10 to sate in hydrazine 04 p0362 N68-13031 Storability and thermal stal 30 percent ammonium perchi [NASA-CR-91438] Test evaluation of compulsion bladder for nitroge lant tank of lunar orbiter [NASA-CR-64535] posite Teffon-aluminum ex en tetroxide oxidizer propel Q5 p0732 N68-14858 ability predictions for gase rapid bomb aging technique line based on storage 06 p0896 N68-15548 d rapid bomi M-RJ-7084] Tabulated delay time characteristics and capacities her extended periods of storage for magnesium dry ells with mechanical seals 11 p1631 N68-21489

STORMS [METEOROLOGY] Storage stability of uranium dioxide powder, and [AAEC/TM-396] 12 p1905 N68-22456 Storage stability and protective coatings for magnesi-um water cells (ECOM-02135-51) 13 n1994 N68-23262 13 p1994 N68-23262 Micro fuel coker and radiotracer labeling used to determine thermal and storage stabilities of high tem-perature jet engine fuels [AFAPL-TR-68-32, PT. 1] 13 p2142 N68-23807 Storage stability of sounding balloon materials in in-flatable structures, and difficulties of accomplishing regular release rhythms [NASA-TT-F-11742] 15 p2496 N68-25845 Energy characteristics and storage stability of silver nc, silver cadmium, and nickel cadmium batteries 17 p2811 N68-28720 Intermittent stress-rela nitrile and neoprene rubb accelerated oven aging test [RAE-TR-68016, PT. 2] on measurements on empoweds - related with 21 p3708 N68-34260 STORAGE TANKS Fuel systems and storage tanks for methane fueled supersonic transport. [NASA-TM-X-52378] 04 p0438 N68-12827 Flight-prototype ame ed system using titas propellant storage s NASA-CR-912781 04 p0564 N68-13235 nical properties, notch nd worksbility of nickel for liquefied gas storage and transportation [MTB-010053] 05 p0675 N68-14446 d storage of liqu Cryogenic insulation for pr drogen in space flights 05 p0756 N68-14652 Cryogenic insulation acceraft using liquid per ctural designs for 05 p0750 N68-14654 for application of high 05 p0666 N68-14655 Parametric mass analysis and comparison of two actant cooling and storage units for lunar based plrogen oxygen regenerative fuel cell system VASA-TN-D-4386) 07 p0939 N68-16631 hydrogen oxygen regen (NASA-TN-D-4386) High performance insulation design, and manufac-turing plan of torus tank for Saturn 5 vehicle [NASA-CR-61557] 07 p1003 N64-17099 Japan Research Reactor-2 irradiated fuel sto-(JAERI-1153) 08 p1158 N68-18034 Small lightweight expendable helium gas cylinder for flating meteorological balloons 1-1919] 09 p1346 N68-18354 Self evacuating multilayer insulation panel systems for liquid hydrogen space tankage [NASA-CR-72363] 11 p1796 N68-21218 Compatibility of vinyl paints for lining heavy water steel storage tanks [BARC-322] 18 p3100 N68-30763 Optimal dimensioning of hydrosintically loaded tanks with plane walls [M-7389] 22 p3975 N68-36007 TORMS
NT CYCLONES
NT HURICANES
NT HORRICANES
NT NONOSPHERIC STORMS
NT MAGRETIC STORMS
NT NOISE STORMS
NT RAINSTORMS
NT SOLAR STORMS
NT SUDDEN IONOSPHERIC DISTURBANCES
NT THUNDERSTORMS
NT TORNADOES
NT TORNADOES
NT TYPHOONS MISSISSING STREET, Jet stresms, solar activity and storm relations, and oud cover 08 p1196 N68-17528 Statistical analysis of 291 synoptic storm situs over central and eastern Europe

24 p4279 N68-37844

and the second second

STORMS (METROROLOGY)

NT HURRICANES

NT RAINSTORMS

NT THUNDERSTORMS

NT TORNADOES

NT TROPICAL STORMS

NT TYPHOONS

Vec strang

ment

Bay

Rela

fect or

Stre

регны

TR-0

The

Basi [CEA

STRATI

Ele

by var

Lan

The

on sec

Cor

Hot

Stra

Equ

therm (RM-

Two

Va

DI-

Sol fluids

STRAT

STRATI

Guine

Cor

[NAS

viscos fusive

Stratif

STRATI

STRATI

STRATA

Major storms in western Colorado and eastern Utah udied in relation to upper air circulation and moisture [WBTM-HYDRO-7] 07 p1018 N68-16770

Synoptic meteorology, weather forecasting, cloud physics, storms, and atmospheric circulation circulation 08 p1197 N68-17599

Radar analysis of hall storms over Peking /China/ during 1964 [EMM-67-161] 09 p1367 N68-18404

Double theodolite pibal evaluation and movement, evelopment, and structure of hailstorms 13 p2099 N68-23740 Comparison of continuity of hail production and paths during lifetime of storm as defined by radar 13 p2099 N68-23742

Radar examination of development, movement and structure of hailstorms 13 p2099 N68-23743

Daily, monthly, and yearly climatological data from 99 stations in Finland in 1957

18 p3109 N68-30251

opic trajectories and flow distribution in cyclonic storm clo [AFCRL-67-0617] 19 m n cloud systems 19 p3304 N68-31608

Circulation model of convective overturning in cu-20 p3519 N68-32488

Atmospheric circulation and storm activity in Northern Hemisphere during summer 1967 [M-7390] Grapical data on frequency and areal distributions of tropical storm rainfall in coastal region on Gulf of Mex-

[WB-7] 23 p4091 N68-36096 rams for precipitation,

Weather modification progra storms, fog dissipation and hail su [NSF-68-21] uppression 23 p4095 N68-36582

STRAIGHT WINGS U RECTANGULAR WINGS

STRAIN AGING
U PRECIPITATION HARDENING

STRAIN DISTRIBUTION
U STRESS CONCENTRATION

STRAIN ENERGY METHODS

Dynamic strains on surface of opaque bodies using birefringent strips

15 p2570 N68-26334 Optimal solution of Saint Yenant flexure problem for lastic circular cylinders

15 p2570 N68-26423

Analysis of shell with variable section rib under radial loading using energy method 18 p3179 N68-30245

Strain energy methods and displacement of conical tells and reinforced shells by free vibration 18 p3180 N68-30323 [TR-9]

Elastic body stability criteria calculated from exter-nal loading and vector analysis of displacements 23 p4180 N68-36350

STRAIN FATIGUE U FATIGUE (MATERIALS)

STRAIN GAGE ACCELEROMETERS

Wind tunnel measurements of aerodynamic deriva-ves using sting dynamometers and microaccelerometers equipped with strain gages [NASA-TT-F-11510] 09 p1266 N68-18815

Calibrating procedures for verifying precision and constancy of acceleration counter fatigue meters [ARL/SM-NOTE-315] 16 p2665 N68-28266

Ministure type high sensitivity accelerometer using miconductor strain gages [NAL-TR-146] 17 p2887 N68-29298

STRAIN GAGES

Simulated service life of strain gage pressure transdu-(NASA-CR-91117) 03 ±0341 N68-11963 Calibration of wire strain gages for flight load measurements on aircraft structures
[EWR-SB-9-67] 03 p0301 N68-12302

Simultaneous operation of two telemetry systems for in-flight strain gage measurements on contrarotating helicopter blades [DLR-MITT.-67-12] 04 p0509 N68-13381

Radiation effects on strain gage pressure transducers [TID-24144] 08 p1176 N68-17392

Technical evalu aluation of two electrical resistance of on high temperature tests 8] 10 p1530 N68-19900 strain gages based of [NAA-SR-12118]

Strain gage and deflection measurement of elastic moduli of parallel filament glass fiber reinforced apoxy specimens toaded in pure bending [REPT.-903] 10 p1542 N68-20079 0 p1542 N68-20079

Wiring, calibrating, and operating instructions on in-rumentation for measuring resistance welding current and electrode force 12 p1876 N68-22673 [Y-1580]

Design and development of free field soil stress gages for static and dynamic measurements [TR-1-814] 12 p1880 N68-23023

Radiation method for improving temperature characteristics of silicon semiconductor strain gages [NASA-TM-X-60498] 14 p2260 N68-25414

Dynamic strains on surface of opaque bodies using birefringent strips

15 p2570 N68-26334 Strain gage data for explosive [AMRA-CR-66-05/13] 15 p2473 N68-26350

Diameter gage for true stress-strain measurements of tensile specimens at reduced temperatures [UDRI-TR-68-04] 18 p3079 N68-30819

Strain gage measurements of elastic properties in various sheet titanium alloys and methods for comput-ing polycrystalline elastic properties from single crystal

[AMMRC-TR-68-10] 19 p3294 N68-31779 Use of solid state or semiconductor strain gages to increase accuracy, range, and/or stiffness of wind tunnel balances and pressure transducers [BRL-MR-1928] 22 p3876 N68-35247

Development, construction, and functioning of pressure transducer with strain wires for high sensitivity, low pressure measurements [DLR-FB-68-53] 23 p4061 N68-36506 STRAIN HARDENING

Yield point and strain-hardening coefficient of high purity polycrystalline zirconium [HTRI-578-F27-22] 01 p0074 N68-10140

Effect of initial dislocation density on single slip [UCRL-17774] 05 p0676 N68-14588

Composition, test temperature, and temperature of deformation effects on tensile properties and strain hardening of metastable austenitic steels [UCRL-17805] 05 p0677 N68-14742

Finite deflections of rigid-plastic strain hardening an-ular plates subjected to initial linear impulsive (ARPA-E53) 06 p0921 N68-15563

Elastoplastic analysis of circular cylindrical inclusion in uniformly stressed infinite homogeneous matrices of composite materials for aerospace applications [NASA-TN-D-4350] 06 p0922 N68-15769 composite materials for aerospace a [NASA-TN-D-4350] 06

Successive approximation procedure for solving astic-plastic problem for torsion of solid priamatic bar ade of strain hardening material NASA-TN-D-43911 07 p1092 N68-17045 [NASA-TN-D-4391]

Thermal conditioning and strain effects on microstructure and mechanical properties of aluminum oxide [AVSSD-0441-67-RR] 08 p1192 N68-17932 os p1192 N68-17932

Yield condition providing for second order strain ef-icts in perfect plastic material, and loading function fects in perfect plastic mate for strain hardening material 09 p1440 N68-18464 [TR-48]

Internal friction in nickel single crystals at low tem-TR-9] 11 p1775 N68-21696

Analytical solution for expisk of nonuniform thickness tion of pinhole in rigid 13 p2159 N68-23411 [TR-17]

Effects of deformation processes during recrystalligation on metal pressure resis 13 p2075 N68-23839 Strain hardening of copper single crystals related to stress-strain and slip distribution

16 p2675 N68-27238

Strain and precipitation hardening effects on frac-re characteristics of eutectoid steel wire 16 p2680 N68-27657 Stress-strain diagrams for strain hardening in single

(ARL/MET-6) 16 p2746 N68-28187 Strain tempering effects on toughness of martensitic 19 p3289 N68-30875

d by oxygen in molybdenum 22 p3892 N68-35869 [FTD-HT-67-206]

Thermomechanical processes for hardening and production of steels - induction heating, heat treatment, strain hardening, roll forming, and production engineering steel products [JPRS-46592] 24 p4268 N68-38089

sechanical processes for hardening 24 p4268 N68-38090 Thermomechanical strain rate errest and mechanical properties of forged steels 24 p4269 N68-38095

STRAIN RATE

Elastodynamic approach to measuring stress-strain elationship of uniaxially stressed wire, and elas-odynamic behavior of electromagnetically stressed [NASA-CR-90038] 01 p0068 N68-10279

Propagation of elastic and plastic strain pulses in ounded solids [AD-659422] 01 p0145 N68-10831

Thermal expan sion and strain rate effects on laminated ablative materials [TR-0158/3240-30/-2]

03 p0355 N68-12014

Aliphatic ionene synthesis, strain rate in deformation of elastomers, polymerization and structure of nitroso rubber, crystallinity in polybutadienes, and ther-moplastic rubber binders

03 p0312 N68-12316 Computer program for predicting strains in blanks

[AMRA-CR-66-05/11] 03 p0348 N68-12603 Burst test tensile strengths, and pressure strain characteristics of cryogenic boron filament wound con-[NASA-CR-72330]

05 p0747 N68-14371 Shock hardening of metals, blank deformation, duc-tility of metals, strain rates, and explosive forming [CR-65-77] 05 p0668 N68-14861

Expanding ring used for determining tensile stress strain relationships as functions of strain rate 05 p0669 N68-14865

nic strain rate effects on room temperature le ductility of metals during forming processes 05 p0669 N68-14866

ional prestrain effects on embrittlement of low in 37 notched steel specimens tested to failure 64598] 09 p1439 N68-18309 Torsion

ice cap strain rate effects on engineering structures CRREL-TR-2021 11 p1792 N68-20721

Calculating yield stress of glassy polymer as function nd strain rate [REPT.-67-C-353] 11 p1719 N68-21424

Aluminum crystal dislocation drag coefficient mea-trement by strain rate method

15 p2483 N68-26163 Fatigue behavior of stainless steel under cyclic plastic strain resulting from differential expansion of cladding and uranium dioxide reactor fuel [TRG-[353/8/] 17 p2915 N68-28944

Bending creep tests to measure continuous deflec-ion and local strain measurements on 8-foot box seams under constant loading 21 0.3784 NAS 3.3705

21 p3784 N68-33795

Generalized strain measure concept applied to linearization of basic stress-strain curves of compres-sive, shear, and tensile nature 21 p3786 N68-33810

Telecentric lens system combined with Moire technique for optical strain measurements 21 p3786 N68-33811

Temperature and strain-rate dependence of defor-mation characteristics of austenitic steels 21 p3702 N68-33826

Strain rate and high temperature effects on iron and copper stress-strain diagrams 22 p3887 N68-34872

Blank deformation mechanics, high velocity metal deformation, strain rate effects, properties of aluminum alloy and stainless steels exploaively formed, and electrohydraulic forming [AMRA-CR-66-05/14] 24 p4262 N68-38082

Thermomechanical strain rate effect on structure and mechanical properties of forged steels 24 p4269 N68-38095

STRAIN SOFTENING U PLASTIC DEFORMATION

STRANGENESS

Kaon systems, violation of conservation/parity, pion decays, strangeness oscillation, lifetimes, and mass dif-ferences 06 p0885 N68-15803

Search for strangeness plus 2 meson 14 p2312 N68-25074

Resonance, strangeness, and spin in rescuentive kaon with neutrons at high energy 16 p2721 N68-27237

19 p3267 N68-30918

Infrared radiative transfer in upper stratosphere and

Geophysical investigations of structure of earth crust in Antarctic regions based on gravimetry. [NIC-TRANS-2541] 14 p2244 N68-24382 Vector currents for S matrix elements applied to strangeness of hyperons, S and P wave decay, and baryon-meson and meson-meson scattering n scattering 18 p3130 N68-29944 Lunar craters morphology and lunar surface strytig-Calculated parity violating nucleon-nucleon potential due to pion exchange NASA-CR-612191 14 p2348 N68-25329 21 p3737 N68-34015 of Jurassic deposits in Baryon resonances resulting from pion bombard-(RTS-4562) 20 p3469 N68-32504 ment of prote [ITEF-584] 21 p3746 N68-34744 Stratigraphy and structure of Cleomedes quadrangle NT SUBSTRATES 22 p3866 N68-34862 Bayesian stratified two phase sa [MRC-TSR-747] STRATOCUMULUS CLOUDS mpling 02 p0229 N68-11495 Stored water in stratus and stratocumulus clouds ver Ukraine during cold half of year Relative efficiency index for mining rare and noble netals from thin ore veins year 13 p2100 N68-23898 13 p2175 N68-23816 STRATOFORTRESS AIRCRAFT
U B- 52 AIRCRAFT Electric dipole model for analysis of earth layer ef-ect on electromagnetic ground wave propagation wave propagation 14 p2250 N68-25193 STRATOPAUSE Horizon radiance measurement temperature variation at stra ts for estimating diur-Stress wave propagation through porous and im-08 p1174 N68-18104 22 p3969 N68-34962 logy of Berlin stratosph Aerol [QR-3] re /1966/ 12 p1901 N68-22977 STRATEGY Sequential sampling problems in trial, and error Diurnal tide near stratopause ille Range determined from over White Sands Mis-meteorological rocket [TR-03105-49-T] 09 p1358 N68-18397 soundings [AD-667909] Theory of class of finite stochastic games [CT-19, PT. 1] 10 p1547 N68-20229 24 p4280 N68-37867 STRATOSCOPE TELESCOPES Basis for theory [CEA-R-3475/1/] of two player quantitative games 18 p3101 N68-29653 try for testing of parabo-s for large high resolution on by balloon at high al-Scatter plate interferometridal and ellipsoidal mirrors hotographic telescope flowstudes - Stratoscope 2 STRATIFICATION NT ATMOSPHERIC STRATIFICATION 07 p1001 N68-17205 Electromagnetic scattering from cylindrically and operically stratified bodies Infrared opacity of hot stratoscope telescope observat ater vapor based on ns of cool stars 08 p1241 N68-18086 09 p1380 N68-18282 Thermal stratification in liquid nitrogen investigated Preparations, launch, and test flight of simplified ver-on of balloon-borne solar telescope for observations 18 p3184 N68-29784 Vertical jet diffusion in nonlinear density stratified from stratosphere (BMWF-FB-W-67-381 11 p1702 N68-21770 21 p3680 N68-33976 inar, transition, and turbulent flows of stably ed fluids over barriers se soundings over North Simultaneous dust as d Central America stratified [TM-55] 22 p3863 N68-35735 [NASA-CR-90427] 02 p0206 N68-11414 STRATIFIED FLOW Multiple rocket sou scale features of horiz and mesosphere [AFCRL-67-0263] Theoretical and experimental investigations of mo-tions set up by cylinder rotating in stratified liquid [TR-24] 10 p1518 N68-20469 experiment to study sma wind fields in stratospher 03 p0363 N68-12063 Model studies compared for effect of interstrata flow Synoptic measurement troposphere and lower st [IERTM-NHRL-79] ind structure in upper ere of hurricanes 07 p1019 N68-16835 12 p1858 N68-22079 Continuous stratification effects on stability of viscous flow between parallel inclined plates at nondif-Mesoscale observe wind fields in lower st [APCRL-67-0601] crtime minin 08 pl197 N68-17766 12 p1981 N68-22086 Stratospheric and mesospheric temperature profiles om satellite radiance measurements at limb of earth 08 p1174 N68-18103 Hot-wire measurements of turbulence in thermally stratified flow ICEM67-68SPSA-EJP111 13 p2054 N68-23917 cket sounding data on reversal of stratospheric lation over Chamical, Argentina during spring Stratified flow in closed conduits
14 p2241 N68-24936 [CNIE-PE-12] 09 p1370 N68-19380 Kelvin-Helmholtz and inflection point instabilities in ratified flows near solid boundary Stratospheric humidity se ng with alpha radiati 19 p3262 N68-31010 hygrometer [AFCRL-67-0604] 16 p1530 N68-19887 Equations of motion and boundary conditions for ermal instability of fluid layers heated from below IM-416] 19 p3263 N68-31236 Ultraviolet radiation effects on viability of microorganisms in ionosphere and stratosphere
[BMWF-FB-W-68-09] 13 p2002 N68-24091 [RM-416] Two dimensional flow induced by body moving at constant speed through linearly stratified fluid 21 p3677 N68-33622 Nike Apache pitot tube rocket sounding measuring of Southern Hemisphere stratosphere and mesosphere along west coast of South America [NASA-TN-D-4264] | 14 p2286 N68-25617 Vortex street formation behind cylindrical bodies aced in stratified stable flowing fluids D1-82-0736] 22 p3862 N68-35521 Ozone detection by chemiluminescent principle using sounding rockets in stratosphere [ECOM-5169] 15 p2462 N68-26635 placed in strati ID1-82-07361 Characteristics of turbulent buoyant jets in stratified or flowing ambient fluids 15 p2462 N68-26635 Transport and diffusion of stratospheric radioactivity ased on synoptic hemispheric analysis of potential 23 p4046 N68-36307 Solitary wave motion in incompressible stratified fluids, and stability of periodic internal waves 23 p4048 N68-36401 vorticity (NYO-3317-3) 15 p2497 N68-26704 Data reduction tech data above 30 kilomete (ECOM-5168) e for meteorological wind STRATIFIED LAYERS 16 p2701 N68-27328 STRATIGRAPHY Air samplers, contam lection of microorganis tion of stratosphere [NASA-CR-1101] Geology of Bougainville and Baka Islands, New

02 p0206 N68-11446

Solar activity effects on there, and stratosphere

New ozone radi tion of air moveme (REPT.-28/1967)

geological features of dorskiye islands 06 p0841 N68-15812

n profiling, magnetic and

10 pl521 N68-19902

Comprehensive survey of Kamchatka, Kuril, and Koman [NASA-TT-F-11529]

Bathymetry and subi geophysical survey data [SP-96-HH-2]

Stratospheric wind observatio [ECOM-2960] ns in tropics 19 p3304 N68-31470 Energy budget of stratosphere analyzed by effects of eddy tramport [MIT-2241-38] 19 p3272 N68-31717 Stratospheric circulati [ECOM-5189] rise to solar response 19 p3273 N68-31276 Pacific Ocean stratosphe winter thermal regime over as [M-7367] ic anticylone effect on rtheastern Soviet Union 20 p3519 N68-32437 troposphere and I east Asia (EMM-66-142) 20 p3524 N68-33013 20 p3524 N68-33036 ring turbulences encoun-40,000 ft 20 p3473 N68-33416 Stratospheric temperature patterns for period May 15 to July 29, 1966, derived from Nimbus 2 catellite Dynamic characteristics of 1958 stratospheric heat-g in Northern Hemisphere 22 p3902 N68-35000 Interlevel correlation coe odvnamic variations in tropo coefficients between ther-troposphere and lower strato-(RR-TR-67-14) 22 p3903 N68-35249 dicity of statesp ric occurrences in Northern V570 III 22 p3869 N68-35287 effects on stratospheric femisphere during cold 23 p4093 N68-36425 phenomenon of January 1963 [NASA-TM-X-63376] 24 p4250 N68-37824 dysis of stratosp Charts, data, and statistical a circulations for period 1955-196 24 p4281 N68-38118 STRATOSPHERE RADIATION Radiative heat budget of to oposphere and lower [A2] 09 p1370 N68-19460 Global stratospheric infra sured by Nimbus 2 satellite [NASA-TM-X-60413] ution patterns mes-21 p3716 N68-34244 Microwave absorption by stratuspheric ozone, and stection of 37,836 and 30,056 gc/sec ozone lines 23 p4052 N68-36048 STRATOTANKER AIRCRAFT U C-135 AIRCRAFT STRATUS CLOUDS Airborne equipment for ratus clouds and mists during winter 01 p0047 N68-10856 stratus clouds a [JPRS-43400] Mathematical models of stratus cloud evolution in rface boundary layer of earth atmosphere and dis-acement of stratus cloud bases during brief time in-[T-R-557] 13 n2100 N68-23908 Spring and a Base in Korea (AD-667532) s studies at Kunson Air 13 p2102 N68-24037 Horizontal dissipation stratus cloud in turbulent a [T-R-556] of spatially homogeneous 13 p2102 N68-24157 Dry ice seeding norm ns for scattering supercooled 18 p3109 N68-30171 d recognition on photo-SSA antellites 23 p4093 N62-36424 Fog and low stratus cloud sohs taken by Cosmos and ES STREAM FUNCTIONS (FLUIDS) ream function for sond nic surface currents de-electrokinetograph data (530175) n, and sterilization in col-microbiological explora-01 p0060 N68-10746 [AD-659175] 16 p2601 N68-28247 powered generator for y streams of water 02 p0162 N68-11544 Prototype lightweight stream operation in shallow, low veloci [AD-660009] magnetosphere, tropo-17 p2880 N68-29396 tratosphere 18 p3066 N68-29740 02 =0206 N68-11636

Elan

(NAS/

Stre

Street

Stre

(NAS/

Dire

solids 1

tion (TR-1:

Non

AM-6

Zircale INSJ-T

imposhells [NASA

Com probles materis

FTD-I

Desig Apollo [NASA

Effect on elas

[WAP

Stres

(DLR-

INASA

[VP-X

strain d

wood [VP-X-

[VP-X

Perp

Stres

of whe

Dyna

NASA

Plane fened is subject

INASA

matrix (

Finite sis of sh [AD-66

Three

REPT

05 p0751 N68-14901

Semi

Resid

Basic

Com

Grain

Shea

CYlind

Perturbation stream functions and wave drags ob-tained for dipoles in channel flow with free surfaces [D1-82-0664] 04 p0435 N68-13376 Schlieren photography of gas stream formation behind shock waves discharged from shock tube nozzles 06 p0831 N68-16037 Restricted variational principle method for mixing of TR-0158/3240-20/-2] 08 p1162 N68-17903 Second order stream function for determining lift, and moment coefficients of airfuil in nonuniform shear ITR-117-ME-F1 09 pl265 N68-18338 Turbulent mixing of fluid streams in confined spaces, and effects of mixing on structure and parameters of 09 p1327 N68-18677 on technique for calculating pressure coeffi-wedges in symmetric, hypersonic, ideal gas cients of wedges in symm 09 pl327 N68-18683 Shock tunnel capable of generating short duration large scale, high velocity, high density air flow with near equilibrium chemical simulation of free stream flight conditions [R64SD1] 09 p1323 N68-18975 09 p1323 N68-18975 Computerized design of axial flow turbines using stream filament approach to design specifications [NASA-CR-72383] 10 p1460 N68-19929 Asymptotic expansions for st ions for stream functions of in-verticity flow over infinite wedge 19 p3261 N68-30980 Slow flow of nonNewtonian fluid past droplet studied double perturbation technique and matched asymp-tic expansions 22 p3855 N68-35002 Flow structure mes arements in wakes of poorly [NASA-TT-F-11690] 15 p2379 N68-25767 Mathematical model for calculating shape of hypersonic minimum drug body with elliptical cross section [NASA-TT-F-11833] 23 p3984 N68-36322 logical parameters, and ef-in turbulent flow 06 p0826 N68-15458 Analogy between me et of streamline curve fect of streamline curvature or [NPL-AERO-1231] Streamline curvature approach to duct flow NAL-TR-140] 08 p1107 N68-18033 Sea and coastal wind reports for air streamline pat-rn predictions over California [P-3750] 11 p1734 N68-20769 Measuring aerodynamic drag on star and conical bodies for optimum shape in hypersonic flow [NASA-TT-F-11834] 18 p2997 N68-30204 Potential flow of boundary layer for swept back [F-74] 22 p3854 N68-34853

U LAMINAR FLOW STREAMLINED BODIES U GAS STREAMS U RIVERS STRENGTH OF MATERIALS
U MECHANICAL PROPERTIES STREPTOCOCCUS Interchange of group C beta hemolytic streptococcimong dogs and monkeys confined in dynamic flow at mospheric systems [NASA-CR-92662] 07 p0946 N68-16719 STREPTOMVCETES Systematic description and key to Streptomycetes olants from Chile-Atacama Desert, Hawaii, and Oregon soils [NASA-CR-94759] 14 p2196 N68-24772 Streptomycetes iso Arizona desert soils [NASA-CR-96470] ts from Chile, Mexico, and 20 p3407 N68-33066 STRESS [PHYSIOLOGY]
NT ACCELERATION STRESSES [PHYSIOLO-GY | NT CENTRIFUGING STRESS notated bibliography of alti SAM-TR-67-95, V. 1] 04 p0451 N68-12952

Annotated bibliography containing literature on al-tude acclimatization as related to acute hypoxia,

d bypent

04 p0452 N68-13004 Techniques and equipment erformance under altered er ent for measuring hum in visual perception [NASA-CR-91444] 04 p0461 N68-13149 Macaca nemestrina pigtail monkey used for determining space flight effects on physiological functions - Biosatellite project [NASA-TM-X-60822] 05 p0609 N68-14106 Effects of helicopter and VTOL aircraft downwash (USAARU-68-31 06 p0772 N68-15180 Spectral reflectance and thermal emission of conifer and hardwood leaves under moisture stress [NASA-CR-93175] 08 p1126 N68-17247 08 p1126 N68-17247 Autohypnotic techniques for responses to cold and electric sh [AMRL-TR-67-142] es for modification of stress AMRL-TR--Experimental measurements and biodynamic responses of humo sure and force changes 10 p1464 N68-20089 ts and theoretical models human body to environ-[AMRL-TR-66-251] 10 p1472 N68-20564 Effects of work-rest cycles and sleep deprivation on crew performance during orbit [SAM-TR-67-99] 11 p1639 N68-20743 Thyroid status of dogs continuously exposed to one half atmosphere [SAM-TR-67-106] 13 p1997 N68-23057 Prediction of rhythmic da performance, physical fitne ic day-night variations in human fitness, and stress resistance 14 p2197 N68-24863 ordings of stress effects as to noise tolerance 17 p2819 N68-28513 Heart rate of change parameters and performance of ognitive, perceptual, and psychomotor tasks under [NASA-CR-92203] 18 p3014 N68-30150 man performance High intensity noise effects in visual discriminatio [AMRL-TR-67-119] , and dexterity 19 p3215 N68-31190 Comparative study of subjective and physiological daptation based on measurements of galvanic skin e to electric shock and a ditory noine 19 p3208 N68-31335 [TR-25] Human performance during physical and symbolic stressors on perceptive mech (AFOSR-68-1516) 22 p3811 N68-35212 Human operator perform stress for cybernetic simulatio [FTD-HT-67-337] nce adaptation under 23 p4002 N68-36484 performance of discrete Effects of stress on human ad continuous avoidance task 23 p4003 N68-36700 Auditory fatigue in humans following tone-burst trains at 2.2 kc [SMRL-529] 24 p4207 N68-38073 STRESS [PSYCHOLOGY] oced stress effects on speech 04 p0460 N68-12810 (BBN-1542) Reactions of cardiovascular and respiratory systems in men during negative emotional stress 05 p0611 N68-14672 Portable instrument for mean loss of flying personnel under en [AM-67-17] oring evaporative water actional stress 05 p0615 N68-14752 Physiological and psychological measurements of lot workload 08 p1126 N68-17466 man reactions to stress under specific situation and conditions [JPRS-45562] 15 p2400 N68-26255 Methods for determining degree of stress in humar operator performance 15 p2400 N68-26256 Effects of audience stress and communicator credibility on opinion change
[TR-4] 15 p2399 N68-26914 15 p2399 N68-26914 Fear attitude change studies during arousing commu-nication with human subjects of differing birth order [TR-6] 15 p2399 N68-26921 Heart rate of change parameters and performance of cognitive, perceptual, and psychomotor tasks under

[NASA-CR-92203]

[NASA-CR-1122]

18 p3014 N68-30150

22 p3816 N68-35102

Effect of increasing failure on response rate and its components in complex decision making [TR-12] 19 p3217 N66-31881

Process development of system for digital computer rocessing of psychophysiological data to obtain high

Human performance during physical and symbolic stressors on perceptive mechanisms
[AFOSR-68-1516] 22 p3811 N68-35212 STRESS ANALYSIS INT PHOTOGRAPHIC MEASUREMENT NT SCHWARTZ METHOD NT X RAY STRESS ANALYSIS Dislocation mobility and multip aging in work hardening of iron [UUIP-328] 01 p0073 N68-10083 Cleavage in intrinsic dislocation dipoles in cubic metals [UUIP-529] 01 p0073 N68-10085 Fluctuating turbulent stresses in noise-producing re-on of low speed jet 01 p0050 N68-10132 of semitoroidal and ogival tanks [3] 01 p0141 N68-10238 [NASA-CR-61183] Orthotropic stress characteristics in anisotropic creep of disks 02 p0276 N68-11573 Creep properties in complex stressed state at variable temperatures 02 p0278 N68-11676 Theory of heredity applied to creep and stress relaxa-tion under conditions of sudden specimen loading 02 p0278 N68-11677 Shapes and stresses calculated for ascending bal-[NCAR-TN-25] 03 a0419 N68-11950 Thermal and stress performance of pebble bed reac-IAAEC/TM-3441 03 p0368 N68-11984 fluckling of circular cylindrical shells with multiple orthotropic layers and eccentric stiffners [TR-0158/S3820-10/-1] 03 p0420 N68-12095 Derivation of basic plasticity equations for multiaxial ORNL-4138] 03 p0420 N68-12203 Effect of stiffening shallow shells of revolution subjected to symmetrical loading

[FTD-HT-67-27] 03 p0421 N68-12233 Notched-bar creep-rupture test and stress analysis studies of metal tubes [AROD-4656-2-E] 03 p0422 N68-12390 03 p0422 N68-12390 Critical stress curves of com longitudinally stiffened cylinders [NASA-CR-91221] es of compressive buckling for 03 p0423 N68-12503 Stress-strain curves for plastic deformation analysis of compressed polycrystalline iron silicon alloys [IS-T-128] 03 p0354 N68-12723 Bonding of large area silicon crystals to heat sinks, and determination of stresses between bonded materi-[NASA-CR-91446] 04 p0514 N68-12900 Transformations of two-dim ponents applied to derive r changes to polarized light in ini dimensional vibration com-ve methods for expressing in inhomogeneous stress field INSE-G-20259/21 04 p0586 N68-13053 Models of fuel bearing nuclear reactor core matrices for analysis of individual principal and circumferential stresses based on isocline isochromatic spectra of NASA-TT-F-11371] 04 p0587 N68-13080 Work-hardening model for effect of grain size on flow stress of niobium strained by rolling [TR-0158/3250-20/-4] 04 p0521 N68-13126 on in stiffened circular cylindrical ell with circular cutout under hydrostatic pressure R-7-1] 04 p0588 N68-13314 [TR-7-1] Stress distribution near elliptical apertures in moderately thick stressed plates 04 p0590 N68-13774 Methods for physical interpretation of time to rup-ture tests on reactor application metals [EURAEC-1908] 04 p0523 N68-13867 Analytical method for determining reactivity changes of fast reactor core due to elastic plastic stress and creep 05 p0693 N68-14353 Equations derived for radial and azimuthal stresses in finitely long solenoids immersed in externally applied trailed fields parallel fields [EP-RR-12] 05 p0748 N68-14507 Revised formulas for stress analysis of forces during reasing of pipes in dies with built-in core pins FTD-HT-66-728] 05 p0670 N68-14900 pressing of pipes in dies with be [FTD-HT-66-728] Stress analysis for junction with radially attached nozzles [TID-24103] n region of spherical shells

decompression, hypercaps (SAM-TR-67-95, V. 2)

Elastoplastic analysis of circular cylindrical inclusion in uniformly streased infinite homogeneous matrices of composite materials for aerospace applications (NASA-TN-D-4350) 06 p0922 N68-15769 Stress analysis of cylindrical and conical elements of offset wall tank using thin shell membrane and bending 10 p1608 N68-20236 Stress analysis for vi cylinder with star shape [FTD-HT-23-591-67] c nonuniformly heated Structural design and perfo and parachute for expersonic nance tests on disk gap-[NASA-CR-66587] anetary entry 10 p1459 N68-20316 06 ±0923 N68-15946 ding, and stress analyses Stresses in elastic media a Material strength, she 06 p0923 N68-15983 for planetary entry parachute des [NASA-CR-66590] 10 p1459 N68-20320 Stress analysis and fracture mechanisms of advanced High temperature creep characteristics of alumin 1.79 atomic percent magnesium solid solution un constant stress and temperature, and with redufiber reinforced composite [NASA-CR-92721] int stress and tempe treatment 07 p1011 N68-16111 Direct numerical determination of stresses in elastic olids using Saint Venants torsion problem for illustra-11 p1710 N68-20580 (TR-15) Characterization and stress analyses of composite and viscoelastic materials 07 p1089 N68-16408 Nonlinear theory of elastic-plastic continua in presence of simple force and stress dipoles [AM-67-12] 07 p1090 N68-16458 11 p1717 N68-20639 Eigenfunction expa-sional stress and dia form for infinite solid tinuity or crack [NASA-CR-94085] on technique for three dimer ement expressions in serie teakened by plane of discorts in oxide films of zirconium and Stress mes realoy 2 /trademark/ during anodic oxidation iSJ-TR-94] 07 p0957 N68-16601 11 p1797 N68-21322 Impact stresses and deformations in spherical elastic Simple force and stress dipole theory in terms of tor-sion of circular cylinders of elastic materials [AM-67-15] 11 p1798 N68-21394 INASA-CR-929761 07 p1090 N68-16670 Computer calculations for structural engineering problems - performance prediction, construction materials, mechanical properties, and structural mem-Stresses and buckling in thin domes under internal AMMRC-MS-68-01] 11 p1798 N68-21435 Motion of aemi-infinite cracks with constant velocity ong rectilinear boundary of two different homogene-nt isotropic elastic half spaces under plane deforma-(FTD-MT-66-241 07 p1092 N68-17133 ending plate equat al elasticity problem s for solution of two dimen-07 p1093 N68-17135 [FTD-HT-23-596-67] 11 p1798 N68-21501 Design and stress analysis of stowable couch for Stress and deform analysis of failure Apollo spacecraft [NASA-CR-65940] mechanisms in polyethy [NYU-AA-67-105] 07 p0952 N68-17173 11 p1799 N68-21503 Effect of temperature, stress, and material variables on elastic, plastic, creep, hot pressing, and fracture strength of unirradiated oxide nuclear fuels [WAPD-TM-587] 08 pl201 N68-17241 Approximate solutions in linear visco r viscoelasticity 12 p1976 N68-22218 al verification of limit analysis for short Stress-stability analysis for eccentrically stiffened orthotropic circular cylinders with axisymmetric loads, supports, and deformations REPT.41 12 p1979 N68-22806 Texture strengthening and fracture toughness of tanium alloy sheet at room and cryogenic tempera-[DLR-FB-67-82] 08 p1246 N68-17489 Residual static strength and slow crack growth behavior of duplex annealed Ti-8Al-1Mo-1V sheet [NASA-TN-D-4358] 08 p1250 N68-17588 [NASA-TN-D-4444] 12 p1891 N68-22884 CDC 6600 digital computer program for solution of onlinear problems of buckling of plates on elastic oundation and subjected to compressive forces 13 p2160 N68-23494 Basic equations, and computer program for stress nalyses on isotropic, and orthotropic wood alices VP-X-8] 08 p1251 N68-17689 [VP-X-8] Approximate method for determining stress concention around curvilinear holes in shells.

NAL-TT-2] 13 p2161 N68-23539 Computer program for multidirectional structural rain data evaluation (VP-X-4) 08 p1179 N68-17690 Critical analysis of calculation methods for residual rength of materials and structures in presence of Grain angle effect on fractional stress relaxation in fatigue cracks
[AGARD-ADVISORY-11] [VP-X-141 08 p1190 N68-17691 13 p2161 N68-23762 Derivation of Vlasov sh Shear deflection equation for plywood box beams dlow shell equations and 08 p1252 N68-17693 (VP-X-31) 13 p2163 N68-24122 Perpendicular stress effect on initial crack develop-Application of extended Kantorovich method to stress analysis of clamped rectangular plate subjected to uniform lateral load (NYU-AA-67-107) 13 p2164 N68-24296 ment, and propagation 08 p1252 N68-17713 Large deflection behavior of flat plates [ARA-88] 08 p1254 N68-18077 Modal solution for coupled s stresses in cylindrical elastic she [SC-TM-67-3025] d membrane and bending Stresses and stress intensity hyperbolic and parabolic cracks ty factors for embedded 14 p2353 N68-24346 Pressure test analysis for large multiple cell tank with sectioned skin [NASA-CR-61221] 14 p2359 N68-25222 09 p1440 N68-18522 ent in holding sections ctions of compressor Photoelastic methods of stress analysis in infrared 09 p1442 N68-18685 14 p2278 N68-25237 Dynamic structure and stress analysis of Scout launch vehicle with 44 inch ALGOL engine [NASA-CR-66545] 09 p1414 N68-18971 ds for rotational thin walled ns of finite element procedure 15 p2566 N68-25746 Stress analysis metho shells and domes by mean [NASA-CR-87648] Plane stress analysis using Fourier series of edge stif-fened isotropic or orthotropic elastic rectangular plate subjected to prescribed temperature distribution and boundary loads Soil engineering problems, program audied for applicatio [NASA-CR-95060] techniques, and research on in lunar exploration 15 p2557 N68-25836 [NASA-CR-978]

09 p1445 N68-19311

10 p1601 N68-19568

10 p1534 N68-20199

n Karman rado

Computer program for det timized dimensions of control sys [FSN-AD5-05-68.2]

determining weight op-il system joints 15 p2571 N68-26499

ics of Von

onocoque structures solved numerically by

ement method applied to static stress analy-w shells and elastic edge stiffening [0] p1605 N68-19894

mensional photoelastic determination of slit cylinder case bonded propellants 10 p1607 N68-20148

Subsurface residual stress on steel inner races from

ball bearings during rolling contact (NASA-TN-D-4456) 10

AD-6648221

Flow strets analysis using tensile tests on titanum, zir-conium, and Zircaloy 2 [ORO-3262-5] 15 p2485 N68-26613 del for analysis of frictional soil [R68-4] 15 p2463 N68-26806 matching method for Airy stress closely spaced [TID-24309] 15 p2572 N68-26871 Thermal-etress analysis of pyroceram radomes [APL-TG-980] 16 p2775 N68-27000 on strain response of simply nd acoustic loading 16 p2779 N68-27613 Experiments and the supported beams to poi [NASA-TM-X-59967] Metal plate thick ture on brittle fracts [EURABC-1987] ed stress, and tempera-ics in Robertson test 16 p2789 N68-28235 ts in use of lacing wire as apressor blades 16 p2790 N68-28238 vibration damper on to [NASA-TM-X-1603] Linear viscoelastic ysis of solid propella [NASA-CR-95372] lem in stress analgines 16 p2751 N68-28261 16 p2798 N68-28326 ns in thin walled axirymats by axial edge loading and a stress analysis of toroidal shells 17 p2980 N68-2869 18 p3173 N68-29607 Axisymmetric elasticity solutions for stress and di accment with axial and edge loading of apheriveided steel tube joints Inplane stress as der axial loading 19 p3374 N68-30990 Optimal diameter ratio calc heated tubes with internal press [EE-TRANS-1711] re 20 p3600 N68-32501 ting reliability and confidence Procedures for est intervals from stress [MRC-TSR-814] 20 p3601 N68-32635 Material diameter and thickness effects on stress quation prediction of fracture behavior equation prediction [AHSB/S/-R-149] 20 p3607 N68-33599 Conference papers on recent advances in stress anal-ysis and measurement techniques 21 p3783 N68-33786 Error propagation and tolerance analysis in en-gineering design and stress analysis problems 21 p3783 N68-33788 Computer program for stress analysis of cylindrical vessels with flat ends 21 p3783 N68-33791 nt technique for compu-ft structures 21 p3783 N68-33792 Direct stiffness finite elem rized stress analysis of aircs Stress analysis of axisymmetric shells using plane ame programs 21 p3784 N68-33798 analysis for solvi linear elastic stress properti 21 p3785 N68-33801 d for solving finite difsis problems 21 p3785 N68-33802 tic method for stress analysis of two a signal hodies subjected to clastic deform 21 p3785 N68-33805 Upper and lower bounds from nonlinear pro-ramming for limit analysis of rotationally symmetric Deformation and stre three dimensional elastic [NASA-TM-X-52440] culation programs for solids with slits 21 p3788 N68-3404 15 p2569 N68-26223 High temperature, high speed testing machines for ow stress measurement of metals and alloys. 15 p2483 N68-26238 culations for viscos Relaxation spectra naterials and Proney of NASA-CR-882521 21 p3708 N68-34247 ere effect, stress analysis, and aerodynam-15 p2570 N68-26353

22 p3968 N68-34857

22 p3973 N68-35558

Calculated stress load factors for fog ice deposits on

tive accelerated testing

23 p4031 N68-36621

spectrometry 23 p4183 N68-36958

24 p4346 N68-37522

24 p4349 N68-37911

24 p4235 N68-37944

24 p4351 N68-38263

02 p0274 N68-11257

02 p0279 N68-11776

0 alloy [NA and in ploys [NA St H)

(NS)

D6-

V

(D6-

Str wedj [D6-

St

St. PH i

(KA

Fr

Stain (EU

Str in his (EU

M

OE Protection stress [NA

Cr

Str nicke [CO

Fe

Str

St

(DP-

[NA

Str mosts sietze [QR-

eff state maci sunts (NP-

Cr

SUB

Finite element method used in analysis of elastic-ustic shells of revolution under axisymmetric loading 23 p4180 N68-36420 Qualitative and quantitative methods for electronic equipment [NASA-CR-97207] 2 Ruter calculation for neutron (CEA-R-3467) Airy stress functions for determining elastic stress fields and stress intensity factors for finite bodies with single edge cracks and notches integral equations obtained for stress rates cor-responding to given rate of loading from elastic plastic work hardening sandwich arch [TR.20] Electrical stress analysis of microthruster power con-[NASA-TM-X-1686] End constraint effects on tests of anisotropic bodies [AFML-TR-67-425] 24 p4350 N68-38196 Experimental stress analysis activities in European [REPT.-15] STRESS CONCENTRATION Stress concentrations in rib-reinforced plates and sells, and effects on structural design NASA-TT-F-427] 01 p0142 N68-10407 INASA-TT-F-427] Couple stresses and singular stress concentrations in lastic solids [TR-12] Literature survey on joint thermal conductance between boilted plates and experimental work on nor-mal stress distribution under boiltheads and interface stress distribution. [NASA-CR-905491 Stability of shells of revolution with arbitrary generatrix curvature and stress concentration around circular hole in orthotropic cylindrical shell [FTD-HT-66-786] 04 p0386 N68-13001 Stress concentration a orthotropic cylindrical shell

around circular hole in 04 p0586 N68-13003 Stress concentration in metals at low temperatures, and boundary layer reaction with hypersonic stream in conical nozzle

[FTD-HT-66-464] 04 p0544 N68-13320 Static strength of metals in conditions of complex ressell state and low temperatures 04 p0589 N68-13321

Fretting fatigue mechanism controlled by stress fields generated by contact of two surface topographies [AGARD-AR-8] 04 p0590 N68-13553 n behavior of Zircaloy 2 pressure Acoustic emiss tubing under applied stress [BNWL-545]

05 p0747 N68-14403 Flow stability of viscoplastic with slots in extrusion of metals tic medium between planes 06 p0919 N68-15282

Stress concentration a forced hole in plate nd nonsymmetrically rein-08 p1245 N68-17374

Plate vibration analysis using finite element method with assumed stress distribution and triangular ele-

98 p1249 N68-17520 Concentrated loads and Greens functions in classical

tics [TR-13] 08 p1250 N68-17596 Time dependence of stress, strain, and displacement istributions in viscoelastic and plantic solids under dif-Ferent loads [NASA-CR-93354]

08 p1254 N68-18129 d stress concentrations and Effects of superimpose 10 p1603 N68-19740

Nonhomogeneous strain accumulation and plasticity idel for cyclic loading 10 p1610 N68-20542

Distribution of stresses and partition of loads in gus-11 p1794 N68-20993

Boundary value problem of annular plate subjected to concentrated load [PBAL-68-2] 11 p1797 N68-21310

Dynamic stress concentrations about discontinuity in near, isotropic, homogeneous, elastic, unbounded slates in plane stress and excited by time-harmonic ources of arbitrary force 12 p1975 N68-22054

Technique of field continuati (TR-67-LS-22) on in plane elasticity 12 p1975 N68-22066 Thermal stresses and elastic-plastic stress deforma-ion for bonded dissimilar media with straight cracks long interfaces 12 p1975 N68-22100

Stress concentration near breaks in long elastic fibers elastic matrices of fiber reinforced composites [AFML-TR-65-220, PT. 3]

12 p1895 N68-22823 Unit displacement theorem generalized to include in-ertia, thermal stresses, and dynamic structural analysis [AFIT-TR-67-10] 13 p2158 N68-23345 Contact stresses between finite two-dimens

13 p2160 N68-23486 Variational principle and the convergence of finite element method based on assumed stress distribution [ASRL-TR-144-1] 13 p2163 N68-24045

Photoelastic investigation of stress concentration in aphere cylinder transition region [NCEL-TR-572] 13 p2163 N68-24175

Bubble model to study stress-induced grain boundary dislocations and migration in crystals [TR-556] 13 p2139 N68-24248

Stress concentration and mechanical properties of imposites subjected to external loading 14 p2277 N68-24724 Stress concentration around spherical cavities in strain-gradient dependent elastic bodies subjected to uniaxial tension

14 p2357 N68-24973 Ring accelerometer errors from stresses developed by fixture vibrations [NASA-TN-D-4540] 15 p2465 N68-25830

Nickel single crystal edge dislocation velocity as action of stress 15 p2480 N68-25906

Structural design and weight analysis for skin at econd stage plug nozzle of NEPTUN reusable carrier concept [TUB-IR-3/1968] 15 p2568 N68-26071

Griffith and Barenblatt crack theory on two dimen-onal and axisymmetric cases for infinite bodies 15 p2569 N68-26234

Stress distribution in Griffith crack of solids acted on by body forces [AFOSR-68-0852] 15 p2572 N68-26738 Stress intensity far Griffith crack with a [AFOSR-68-0853]

asymmetrically loaded surfaces 1 16 p2775 N68-26990 Fatigue and tensile tests to study stress concentration effect on fatigue behavior and strength of smooth and notched steels [AFML-TR-68-19] 16 p2775 N68-27047

16 p2775 N68-27047 Photoelastic analysis of stress distribution in plates aded through pins

16 p2777 N68-27426 (NEL-311) Differential equations and numerical analysis for etermining stress concentration and elastic deformation in rubber sheet under axially symmetric stretching

ler axially symmetric stretching 16 p2777 N68-27533 [NASA-CR-80979] Regression analysis technique for deriving aerodynamic load spectra and strain prediction equations for low wing agricultural aircraft [ARL/F-41]

16 p2591 N68-28270 Deformation of thin, circular plate, and stress con-centration in edge loaded thin beam both solved for variable elastic properties gases

18 p3173 N68-29618 Numerical solution for problem of stress concentra-tion in infinite plate with two circular holes

ular holes 18 p3174 N68-29664

Iterative solution for calculating deformation and stress concentration near slits in elastic-plastic solids [NASA-TN-D-4717] 18 p3 [77 N68-30045 Development of analogy between couple-stress type ontinuum and discrete lattice structure

18 p3153 N68-30130

e factor for notch in an-to impact loads 18 p3179 N68-30269 neared aluminum rod subjected to in [AFOSR-68-0827]

Stresses and deflection from hydrostatic pressure loading of reinforced circular cylindrical shell [PIBAL-68-10] 19 p3375 N68-31145

Aircraft structural design parameters based on rela-tionship between fatigue life under constant and under variable stress amplitudes (FB-69/1966/) 19 p3377 NAR-31545 19 p3377 N68-31545

eing 727 flight data on stress ower wing surface 19 p3199 N68-31546 Statistical analysis of Boreguency distribution on lo frequency distribut [FB-64/1966/]

strain concentration in onant freq ring reinforced cylin [TM-405.3361-31] 19 p3378 N68-31562 Three dimensional photoelastic tests for stress dis-tribution in uniaxially loaded thick plates containing (NEL-288) 19 p3378 N68-31627

Determination of notched metal futigue strength at (AFML-TR-68-20) 19 p3381 N68-31811 Photoelastic analysis of stress distribution between

fasteners and plates [NASA-CR-96157] 19 p3381 N68-31846 Effects of notch geometry, temperature, and stiffness of stress state on notch sensitivity of heat resistant al-

20 p3599 N68-32347 Fatigue strength related to internal stress distribution in rotating beam of case hardened steel

20 p3496 N68-32560 Creep stress concentration at small circular hole in finite thin plate subjected to uniaxial tension 20 p3604 N68-33153

Stress field in vicinity of Irwin crack - logarithmic spothesis of plane elastic dislocation theory in plane acture problems

20 p3604 N68-33156 Neutron irradiation effect on plastic deformation of iron single crystals with different carbon contents stress-strain curve data [ORNL-TR-1930] 20 p3506 N68-33443

Stress intensity factors for crack propagation between series of successive slits and holes [NRC-10120] 20 p3607 N68-33598

Analytical procedure for determination of deflec-ons and stresses in web-stiffened sandwich shells nder external pressure 21 p3782 N68-33733

Finite element method for determining stress dis-tribution and deflected shapes of expanded I-section beam subjected to bending and loaded axially symmet-ric flanged cylinder

21 p3784 N68-33799 nerical analysis of stress distribution in closed cal shell loaded by concentrated forces 21 p3788 N68-34109

Cyclic frequency, tensile fatigue effects, and defect abstructure generated in vacuum by fatigue stressing of aluminum [NASA-CR-1165]

22 p3890 N68-35200 Summary results on investigations of deformation and stresses along billet cross-section in rolling of aluminum alloys [FTD-HT-66-357] 22 p3882 N68-35279

Solution of stress distribution equations for buckling of orthotropic plates by Laplace transformation [DLR-FB-68-33] 22 p3973 N68-35502

Stress state of thin-walled tubular steel samples sub-jected to biaxial tension in plastic deformation domain 22 p3975 N68-35988

Formula for stress distribution around crack in elastic solid under symmetric body forces [PSR-47/14] 23 p4179 N68-36281 Numerical method for calculating stress distribution around crack in elastic solid under load [AFOSR-68-1760] 23 p4181 N68-36523

Design of aircraft joints with aid of stress severity factor analysis

23 p4183 N68-37213 Stress and displacement discontinuities on stiffness characteristics of elastic structures - continuum

mechanics [PUBL.-123] 23 p4184 N68-37256

Airy stress functions for determining elastic stress fields and stress intensity factors for finite bodies with single edge cracks and notches 24 p4346 N68-37522

of crystal lattice defects in stress fields 21 24 p4334 N68-38208 [AD-674522] Shock wave interactions in combined two shear ITR-1801 24 p4351 N68-38314

STRESS CORROSION

Nitrogen content of austenitic stainless steels as related to stress corrosion [EURAEC-1902] 01 p0077 N68-10799 Stress corrosion cracking analysis by Mossbauer effect [MC-66-133C-R1] 02 p0257 N68-11148 on cracking of high strength materials 812] 02 p0221 N68-11302

Stress corrosion cras [NRL-MEMO-1812] Simulated study of effects of high altitude supersonic

air flow on titanium alloy hot salt cracking process [NASA-CR-981] 02 p0222 N68-11522

alloy with potamium [NASA-CR-72337]

Creep behavior of T-111 alloy tubing under biaxial tress and stress effects on corrosion behavior of T-111

Effect of microstructure on stress corrossion racking of titanium alloys in aqueous solutions at am

02 p0223 N68-11650

03 p0350 N68-12145

EX

ing

627

at

118

een

146

al-

47

ion

60

in

53

56

of

43

on

99

lie

33

19

n

æ

Q

Stress corrosion tests of titanium alloys in distilled and aqueous salt solutions at ambient temperatures employing single edge notch [NASA-CR-91115] 03 p0352 N68-12544 Precision glass-bead peening equipment for propel-lant tank surface corrosion protection [NASA-TN-D-4288] 04 p0514 N68-12890 Stress corrosion cracking of titanium aluminum vanadium alloy in nitrogen tetroxide under pressure [NASA-TN-D-4289] 04 p0519 N68-12891 Role of local dissoluteracking of titanium alloys olution in corrosion assisted 04 p0520 N68-13067 cking of stainless steel Hydrogen stress crack (TR-0158/3250-10/-6) 04 p0520 N68-13112 Sea water stress corrosion dependence on embrit-ing constituents in titanium-aluminum alloys minum alloys 04 p0521 N68-13250 tling constituents in ((NSRDC-2483) Stress corrosion cracking of titanium-aluminum al-ys in sea water environments (D6-19553) 04 p0521 N68-13353 Vacuum deposition method of measuring crack ropagation applied to brittle-type fractures associated ith stress corrosion cracking in litanium alloys titanium alloys 04 p0589 N68-13379 [D6-600721 Crystalline microstructural influence on susceptibility of titunium alloys to aqueous stress corrosion [D6-60083] 04 p0518 N68-13429 rosion cracking of titanium alloys by loading Stress-corros 05 p0746 N68-13992 Stress and chemical corrosion of titanium alloy in [TR-0158/3250-10/-5] 05 p0676 N68-14509 Stress corrosion and hydrogen embrittlement of 17-4 PH in 600 deg F hydrogen ammonisted and aerated (KAPL-M-6580) 05 p0676 N68-14517 Friction corrosion in metal parts of mechanical drive 05 p0668 N68-14726 Static, and dynamic corrosion tests on carbon, and stainless steels in pressurized hot water [EUR-3388.F] 05 p0678 N68-14779 Static corrosion tests on iron nickel chromium alloys rature steam in high temperal (EUR-3387.F) 05 p0678 N68-14780 Mark 2 annular superheat nuclear fuel irradiated to etermine stress corrosion of selected cladding materi-08 p1203 N68-17323 [GEAP-5510] Protective coatings and surface treatments for pro-ection of Ti-8Al-1Mo-1V alloy sheet from hot-salt [NASA-TN-D-4319] 08 pl185 N68-17377 Crack initiation phenom corrosion in high strength al [NASA-CR-61562] a associated with stress num alloys 08 p1250 N68-17592 on cracking mechanism in iron Stress-strain corros nickel chromium alloy system [COO-1319-57/Q-16/] 09 p1353 N68-19073 Fracture toughness, and stress corrosion cracking of tanium alloy weldments titanium alloy [PB-176490] 09 p1354 N68-19481 Stress corrosion in 17-4 pH stainless steel bolts for heavy water components test reactors [DP-1102] 09 p1380 N68-19490 Stress corrosion cracking mecha ms in titan [NASA-CR-80326] ... 10 p1537 N68-19542 Stress corrosion of stainless steels and roles of ustenite, martensite, and platinum in corrosion re-[QR-18] 11 p1713 N68-21071 Effect of uranium on impact characteristics, active tate corrosion resistance, stress corrosion resistance, anchinability, microstructure, and transformation in 11 p1715 N68-21208 (NP-17211) on stress corresion cracking of aluminum alloys [DMIC-MEMO-23] 11 p1716 N68-21509

Collection of papers on stress corrosion cracking of aluminum alloys, nonstainless steels, stainless steels, and titanium alloys [AGARD-CP-18] 14 p2267 N68-24397 14 p2267 N68-24397 sion and hydrogen em-14 p2268 N68-24398 Stress corrosion cracking of high strength age ardening aluminum alloys 14 p2268 N68-24399 ress corrosion cracking th aluminum alloys 14 p2268 N68-24400 lems and solutions of stress turni parts of high strength al s corrosion failures and th steels in water contain-Engineering aspects of stress layed failures of high strengt 14 p2268 N68-24401 stics of martenistic, lened steels 14 p2268 N68-24402 Stress corrosion charact ustenitic, and precipitation h alloys in chlorinated chloride, and aqueous carbons, hot dry sodi 14 p2268 N68-24403 lechanical and metallo pered CrNiMo steels, in steels, and difference b ographic properties for low maraging steels, and chromi-teween stress corrosion and 14 p2268 N68-24404 National survey on on stress corrosion cracking of aminum alloys, titanium alloys, and steels 14 p2268 N68-24405 Stress, time, and environs forced epoxide resin laminal [D-MAT-145] tal effects on glass rein-14 p2277 N68-24904 Corrosion problems in use of austenitic chrome-ickel-iron in nuclear reactors and irradiated fuel treatment plants (BNWL-TR-25) 14 p2271 N68-25079 Hot salt stress corrosion cracking of sheet metals for supersonic transport [NASA-TM-X-59634] 14 p2273 N68-25324 Accelerated stress corrosion test for aluminum alloys 15 p2479 N68-25730 (NASA-CR-61838) Macroscopic and microsco stress corrosion in magnes opic study of fracture due ium alloy landing wheel of S-2 aircraft [TDCK-49845] 15 p2385 N68-25912 Oxygen, water, hydrogen, and chlorine environments lated to stress corrosion cracking of titanium and tanium alloys - stress, temperature, and length of exium alloys - stress, ter re related to cracking 15 p2481 N68-25968 Chemical reaction mechanism of stress corrosi cracking of titanium alloys exposed to liquid nitrog 15 p2482 N68-26061 INASA-CR-618241 Stress corrosion, mechanical ture of stainless steels in steam an tions at high temperatures.
[EURAEC-1947, PT. 2] al properties, and struct and dilute chloride solu 15 p2483 N68-26261 Stress corrosion of stainless steels in chloride solu-[EURAEC-1947, PT. 1] 15 p2484 N68-26433 Failure of boot fitting from cracking and stress corro-[NASA-CR-61811] 15 p2474 N68-26660 Metallurgical analysis of aluminum alloy fasteser failure in fuel tanks
[NASA-CR-61813] 15 p2474 N68-26661 Stress corrosion cracking of iron nickel chromium al-COO-1319-611 15 p2486 N68-26751 Aluminum alloy de reptibility to intergran on substructure ar es correcion cracking 16 p2685 N68-28189 ARL/MET-45) ng of titanium alloys and formation of titanium oxide 17 p2900 N68-28751 Stress corrosion cracking chloride absorption during for NASA-CR-954931 Field emission microscope heat treatment on stress cor um-molybdenum alloys (AD-669252) pe investigation of effects of corrosion cracking of urani-17 p2902 N68-29285 ed austenitic stain [NASA-TN-D-4673] 17 p2902 N68-29379 Stress corrosion, flaw growth, and fatigue in study of teel cracking induced by adverse environmental con-[T&AM-312] 18 p3086 N68-29610

8 p3087 N68-29661 cracking effects on temile Hot salt stress corn NASA-TN-D-4674] 18 p3088 N68-30000 allurgy, and fracture cracking of high strength Surface reactions, echanics in stress cor NRL-MEMO-1864] 18 p3178 N68-30111 in shot peened als [ARL/MET-52] 18 p3090 N68-30160 Research studies on steel embrittlement in water cooled reactor technology [EUR-3784.E] 18 p3091 N68-30255 18 p3091 N68-30255 Elastic-plastic strain energy for cavitation resistant alloy selection (CHE-72) Stress corrosion cracking of citanium and titanium aluminum alloys in methanol iodine solution [RIAS-TR-68-4C] 20 p3495 N68-32518 Hot salt stress corrosion cracking of titumism alu-(NASA-CR-1133) 20 n3502 N68-33019 Initiation of hot salt stress corrosion cracking of INASA-CR-88069) 21 p3703 N68-34037 Role of moisture and hydrogen in bot salt stress cor-rosion cracking of titanium alloys [NASA-CR-89805] 22 21 p3703 N68-34204 Inhibition of stress corresion cracking with phosphate solutions
[BNWL-753] 21 p3704 N68-34366 Terminal fract corrosion cracks [D6-19771] n alloys containing stress 21 p3705 N6B-34628 fatigue of aluminum al-tructive tests 22 p3891 N68-35652 Stress corrosion as loys evaluated through [NASA-TM-X-53772] High density polyethyle for use on plastic ness of nechanically acceptable having stress cracking tendancies (HDL-TR-1396) 23 p4179 N68-36186 ak, condenser, and trap ling magnesium chloride 23 p4076 N68-36739 Stress corrosion cracking of titanium and titanium-aluminum alloys in methanol and iodine solutions [RIAS-TR-68-11C] 24 p4270 N68-38216 aluminum alloy struts Intergranular fractu [NRL-MR-1894] 24 p4270 N68-38359 STRESS CYCLES Inelasticity of crystalline rocks to alternating stress order hydrostatic pressure -application to tidal friction and seismology (TR-4) 02 p0204 N68-11248 Static fatigue failure of w ds under stress relaxatio VP-X-24] OK p1251 N68-17692 Electrical conductivity a sechanical stress cycling d resistance of wood under (VP-X-191 08 pl191 N68-17736 ermine fatigue life of ingth steel 12 p1886 N68-22080 ow cycle load tests to de-Low cycle fatigue of fila (ISAS-424, V. 33, NO. 6) ed composites 14 n2262 N68-24426 Discontinuity or hump pho curves reported for wide varie omenon in fatigue S-N of metals and test con-[ARL/SM-314] 16 p2790 N68-28267 STRESS FUNCTIONS Classical equations of elasticity in terms of stress components reduced to three stress functions and three INASA-TN-D-42531 01 p0084 N68-10355 of thin shell equations ral and mixed fo [NASA-CR-94592] 13 p2161 N68-23548 tement of plane non-16 p2781 N68-27736 ctions in membrane analysis of lis like parachutes 17 p2981 N68-28832 Stress analysis and f scalloped thin walled a [NASA-TN-D-4687]

SU

[/

IN

STRE

STRE

0

ехр

mich (CC

class (SU

Si sodi [AR

M cree AG

behi (RE

X

3

Effect of rotating secondary principal stress axes on Stress functions in continuum mechanics, and post ble deformation fields in interopic homoger compressible elastic material 19 p3376 N68-31213 21 p3785 N68-33806 Theorem based on equilibrium formula used to develop stress functions in shell theory [FTD-HT-23-783-67] 19 p3382 N68-32032 Electrical strain gage strips for residual stress mea-surements in core of induction hardened steel cylinders 23 p4075 N68-36389 Stress intensity factors for crack propagation between series of successive slits and holes [NRC-10120] 20 p3607 N68-33598 STRESS PROPAGATION Propagation of elastic and plastic strain pulses in ounded solids Application of characteristic functions to solution of [AD-659422] 01 p0145 N68-10831 thermal stresses in sector of plane circle 24 p4347 N68-37623 Seismic wave modeling experiments involving etonation of radial explosive sources in plates of glass nd Plexiglas prestressed to various static prestress STRESS MEASUREMENT and Plexiglas prestres Fluctuating turbulent stresses in noise-producing region of low speed jet [RR-7] 01 p0050 N68-10132 Surface wave propagation over viscoelastic materials Performance prediction and stress measurements on isolated VTOL-type propeller blade tested in free air [CAL-BB-1846-8-2] 03 p0299 N68-11962 06 p0920 N68-15336 Propagation and reflection of stress waves studied using cylindrical shell-core system [SC-DC-67-3210] 14 p2358 N68-25054 CAL-BB-1846-S-2 03 p0299 N68-11962 Photoelastic determination of stresses at opening in thin walled cylindrical pressure vessel [RR-67-9D7-PHOTO-R1] 07 p1088 N68-16180 Mechanical aspects of dynamic tear test of high performance structures to determine fracture toughness, stress intensity, and tear energy [NRL-1826] 07 p1090 N68-16504 STRESS RATIO Computer program for multidirectional structural rain data evaluation 08 p1179 N68-17690 Design and evaluation of three stress gages for mea-oring mechanical stresses on buried structures and STRESS RELAXATION ral elements TR-1-9011 09 p1339 N68-18296 Bibliography on thermal, mechanical, and stress pro-erties of coated particle fuels 09 p1374 N68-18530 Residual stress and fatigue measurements in aluminum alloys by ultrasonic shear and surface wave vycle VP-X-24] [NASA-CR-61584] 12 p1885 N68-21875 Dynamic model for char comechanical polarization Techniques and instrument developments for stress easurements in rocks on earth and moon NASA-CR-61203] 13 p2062 N68-23890 [NASA-CR-93332] Infrared radiometric stress instrumentation system for estimating detectable stress measurements [NASA-CR-1067] 14 p2357 N68-24971 Flow stress measurement for carbon effect on by computer program
[NAA-SR-MEMO-12590] 15 p2480 N68-25905 Elastic relaxation techniq of low density polyethylene f [RAE-TR-66262] Thermoelastic effect for peak stress measurement in 15 p2568 N68-26162 High temperature, high speed testing machines for flow stress measurement of metals and alloys ls and alloys 15 p2483 N68-26238 Limited application of plate twist test for measuring shear in fiber reinferced laminates (AFML-TR-67-407) 15 p2488 N68-26299 Hugoniot equation of state measurements for sand-tone, basalt, limestone, pumice, quartz, and polycar-IOR-101 bonate resin (NASA-CR-732301 17 p2877 N68-28631 um single crystals [NASA-CR-87745] Singular solutions of linear partial differential equa-tions for loaded shallow shells with stress measuretions for loaded shallow snews ments and displacement data given 17 p2980 N68-28759 Stresses and loads on radial nozzles in apherical and cylindrical shells to study reinforcement of openings in 18 p3181 N68-30578 simplified equati [AA&ES-67-2] Diameter gage for true stress-strain measurements of tensile specimens at reduced temperatures
[UDRI-TR-68-04] 18 p3079 N68-30819

Thermodynamic effects on stress wave propagation in viscoelastic solida 24 p4348 N68-37696 Correlation of fatigue crack propagation rates with stress intensity factor in aluminum alloy DTD 5070A [RAE-TR-67238] 12 p1976 N68-22192 Stress ratio effect on axial load fatigue and crack propagation tests on aluminum alloy sheets [NASA-TM-X-60125] 16 p2679 N68-27473 Creep analysis for glass plastic plates
02 p0277 N68-11574 Grain angle effect on fractional stress relaxation in 08 pl190 N68-17691 Static fatigue failure of woods under stress relaxation 08 p1251 N68-17692 odel for charge relaxation effects on elec-l polarization surface waves of electric 08 p1210 N68-17947 Nonlinear equations for stress relaxation at wave onts in viscoelastic rod 09 p1440 N68-18626 Stress relaxation curves for Hastelloy-N determined 11 p1714 N68-21142 ue for high speed drawing li p1707 N68-21284 Stress relaxation method for determining thermal dd athermal components of flow stress from flow 11 p1796 N68-21299 Impact strength and relaxation tests on Mannesma WB 35 and vacuum degassed magnesium-molybden 12 p1908 N68-22647 Relaxational dislocation damping due to dislocation slocation intersections with applications to magnesi-15 p2479 N68-25707 Finite deformations of plastic circular arch and staxation moduli of anisotropic linear viscoelastic 15 p2571 N68-26626 Theoretical and experimental comparison of con-tant stretch rate loading of viscoelastic materials using 18 p3178 N68-30103 Abnormal phenomena during stress relaxation in (WAPD-TRANS-90) 20 p3501 N68-32948 Rheological model of creep for determining in-fluence of recovery on stress relaxation process in 20 p3507 N68-33596 Photoclastic models of stress transfer mechanism in hisker reinforced composite aluminum matrix materi-21 p3782 N68-33674 Mechanical stress effects on electrical properties of tetal-silicon rectifiers 21 p3753 N68-33815 Intermittent stress-relaxation measurements on nitrile and neoprene rubber compounds - related with accelerated oven aging tests [RAE-TR-80016, PT. 2]

21 p3708 N68-34260 Stress relaxation behavior of isotropic incompressi-22 p3969 N68-34958 Wave front stress relaxation in one dimensional non-linear inelastic material with temperature dependence, and rate sensitive plastics with temperature depen-dence and yield point (REPT.-34) 22 p3972 N68-35432 Far infrared spectrometric analysis of stress induced frequency shifts in vibrational spectra of alkali halide crystals with impurities 24 p4329 N68-37490 STRESS RELIEVING Tempering treatment effects on mechanical proper-es of steels, and stress relief test data ties of steels, and str [EURAEC-1889] 01 p0078 N68-10858 Residual stresses in overstrained thick walled Metallurgical aspects of stress relief annealing of nuclear reactor pressure vessels
[EURAEC-1762] 11 p1743 N68-21631 Recovery of structural defects in refractory body centered cubic metals after irradiation and plastic 16 p2745 N68-28023 deformation [BLG-424] U CREEP RUPTURE STRENGTH STRESS-STRAIN DIAGRAMS Elastodynamic approach to measuring stre-relationship of uniazially stressed wire, an todynamic behavior of electromagnetically [NASA-CR-90038] 01 p0068 N68-10279 Discontinuous yielding of metastable austenitic [MML-9] 01 p0076 N68-10523 Preparation of si-heterocyclic, b-heterocyclic and apiro type ladder polymers [SC-RR-67-478] 01 p0081 N68-10556 Integral functions used to analyse near crack tip deformation fields in plane straining of materials which harden according to power law relations between stress [ARPA-E49] 01 p0144 N68-10771 Stress-strain curves for plastic deformation analysis of compressed polycrystalline iron silicon alloys [IS-T-128] 03 p0354 N68-12723 Dynamic tensile stress-strain test to determine effect of purity and temperature on dynamic microstrain of microstrain of [TR-0158/3250-10/-71 04 p0520 N68-12961 Split Hopkinson pressure bar technique for deter-ining stress-strain relation in aluminum 04 p0592 N68-13876 Stress rupture parameters analyzed by least squares 05 p0751 N68-14670 Composition, test temperature, and temperature of deformation effects on tensile properties and strain hardening of metastable austenitic steels [UCRL-17805] 05 p0677 N68-14742 Expanding ring used for determining tensile stress rain relationships as functions of strain rate 05 p0669 N68-14865 Stress-strain diagrams for work hardening anisotrop-06 p0920 N68-15433 Pressure dependence of tensile stress-strain behavior of recrystallized powder metallurgy tungsten at environmental pressures of 11 kilobars 1NASA-CR-92392] 66 p0856 N68-15715 Shear stress-strain curves of iron under torsional impact loading [TR-0158/3250-40/-3] 10 p1539 N68-19999 Modulus of elasticity, and fracture stress and strain aluminum oxides determined by bending tests by bending tests 15 p2488 N68-26125 of aluminum oxides [AFML-TR-68-23] Split Hopkinson pressure bar data analysis for stress-strain relationships from axial wave propagation and 15 p2571 N68-26550 Fracture behavior of viscoelastic materials under biazial stress fields [NASA-CR-88595] 16 p2775 N68-26972 Plane parallel flow stability in viscoelastic liquids stu-died with linear hereditary stress-strain law 16 p2641 N68-27041 Strain hardening of copper single crystals related to stress-strain and slip distribution 16 p2675 N68-27238

Aeroelastic analysis of shear stress measurements on

Conference papers on recent yain and measurement techniques 21 p3783 N68-33786 Conference papers on recent advances in stress anal-

Calculating time-dependent stresses in creep elastic materials, particularly concrete 21 p3783 N68-33793

Relaxation method for computing stremes in thin

Influence area concept for predicting stresses in twin saddle supported unstiffened cylindrical vessels 21 p3785 N68-33803

21 p3621 N68-33649

21 p3785 N68-33800

vibrating rotor blade models [SER-50419]

X

2

n

MUSTACHER

700000

Three dimensional finite element model for predicting deflections, stresses, and strains of elastic con-[NASA-TM-X-63238] 16 p2777 N68-27454 Particulate mechanics a array of elastic equiradii sp d stress-strain analysis for 16 p2779 N68-27624 ain hardening in single Crystals of coppe 16 p2746 N68-28187 e, force temperature mea-strain diagrams, and exity study 17 p2903 N68-28544 npression at medium strain rates for sele-[NOLTR-67-178] 17 p2904 N68-29400 os of elastoplastic deforma-methods of solving ther-loading considered 18 p3174 N68-29647 strain rela rying striking velocity and bar length, plastic mation and yield point, and stress-strain diagrams nalysis of impact tests on A1 and C steel using ve propag eory 18 p3176 N68-29876 Stress-strain, network topology, and optical coeffi-ents of crosslinked polyvinyl alcohol gel, and polarization of light by birefringent polymeric 18 p3098 N68-30035 Diameter gage for true stress tensile specimens at reduced ter [UDRI-TR-68-04] strain measurements of 18 p3079 N68-30819 Stress-strain diagrams for microjunctions in vacuum [NASA-TN-D-4743] cold welded copper 19 p3292 N68-31517 Generalized strain measure concept applied to linearization of basic stress-strain curves of compres-sive, shear, and tensile nature 21 p3786 N68-33810 Kinetic theory of fracturelastic properties of solids as [NASA-CR-96550] re to calculate strength and under uniaxial stress 21 p3787 N68-33850 Strain rate and high temperature effects on iron and opper stress-strain diagrams 22 p3887 N68-34872 Stress and strain in solid and hollow circular cylinders rotating about transverse axes 22 p3969 N68-34901 Quasi-static compression : nealed, commercially pure al [BRL-MR-1925] stress-strain curves for annum 22 p3890 N68-35243 ular steel samples sub-c deformation domain 22 p3975 N68-35988 Stress state of thin-wa Calculated temperature rise during plastic deforma-tion near crack tip [TR-1] 23 p4181 N68-36524 23 p4181 N68-36524 Dynamic stress-str [NASA-CR-92353] ain behavior of parachute cloth 24 p4272 N6E-37936 Basal plane shear stress-strain behavior of anisotrop-ic annealed graphite crystals [DOUGLAS PAPER-5139] 24 p4272 N68-37997 STRESS-STRAIN DISTRIBUTION
U STRESS CONCENTRATION CIDESS STRAIN, TIME DELATIONS Analytical and experimental investigations of defor-mation properties of reactive and high temperature metals and alloys 01 p0078 N68-10890 Deformation resistance analysis for steel steam pipes exposed to prolonged stress, and strain
08 p1252 N68-17715 Stress-strain corro sion cracking mechanism in iron nickel chromium alloy system [COO-1319-57/Q-16/] 09 p1353 N68-19073 Shock response experiments conducted with clamped circular mild steel plates [SU-DMS-67-36] 09 pl 443 N68-19224 Strain amplitude time effects on internal friction in sodium chloride [ARL-67-0272] 11 pl 768 N68-20744 Mathematical models for presenting thermophysical, creep, stress-strain, and fatigue data, particularly in AGARD material property handbooks. [AGARD-510] 11 p1714 N68-21153 nation of stress strain raze in cyclic testing 11 p1720 N68-21674 Photomicrographic de behavior of dry polycarbo [REPT.-67-C-374]

X ray diffraction analysis of time dependent molecular deformation process in polyethylene (ONR-TR-96) 14 p2276 N68-24585

Constant creep data accumulation for design stress analysis on cladding material thickness around cylindri-cal reactor fuel element [NASA-TN-D-4352] 15 p2504 N68-26764 Propagation of thermally generated stress waves in ispersive elastic rods 21 n3782 N68-33754 15 p2504 N68-26764 Plastic stress wave proj ion meatured in lead stresses in creep elastic Calculating time-dependent sterials, particularly concrete 22 p3968 N68-34879 21 p3783 N68-33793 Creep and recovery behavior in DTD 3070A am-imum alloy under time varying stress 21 p3786 N68-33812 ough porous and im-Stress wave prop ermeable layers 22 p3969 N68-34962 Hypervelocity impact stress waves in lam ste dependence of defor-enitic steels INASA-CR-97267] 23 p4183 N68-37080 21 p3702 N68-33826 hip hull 24 p4243 N6B-37549 Wave excitation for [NASA-TT-F-11832] vior of isotropic incompressi-Design of fluid couplestic stress waves cer system to amplify 22 p3969 N68-34958 STRESS TENSORS 24 p4299 N68-37556 obolev averaging operator used to con-is functions satisfying Cauchys theorem 02 p0241 N68-11705 Friedricha-So cteristics of thin-walled, rbitrary moving pressure [REPT.-67-23] cal electromagnetic one 24 p4347 N68-37599 Thermodynamic effects on stress wave propagation viscoelastic solids 11 p1747 N68-21453 Elastic strain effects on nuclear electric quadrupole steraction in sodium chloride and sodium bromide 24 p4348 N68-37696 nd uodium bromide 12 p1835 N68-22359 STRESSED-SKIN STRUCTURES Aerodynamic characteristics shell, and conical shape [NASA-TN-D-4360] stics of tension string, ten-es in supersonic flow 09 p1266 N68-18720 Extremum principles for linear anisotropic elas-dynamics related to polarization tensors todynamics related (DOC.-67SD277) 12 p1977 N68-22390 Fracture behavior of viscoelastic materials under Pressure test analysis for large multiple cell tank with rectioned skin [NASA-CR-612211 biaxial stress fields (NASA-CR-88595) 14 p2359 N68-25222 16 p2775 N68-26972 Theoretical and experi-stant stretch rate loading of simplified equation [AA&ES-67-2] perimental comparison of con ing of viscoelastic materials using TRE AXIAL STRESS CRITICAL LOADING PHOTOSTRESSES
RESIDUAL STRESS
SHEAR STRESS
TENSILE STRESS
THERMAL STRESSES 18 p3178 N68-30103 TRESS WAVES Velocity and att nd compressions ydrogen plasma enuation measurements on torsional al wave propagation in decaying TORSIONAL STRESS
TRIAXIAL STRESSES
VIBRATIONAL STRESS 01 p0118 N68-10763 orphology and trajectories stersecting impulse stress wa s of fractures generated Reliability assess under high stress cor [NASA-CR-90524] ent for fuel cell stack performance 03 p0420 N68-12117 Stress waves and dynamic subjected to shock wave loads acteristics of rocks 02 p0163 N68-11827 om explosion 03 p0339 N68-12260 Structural analysis of st monolithic, semimenocoqu [AS-68-F-6] stresses and displacements in que skin punels 04 p0585 N68-12993 d cylindrical shells sub-(AFOSR-67-2453) internal pressure 04 p0591 N68-13847 04 m0586 N68-13043 Velocity interfero structure in aluminum Long term mechani-mechanical stress anical properties of metals subjected ess at elevated temperatures and 04 p0590 N68-13813 neutron irradiation (EURAEC-1921) 04 m0523 N68-13863 Nontransient, steady at um half space and infini olution for elastic medi-ab subjected to moving sternal stresses in elastic shear load [SC-TM-67-779] 05 p0748 No8-14554 05 p0751 N68-14766 Seismic wave modeling etonation of radial explosive Stress dependence of ten experiments involving sources in plates of glass various static prestress sile creep rate in carbons and pyrolytic graphii [NASA-CR-92706] 07 p1011 N68-16484 Orthotropic pressurized cylindrical shell subjected to radial line loads [TR-0158/3240-30/-4] (SRI-PGU-6099) 06 p0919 N68-15291 ting ground shock phenomena al shock propagation - loading-teractions in soil shock tube 08 p1251 N68-17635 Procedures for prec ased on one dimensi 10 p1605 N68-19943 unloading stress wave [URS-668-11] Anisotropic plasticity in sheet metal under stress from tensile tests
[COA-NOTE-MAT-15] 15 p2479 N68-25674 Elastic radiation from in of crystal structure in solids al strains or alterati Mellin integral transform acement near vertex of e used to investigate dis elastic wedge under mis 12 p1953 N68-21964 Discrete analysis methods in nics of deform houndary condition (AFOSR-68-1373) 19 p3380 N68-31788 14 p2357 N68-24954 Effects of earth surface features on underground tress fields Propagation and reflection of stress waves studied using cylindrical shell-core system [SC-DC-67-3210] 14 p2358 N68-25054 20 p3467 N68-32273 Solution of plane problem for theory of elasticity for ressed annular sector Split Hopkinson pressure bar data analysis for stress-strain relationships from axial wave propagation and [RTS-4114] 20 p3600 N68-32385 (NOLTR-67-156) Relation of adi [ERDE-5/M/68] sive thickness on joint strength 20 p3509 N68-32517 15 p2571 N68-26550 cture mechanics from a or impulse loads 18 p3 73 N68-29591 Time dependent spalling dynamic response to shock w [BAT-197A-4-3] Stresses in plate bending by application of Green and Naghdi theory 20 p3603 N68-33140 dusis of stress wave Dynamic photoe ropagation in cones trical loading of infinite plates weakened by 19 m3374 N64-30883 circular holes (FTD-HT-67-78) Multiple rupture points in textile fabrics 20 p3602 N68-32931 STRETCHING Numerical method for response of simply supported mal incidence Basic equations retching and bendi ent method determining transic (NASA-CR-1175) 21 p3782 N68-33737 [NASA-CR-90500]

SU

la (2

00

[]

IC

chi

[R

min (N/

fibe [RA

PO

E

S

S

NA NA

and arra [NA

effe

STRIATION Differential equations and numerical analysis for determining stress concentration and elastic deformation in rubber sheet under axially symmetric stretching [NASA-CR-80979] 16 p2777 N68-27533 Derivation of equations of motion, constitutive equa-tions, and boundary conditions for micropolar fluids with stretch capability [TR-3] 20 p3462 N68-32808 STRIATION Fast striations in prebreakdown of gas discharge using microwave receiver techniques 11 p1759 N68-20773 STRINGERS

Diffusion of load from transverse tension bar into emiinfinite elastic sheet 13 p2164 N68-24230 Multilayer damping treatment for skin-stringer struc-

[GSF/MC/68-9] STRIPPING

Deuteron stripping and pickup reactio [UJV-1870] 08 p12 08 p1214 N68-17662 Optical model computer program for nuclear reaction particle stripping and capture
[TID-24250] 13 p2114 N68-23301

21 p3790 N68-34557

11 p1665 N68-21813

Intermediate excitations in deuteron stripping reac-[JINR-P4-3872] 24 p4316 N68-37953

STROBOSCOPES Communication sciences and engineering studies dealing with information processing, biophysical models, seurophysiology, and stroboscopic light research

STRONTIUM

Adsorption thermodynamics of barium and stronti-n on graphite at high temperatures 3A-7968] 01 p0146 N68-10009

Solubilization of centigram and kilogram plant samples of some elements and isotopes [UCLA-12-613] 03 p0313 N68-12330

Conductivity of calcium, stronium, barium, and yt-terbium disolved in liquid ammonia measured in terms of metal concentration and temperature 09 p1297 N68-19107

Nuclear shell model program for IBM 7090 calcula-tion of least squares fits in strontium nuclei 09 p1397 N68-19289

X ray powder diffraction for phase diagrams and structure of intermetallic compounds in barium and strontium-magnesium systems

16 p2682 N68-27789

STRONTIUM BROMIDES

Magnesium anode structure [ECOM-01998-F] 02 p0161 N68-11118 STRONTIUM COMPOUNDS

Thermal conductivity measurements on inotopic strontium heat source compounds [ORNL-P-3203] 01 p0150 N68-10438

Extended area tungstate cathode with low work function formed by reacting tungsten with strontium oxide on base metal at elevated temperatures 09 p1405 N68-18311 [ECOM-0381-1]

Microwave and optical studies on point defects in calcium oxide and strontium oxide single crystals 10 p1579 N68-20150

Mathematical model for performance analysis of Brayton cycle in turbine engines
14 p2334 N68-25298

Strontium tungstate mixed crystal cath (ECOM-0381-F) 16 p2631 N68-27151

Color centers in single crystal strontium oxide in strontium and calcium metal vapors 19 p3352 N68-31173

Dielectric and structural investigations of sodium obassium and sodium strontium cadmium niobates potassium and sodium structural possessing defect structures [AD-671905] 20 p3581 N68-33033

STRONTIUM FLUORIDES Crystal field split energy levels of rare earth doped alcium fluoride, strontium fluoride, and cadmium

horide crystals 17 p2958 N68-28814

STRONTIUM ISOTOPES

Thermal conductivity measurements on isotopic at usurce compounds [ORNL-P-3203] 01 p0150 N68-10438

Six gap beta ray spectrometer applied to beta and gamma ray spectroscopic study of strontium 83 and tel-turium 131

20 p3478 N68-32528

STRONTIUM SULFIDES

Strontium, calcium, and magnesium suffides in in-rared-stimulated luminescence dosimetry 04 p0360 N68-13695

STRONTIUM 85

Tabulated data on genetic effects of strontium 85 gamma radiation on Neurospora [NASA-CR-94934] 15 p2391 N68-25851 STRONTIUM 89

Fission products atmospheric distribution studied sing radioactive strontium tracers using radios 17 p2877 N68-28960

STRONTIUM 96

Plant for extraction by solvent of strontium-90 and rare earths from cesium 137 free fission product solu [EUR-3612.F] 01 p0026 N68-10863

Pilot plant for solvent extraction of strontium 90 from fission products
[EUR-3613.F] 01 p0026 N68-10864

Dose predictions and biological effects following burnup of strontium 90 isotope source in space [SC-CR-67-2792] 12 p1826 N68-22894

STROUBAL NUMBER

Pressure and velocity fluctuations and fields in turbu-lent mixing and other regions of air jet using hot wire Strouhal number measurements 18 p3063 N68-30282

Strouhal and Reynolds n ers in two dimensional flow around circular cylinders [NASA-TT-F-11763] 18 p2998 N68-30337

STRUCTURAL ANALYSIS

NT BERNSTEIN ENERGY PRINCIPLE

NT DYNAMIC STRUCTURAL ANALYSIS

ENERGY METHODS EQUILIBRIUM METHODS FLUTTER ANALYSIS

MATRIX METHODS STRAIN ENERGY METHODS

Longitudinal tolerances in accelerating structure of 10 MeV proton linear accelerator [INR-790/SLBAL/PL] 01 p0101 N68-10036 Analysis methods for plastic deformation of struc-tures under dynamic loading [BU/NSRDC/1-67] 02 p0275 N68-11422

02 p0275 N68-11422 High frequency structural damping due to riveted ints associated with gas pumping between over-[NASA-CR-954]

02 p0276 N68-11489 Structural and application aspects of short active ceiving antennas with integrated transistor elements 02 p0190 N68-11874

Structural analysis of aircraft components by ul-[TR-6703.286/A] 03 p0346 N68-11916 Mathematical model for orbiting satellite structure with passive temperature control

03 p0426 N68-12276 Operational temperature effects on vertical takeoff regult structure

03 p0300 N68-12278 Finite difference equations fo tilted wings and control surfaces ns for structural analysis of

03 p0421 N68-12296

Structural analysis of airplane pressure cabins with reinforcing ribs and stringers
[REPT.-19] 03 p0422 N68-12299 Calculations on mesh structure requirements for neutron transport in cylindrical uranium graphite cell [AEEW-M-760] 03 p0397 N68-12724

Shock wave effects on metal and ionic crystal struc-03 p0385 N68-12765

Structural analysis of stresses and displacements in monolithic, semimonocoque skin panels [AS-68-F-6] 04 p0585 N68-12993

Dynamic anap-through of elastic imperfect simple hallow truss to determine effect of geometrical imperctions on buckling 04 p0588 N68-13290 TR-51

X ray diffraction analyses of bicyclic phosphate, and hydrolytic phosphate isomer structures [IS-T-183] 04 p0473 N68-13753 Computational procedures for determining dif-ferential equation governing motion of linear and non-linear structural systems subject to random excitation [NASA-CR-91803] 05 p0751 N68-14854

Thermodynamic measurements for liquid structure odels

[LA-DC-8804] 05 p0757 N68-14856 Resistance analysis for glass fiber reinforced plastics under biaxial compression by constant load 05 p0682 N68-14999 Matrix method for static calculations on thin elastic 06 p0918 N68-15212

Natural modes and frequencies of vibration of struc-ires determined by analysis of conceptual or mathe-iatical models matical models [NASA-CR-92509] 06 p0919 N68-15289 lationships between algorithm structures, and nuter systems

06 p0810 N68-15589 Design criteria, and concepts for interplanetary solar

DGRR-67-0241 06 p0917 N68-15850 Design data for gas cooled test loop, and inpile cap-sule facility from mockup reactor experiments [NASA-TM-X-1509] 06 p0877 N68-15855 Optimum design geometry bine performance efficiency [NASA-TN-D-4384] etry for high radial inflow tur-

06 p0770 N68-15943 Manual for LION the [KAPL-M-6533] rmal structural evaluation code 07 p1091 N68-16737 Models, and approximation methods for remainshipses on large redundant structures 07 p0979 N68-16996

Computer calculations for structural engineering problems - performance prediction, construction materials, mechanical properties, and structural mem-

[FTD-MT-66-24] 07 p1092 N68-17133 Computer application in structural design, construc-tion planning, and implementation 07 p1093 N68-17134

Calculation method for structural solid beams on clastic supports 07 p1093 N68-17137

Survey of aircraft structural test facilities and techniques in Great Britain [RAE-TR-66116] 08 p1156 N68-17274

Conference on finite element method application to structural vibration analysis 08 p1249 N68-17516

Finite element method and application to vibration 08 p1249 N68-17517

Finite element method applied to vibration analysis of rectangular flat plates 08 p1249 N68-17518

ite element method applied to rectangular flat 08 p1249 N68-17519

Structural vibration analysis using triangular finite

08 p1249 N68-17521

Relativistic magnetohydrodynamic equations for structural analyses of shock waves 08 p1218 N68-17706

Effects of perforated sheet structure ponent removal in bubbling water merci tructure on heavy comos p1161 N68-17728

Electrical conductivity mea urements for liquid lar forces analyses 08 p1210 N68-17729

Electron microscopic analysis on annealed cold rolled vanadium, and distribution of oxygen interstitials in vanadium structure [EUR-3642.E] 08 p1186 N68-17879

Swelling, birefringence, and X ray analyses on layered structure of solid polybenzyl glutamate films [ONR-TR-RLT-103] 08 p1191 N68-17893 Synthesis, and structural analysis of polymeric PA-TR-35861

08 p1143 N68-17960 nt principles for aircraft Basic design, and develop [NASA-TT-F-11415] 08 pl115 N68-18192

sting for rapid imspec-m allovs Nondestructive ulti tion of weld defects in [NASA-CR-61585] n alloys 09 p1347 N68-18625

Selected articles in aero [FTD-MT-65-72] cal engineering 09 p1382 N68-18668 Structural analysis of shipt tegrity of container for shippin [ORNL-TM-2064] board irradiator and in-ng radioactive materials 09 p1375 N68-18877

Membrane and bending theory of single and mul-span hyperbolic paraboloid shells 09 p1444 N68-19179

olids eroded by repeated 09 p1445 N68-19409

on noctifucent clouds 09 p1339 N68-19491 Structural formation (NASA-TT-F-11523) al computer program for structures 10 p1601 N68-19515 **ELAS** general purp

EX

212

the-

289

and

589

olar

850

ap-

855

tur-

943

lity

133

34 on

37

ind

74

16

ion

17

sis

18

lat

19

ite

21

for

06

28

aid

29

om

93

ric

60

aft.

92

25

68

21-

79

11

Evaluation of moon crater polygonality, and irregu-[NASA-CR-93660] 10 p1589 N68-19559 Matrix algebra digital computer programs, and ex-erimental tests for structural analysis on rectangular 10 p1602 N68-19618 Statistical correlation between engine design an combustion stability in liquid propellant rocket engine [NASA-CR-72370] 10 p1584 N68-19744 Design calculations for modified variable stability aircraft [NASA-TT-F-11679] 10 p1458 N68-19750 Electron, and ion micro opic study of structural de-[NASA-CR-93720] 10 p1576 N68-19792 Optical microscopic analysis on corrosion and crystallogenesis of silver oxide electrode in alkaline (NRL-6647) 10 p1483 N68-19868 Computer program for approximate analysis of tructural responses of complex supersonic sleds under [MDC-TR-68-3] 10 p1606 N68-20017 Computer design and program development studies [COO-1018-1132] 10 p1503 N68-20197 Numerical and structural analysis of flight stability of outd filled she'lls [BRL-MR-1892] 10 p1609 N68-20470 Analysis of eccentrically stiffened skewed plate 11 p1791 N68-20635 Large elastic deformatio low doubly curved shells ns and snap through of shal-11 p1792 N68-20637 Applications of symbolic network-topological ethods to structural analysis and design d design 11 p1793 N68-20852 Systematic methods for determining dynamic characteristics and random vibration of linear struc-[TR-53] 11 p1793 N68-20866 Fundamental leakage and structural studies of fluid connectors and seals [NASA-CR-93925] 11 p1704 N68-20974 Finite element analysis of rectangular plane frames [RR-56-7] 11 p1795 N68-21163 Structural analysis of sandwich shells of revolution ith glass fiber reinforced plastic facings and honeycomb cores [USAAVLABS-TR-67-65] 11 p1799 N68-21663 Digital computer program for calculating steady state frequency response of laterally excited truncated cones and cylinders in low to moderate frequency [NASA-CR-93964] 11 p1800 N68-21780 Numerical group-iterative methods for analysis of complex structures by independently solving for each 11 p1800 N68-21786 Acoustic testing of Apollo lunar module to determine structural and component integrity during launch [NASA-TM-X-58016] 12 p1971 N68-21946 Ship vibration analysis by finite element technique [REPT.-107S] 12 p1974 N68-21988 Molecular structure changes in polyacrylonitrile fibers during pyrolysis [RAE-LIB-TRANS-1272] 12 p1893 N68-22017 Molecular structure change in flame proofed polyacry lonitrile fibers during carbonization [RAE-LIB-TRANS-1273] 12 p1893 N68-22018 Effects of impurity iron on aluminum annealing tex-12 p1886 N68-22090 Structural, electrical, and systems analyses for single-NASA-CR-94318] 12 p1819 N68-22231 Structural, electrical, and systems analyses on non-tracking, deployed, truncated, conical solar array [NASA-CR-94320] 12 p1819 N68-22232 Systems engineering and analysis, structural analysis, and performance tests on two panel oriented solar [NASA-CR-94319] 12 p1819 N68-22233 Stiffness correction ma trix for analysis of tensile load effects on transvers [DOC.-675D264] 12 p1978 N68-22533 Structural analysis and magnetic field topology of stellarator diverter 12 p1857 N68-22951

Electron microscopic analysis of pure aluminum sub-structure grains during thermal creep and pressure [SC-RR-67-2975] 12 p1892 N68-22963 Review of design and testing of modern commercial taircraft structures 13 p1990 N68-23197 Analysis of structures v fold symmetry 13 p2157 N68-23249 Basic equations and method of solution for compu-terized analysis of shells of revolution with axisymmet-ric collapse and nonsymmetric bifurcation buckling [NASA-CR-1050] 13 n2159 N68-23451 outer programs for structural Finite element com analyses on underwater (NCEL-TR-567) 13 p2162 N68-23975 Standard diffraction pattern cubic lattices and metal foil str [ARL/MET-58] rn data for face centered tructure identification 13 p2084 N68-24002 Rational approximations in crystal structure analysis 13 p2140 N68-24284 Structural design analysis for columns, plates, and cylindrical shells of fibrous composite materials [NASA-CR-94658] 14 p2353 N68-24412 Dynamic analysis of linear elastic solids and coupled systems of solids and structures [REPT.-67SD262] 14 p2355 N68-24519 Instruction manual for static structural analyses on self-type spacecraft structures shell-type spacecr [NASA-CR-912] 14 p2356 N68-24802 Computer program for OGO-E vehicle response nalysis to transient loading during Atlas booster bur-[NASA-CR-94761] 14 p2351 N68-24918 Matrix analysis of outer edge effect on stress state of sherical shell with circular hole 14 p2357 N68-24993 Polygonality and shape irregularity analyses for lunar [DRB-T-491-R1 " 15 p2559 N68-25976 Structural design and weight analysis for skin at cond stage plug nozzle of NEPTUN reusable carrier (TUB-IR-3/1968) 15 p2568 N68-26071 High temperature vacuum X ray camera for struc-tural analysis of metals and alloys [INR-869/XIV/PS] 15 p2468 N68-26521 Structural analysis of plustic apherical sandwich shells under hydrostatic pressure 15 p2571 N68-26532 Brittle rupture analysis on body with linear disloca-16 p2778 N68-27586 ence methods for solv-tructural analysis 16 p2778 N68-27606 Accuracy study of finite differ [NASA-TM-X-59958] Applicability of deep wrinkle membrane theory in sessing maximum bending moment of inflated fabric ylinders, and packaging effects on collapse resistance (6 p.2784 No8-27925 Structural inconsistency of quantics of higher spin fields um electrodyna 16 p2730 N68-28133 s of stress and buckling spollo spacecraft 17 p2980 N68-28681 Nonlinear structural analysis pressures of aft heat shield of A [NASA-CR-95490] General purpose structural analysis program for solv-ing static and dynamic structural problems by force and displacement methods displacement metho (NASA-CR-95021) 17 p2981 N68-28904 boom and sound pres-analyzed 18 p3179 N68-30286 Transient response to so sure of rectangular structure

Fracture mechanics app of reactor vessel steel plates (EURAEC-2007)

Cycle characteristics and turbojet and turbofan engine [NASA-TM-X-1624]

Textbook on problems a strength of deformable mate [FTD-MT-65-277]

Variational method for de for plate deflection problems [FTD-HT-67-336]

Sequential design of redu

Microscopic analyses of chondrite structures, and orrelation between metallic iron and iron oxide con-unt of allicates in chondrites

Review of literature on structure of cell membranes [RTS-4481] 20 p3405 N68-32664

h to structural analysis

18 p3116 N68-30382

uctural configuration of or lightweight aircraft 19 p3359 N68-31476

19 p3378 N68-31626

ng network equations

19 p3378 N68-31650

19 p3370 N68-32062

t elastic structures 21 p3783 N68-33787

ods of determining

Elastic analysis of grillages including torsional effect and stability 21 p3787 N68-33890 Method for analyzing piecewise linear behavior of elastic-plastic grid systems 22 p3970 N68-35048 Fabricability, mechanical properties, and structura efficiency potentials of boron-polymer film layer com-NASA-CR-1114) 22 p3893 N68-35100 Osmium tetroxide as fixing and coloring agent is electron microscopy of thermoplastic polymeric TRANS-15361 22 p3896 N68-35525 SNAP 27 program de ents into ALSEP pro-GEMS-4001 22 p3911 N68-35699 Structural analysis of r ear flutter of plate fixed along its perimeter (FTD-HT-67-217) 23 p4179 N68-36292 Design calculation um heat transfer body of revolution at I [NAL-TR-151] 23 p4187 N68-36518 Finite element method for plastic bending analysis of [NASA-CR-97373] 24 p4349 N68-37964 analysis of chromium nickel re after thermodynamic treat-24 p4269 N68-38094 Computer programs for Liapunov matrix equation obtation in nonlinear stability and structural analyses RM-425] 24 p4240 N68-38102 [RM-425] STRUCTURAL BEAMS
U BEAMS (SUPPORTS) STRUCTURAL DESIGN NT PRESSURE VESSEL DESIGN Stress concentrations in rib-reinforced plates and sells, and effects on structural design NASA-TT-F-427] 01 p0142 N68-10407 [NASA-TT-F-427] Design and fabrication of aluminum alloy propellant tank shells for Apollo oxidizer reaction control system [NASA-CR-65803] 01 p0142 N68-10448 Design of viscoelastic damped structures for reso-aant vibration control 01 p0142 N68-10451 Structural design problems of third stage engines of ELDO A satellite launching systems 01 p0140 N68-10668 Structural design of radar antennas and reflectors and reflectors (JPRS-43333) 01 p0030 N68-10697 Alouette 1 satellite ionospheric studies, electrical equipment design and performance, mechanical design, and environment [DRTE-119] 01 e0140 Mes 1020-Structural design methods for analysis of multilayer or laminated filamentary composites [NASA-CR-964] 02 p0274 NS8-11191 Design and development of high resolution mass pectrometer with electrostatic and magnetic field analyzers [NP-TR-1580] 03 p0344 N68-12524 Ship hull geometry, nozzle design, and Voith-Schneider propeller blade movement [REPT.-2469] 04 p0583 N68-12807 Practical design curves for axial compression, and ure bending factors of eccentrically stiffened circular [NASA-CR-91268] 04 p0585 N68-12872 Thermal insulation for cryogenic containers, and heat leak inhibition [TRG-1455/R/X/] 04 p0593 N68-12898 04 p0593 N68-12898 Engineering design criteria for 30 watts per pour rollup solar array [NASA-CR-91445] 04 p0447 N68-129 04 p0447 N68-12939 Mathematical analysis of variable design effects on booster performance [TR-1001/2305/-1] 04 p0563 N68-12942 TR-1001/2305/-1] 04 p0563 N68-12942 Design criteria for experimental heat pipe collector radiator structure [NASA-CR-91437] 04 p0447 N68-12979 Design and develops for operating in therma [NASA-CR-91390] of silicon solar cell panel ing cycles 04 p0449 N68-13101 nt of transportable ground ication technology 04 p0476 N68-13210 [NASA-CR-979] 04 p0487 N68-13617

SUB.

D

D

SI

P

nels [FT]

C

anal cal r [NA

C

C

ture [NA

INA

requivehi [NA

D

D

SI

St 100,

C

acos spac

R

St

of at production [NA

Storbi

[NP

ture tions [NA

CEPE [NA

C

[AA

St

for a

INU

Succesive approximation methods for designing weakly conic, thin walled hulled rods with open or closed cross section outlines 04 p0592 N68-13857

Design criteria and concepts for fibrous composite sterials and composite structures, and failure [NASA-CR-66518] 05 p0745 N68-13962

Design, and aerodynamic evaluation of recoverable high altitude sounding rocket models with flexible

05 p0602 N68-13983 Conference on bubble chamber design, and instru-mentation for high energy particle tracking - structural design, elementary particle physics, and optical equip-ment

[CERN-67-26, V. 1] 05 p0709 N68-14281 Future neutrino research with giant bubble chambers

05 p0709 N68-14282 Hydrogen-deuterium large volume bubble chamber with long track for mass calculations on charged parti-

05 p0641 N68-14283 Cylindrical shaped large cryogenic bubble chamber for detection of pion mesons, neutrons, and neutrinos at 300 GeV accelerator

05 p0709 N68-14284 Design characteristics of large hydrogen bubble

er with superconducting or 05 p0642 N68-14287

Design of large hydrogen bubble chamber with mag-net coil for testing superconducting strips 05 p0642 N68-14288

Technical parameters, and operational planning for large heavy liquid bubble chamber er 05 p0642 N68-14289

Design, and construction of liquid hydrogen bubble hamber with large visible volume 05 p0642 N68-14290 Structural design of cylindrical hydrogen bubble hamber with thick magnet coils

05 p0642 N68-14291 Design, and optics of large volume hydrogen bubble hamber scale model

05 p0642 N68-14292 Design, and properties of 1 meter hydrogen test bub-

05 p0642 N68-14293

Construction parameters of proposed 15 meter hydrogen bubble chamber for 300 GeV accelerator 05 p0642 N68-14294

Design of Apollo telescope mount cluster configuration, and attitude control system [NASA-TM-X-60800] 05 p0743 N68-14635

Design of torque motor controller, and operation of breadboard control circuit [NASA-CR-91686] 05 p0638 N68-14644

Development, and construction of hypersonic wind [NASA-TT-F-11206] 05 p0646 N68-14878

Design, and operating conditions for gas, and elec-trolyte pumps of fuel cells [BMWF-FB-W-67-03] 06 p0768 N68-15249

Design, and constru for X ray photography [ISL-4/66, PT. 2] n of flash radiographic tube 07 p0973 N68-16150 Framework and packaging design optimization for infrared spectrometer compatible with Nimbus satellite

[PB-176215] 07 p1085 N68-16281 Design, and performance of magnetic computer tape terminal

07 p0971 N68-16967

Design, and performance of wideband FM genera-07 p0966 N68-16979

High performance insulation design, and manufac-turing plan of torus tank for Saturn 5 vehicle [NASA-CR-61557] 07 p1003 N68-17099

Design, and performance of various humidity sen-sors, and radionousles 08 pl177 N68-17487

Design, and performance of battery operated circuit

FTD-HT-66-635] 08 p1180 N68-17886 Design of variable temperature, automated conden-

08 p1143 N68-18042 Design, and performance of facility for Rankine cycle testing of two stage potamium vapor turbine [NASA-CR-924, V.3] 08 pl 125 N68-18044 FORTRAN computer program for supersonic tur-bomachinery blading design calculations [NASA-TN-D-4421] 09 p1308 N68-18620

Saturn S-4B workshop for manned, orbital animal research facilities - feasibility study [NASA-CR-93485] 09 p1279 N68-18706

on of high pressure, high tem-Design, and evaluation perature crystal growth system
[AFCRL-67-0656] 09 p1341 N68-18764

Design, and performance of Barany chair for calibrated acceleration studies on human vestibular analyzer

09 p1289 N68-18924 Design, and performance of liquid metal cooled fast

[BAW-1312] 09 p1378 N68-19083 and engineering mechanics of cecraft, propulsion support, and

Structural design and engi-aseline Voyager spacecraft, p anetary scan platform NASA-CR-93562] 09 p1434 N68-19104

Design calculation method for ducted ship propellers in uniform flow fields 09 p1415 N68-19148

tural design, and per-led Voyager spacecraft configuration [NASA-CR-93534] 09 p1435 N68-19152

Structural design and systems engineering data on mechanical subsystems of recommended Voyager spacecraft configura [NASA-CR-93553] 09 p1436 N68-19154

Design alternatives and growth potential of recom-ended and upgraded Voyager spacecraft configura-[NASA-CR-93560] 09 p1436 N68-19158

Detail design, acceleration and vacuum tests, and support fixtures for deployable solar array [NASA-CR-93670] 09 p1277 N68-19334

nt of solar wind spectrometer speriment package 09 p1345 N68-19385 Design, and development of for Apollo lunar surface exper [NASA-CR-93667] n of modified space en-

Design, and instrumentation of mo vironment simulator for spacecraft test [NASA-CR-93689] 10 pl 10 p15[1 N68-195]] um versus iridium-

Design, and calibrati rhodium thermocouples [NASA-CR-61683] 10 p1529 N68-19864 Design concepts for optimal r [RM-5475-PR] udar systems 10 p1496 N68-19872

inochronous cyclotron [ORNL-4175] for separated-turn 10 p1512 N68-19905

Planform design method, graeroelastic stability of flexible [NASA-TN-D-4465] ral characteristics, and ting rotors 10 p1455 N68-19954

Systems analysis, structural design, and performance rediction for advanced multipurpose large launch INASA-CR-731541 10 p1599 N68-20046

Structural design of wind tunnel to operate at high Reynolds numbers [AEDC-TR-67-210] 10 p1512 N68-20133

Optical, structural, and thermal design criteria and fabrication techniques for collimating mirror in space simulator [NASA-CR-93792] 10 p1513 N68-20261

Aerodynamic, structural, and thermal analyses for supersonic planetary entry parachute design [NASA-CR-66585] 10 p1458 N68-20314 10 p1458 N68-20314

Material strengths, shock loading, and material stress analyses for planetary entry ringsail parachute design [NASA-CR-66388] 10 p1439 N68-20315

Structural design and perfor band parachute for supersonic [NASA-CR-66587] ance tests on disk gap lanetary entry 10 p1459 N68-20316 ns and materials test data for plane-

(NASA-CR-66586) 10 p1459 N68-20317 ent test data for disk

Structural design and comp gap-band planetary entry parac [NASA-CR-66589] 10 p1459 N68-20319 ng, and stress analyses Material strength, sho

for planetary entry parachu [NASA-CR-66590] 10 p1459 N68-20320 Tower telescope structure of solar observatory in (AFCRL-68-0022)

10 p1531 N68-20362 Design criteria for MOSFET portable ionization (CLOR-67/7) 10 p1507 N68-20422

Design optimization for sealed cells and batteries (ECOM-02361-3) on for miniature nickel cadmium 11 p1626 N68-20745 Applications of symbolic network-topological ethods to structural analysis and design 11 p1793 N68-20852

Design criteria for spatial disorientation flight simu-[SAM-TR-67-90] 11 p1639 N68-21017 Design and function of major components of spacecraft inertial guidance systems [NASA-TM-X-52399] 11 p1737 N68-21238

Structural design and opera personal radiation dosimeter erational details on Apollo ter and radiation survey NASA-CR-92048 11 p1701 N68-21647

Design, fabrication wed universal glider on, and testing of flexible wing towed universal gli [REPT.-29267-1] 11 p1625 N68-21772

Mechanized module technique for fabrication of heat resistant solar cell collectors and panels [RF-93-O] 12 pl818 N68-22010 Design, fabrication and testi

Design, fabrication and testing of flexible envelopes for insulated vessels containing cryogenic liquids [NASA-CR-94236] 12 p1882 N68-22114 Design, operation, and temperature compensation of toroid for precision pulse generator [UCRL-17639] 12 p1874 N68-22413

Performance characteristics of superconducting multistage accelerator [BNL-12060] 12 p1855 N68-22570

Vacuum systems for cascade mass spectrometer and three stage spe [KAPL-3382] 12 p1875 N68-22625 Relationship between fan drive turbine geometry and output efficiency of turbofan engine [NASA-TM-X-1581] 12 p1962 N68-22725

Design and performance of p converter for space vehicle teler [NASA-CR-61737] ce of prototype direct current le television transmitter 12 p1850 N68-22732

Window designs for mercury condensing tube and mercury boiler outlet tube [NASA-TM-X-1578] 12 p1856 N68-22737

Structural design, systems and subsystems require-ments, entry probe configurations, and transfer trajec-tories for flyby/entry probe system for 1972 Venus [NASA-CR-94406] 12 p1969 N68-22994

Structural design and parameters ters of linear induction electron acceler [UCID-15279] 12 p1857 N68-23010

Exhaust valve design for generator turbine discharge 13 p2142 N68-23116

Handbook for designing ball lock mechanisms for use on space vehicles [NASA-CR-1021] 13 p2073 N68-23356 13 p2073 N68-23356

Materials selection, structural geometry, proof test-ing and statistical screening, prestreasing, and system energy as tools for designing optimum trusses and other high performance structures [NASA-CR-1038] 13 p2159 N68-23399

Design and development of sensor for manned space mission [NASA-CR-66606] sent of prototype contar 13 p2067 N68-23461

Design and construction of viscometer for viscosity easurement of gases at high temperature and pressure

13 p2067 N68-23463 Design requirements for reactor power system of manned earth orbital space station [NASA-CR-94549] 13 p2106 N68-23470

14 p2355 N68-24801

Theoretical and experimental antenna studies for [NASA-CR-66620] 13 p2027 N68-23479

Design, thermal analysis, testing, and breadboard in-egration of two-stage radiant cooler for high resolution radiometer [NASA-CR-94600] 13 p2068 N68-23710

Construction materials, fabrication, and structural esign of plastic foam shelter for satellite geophysics observation stations [PMR-TM-68-1] 13 p2076 N68-23963

Design and performance of liquid oxygen-liquid hydrogen thrust chamber for M-1 engine [NASA-CR-54813] 13 p2144 N68-23999 Design of calorimeter for stored energy measure-sents in alkali metal halide crystals.

COO-325-30)
Design, installation, and operation of automatic eutron diffraction system
14 p2236 N68-24743 14 p2329 N68-24673

14 p2256 N68-24743 Literature survey on design loads for unmanned cket stages MWF-FB-W-68-03]

A-1222

SUBJECT INDEX Design and performance of time-of-flight spectrome-ter with neutron chopper [NIJS-R-515] 14 p2257 N68-24920 ruction of event recorder Design, operation for monitoring heat abla [NASA-TM-X-60497] 14 n2258 N68-25288 Shock protection design concepts for multistory cylindrical structures, housing equipment, and person-nel subjected to nuclear blast 14 p2367 N68-25548 Principal design features of extravehicular work platform [NASA-CR-94927] 15 p2563 N68-25874 Design and calibration of to for study of flow field in superso [TAE-79] on of total temperature probes supersonic flow 15 p2466 N68-26060 Design and aerodynamic characteristics of wind tun-15 p2381 N68-26490 (FTD-MT-67-07) Constant creep data accumulation for design stress analysis on cladding material thickness around cylindri-cal reactor fuel element [NASA-TN-D-4352] 15 p2504 N68-26764 15 p2504 N68-26764 Cost effectiveness studies on structural design of fu-INASA-CR-10681 15 p2581 N68-26813 Composite material development and structural design of improved throat inserts for ablative thrust chambers [NASA-CR-54984] 16 p2750 N68-27334 Structural design problems requirements, and configuration vehicles with air breathing propu [NASA-TM-X-59063] ms for missions, design ations of hypersonic air opulsion system 16 p2588 N68-27447 Design and calibration of dynamic low cycle testing machine IME-311 16 p2637 N68-27558

EX

0852

1017

of

238

rvey

647

ring

772

of

010

114

n of

613

ing

570

125

and

125

ent

32

md

37

reec-

94

10

pe

16

or

56

ıı.

m

19

il

3

0

Design specifications for radioactive sources, X ray units, and betatrons [ISS-68/6, CH. 7] In particular model for calculating optimal dynamic absorber design for maximal vibration damping of OGO satellite 16 p2781 N68-27711

Structural design of lifting body shapes and flight tests results from M-2F-2 lifting body [NASA-TM-X-59042] 16 p2773 N68-27797 Structural design of Concorde aircraft 16 p2589 N68-27871

Proposed modular assembled antenna experiment for S-B Workshop
16 p2625 N68-27918
16 p2625 N68-27918
16 p0000 cubic foot acoustic reverberation chamber

100,000 cubic foot acoustic reverberation chamber 16 p.2638 N68-27991 Concept, design, and performance of spacecraft acoustic laboratory used in vibratory testing of Apollo spacecraft

16 p2639 N68-27992

Reference bibliography for closed loop water tunnel design [AAEC/TM-410] 16 p2639 N68-28012 Structural design synthesis of recoverable tunnch irchicle structures [NASA-CR-1116] 17 p2978 N68-28335

(NASA-CR-1116) 17 p2978 N68-28335 Black Arrow X3 spacecraft structure, design and mounting of onboard equipment 17 p2976 N68-28699

Structural design of elastic bodies to minimize weight for given probability density function over structural reliability under load conditions

17 p.2981 N68-28760

Design, development, and experimental verification of atomic beam apparatus to measure optical radiation produced by collisions of ionized particles with gas molecules [NASA-CR-86062] 17 p2930 N68-28774

Structural design and living-volume requirements of orbital space stations with artificial gravity 17 p2830 N68-29129

Wind tunnel velocity profile grid design method [NPL-AERO-NOTE-1035]

17 p2875 No8-29466
Design evaluation criteria on space erectable structure concepts and flight objectives for Apollo Applications Program experiment
(NASA-CR-90350)
17 p2982 No8-29536

Systems analyses of space erectable structure concepts for Apollo Applications Program (NASA-CR-91359) 17 p.2983 N68-29537 Coupling fracture mechanics theory with fracture strength tests for fracture-safe design using high strength steels (NRL-6713) 18 p.3178 N68-30114 Modified wind tunnel tube for high Reynolds number testing of supersonic aircrafts [CAL-AD-297-A-1] 18 p.3055 N68-30172 Engineering specifications for interior noise level criteria of aircraft cabins [SEG-TR-67-37] 18 p.3002 N68-30182

Theory and design of thin walled shells, including stability of shells and plates [FTD-HT-66-571] 18 p3180 N68-30362

Design of pulse height discriminator with time compensation for neutron spectrometer

Design and construction of high speed photographic shutter for large aperture [T-35/67] 18 p3077 N68-30503

Minimum weight design of plastic circular and annular plates
[TR-18] 19 p3375 N68-31146

Black Arrow structural design and testing [SP-1986] 19 p3376 N68-31219 Structural and analytical synthesis of spatial mechanisms of landing gear with articulated leg [NASA-TT-F-11749] 19 p3377 N68-31292

Design, development, and testing lightweight radiative heat shield for maneuverable reentry vehicle [GDC-ERR-AN-1133] 19 p3577 N68-31427

Design and construction of stainless steel atomic orygen beam system for solid surface bombardment [NASA-CR-96136] 19 p3227 N68-31524 Aircraft structural design parameters based on relationship between fatigue life under constant and under variable atress amplitudes [FB-69/1966/] 19 p3377 N68-31545

[FB-69/1966/] 19 p3377 N68-31545 Intuitive structural design processes analyzed as problem solving task within framework of data processing theory of cognition [APOSR-68-1374] 19 p3285 N68-31558

| AFOSR-08-1374 | 19 p3285 N68-31558 | Design of pressure loaded hydrodynamic journal bearings | NEL-315 | 19 p3286 N68-31929

Stellar image fluctuation and error calculations for photoelectric tracking system design [RTS-4527] 20 p3436 N68-32499

Design and performance of dual-spin advanced spacecraft attitude control system 20 p3598 N68-33542

Dual-spin configuration and orbital performance of orbiting solar observatory

20 p3598 N68-33543

Design of heavy duty external hoisting system for helicopter cargo handling 21 p3622 N68-33672 [ER-4510K] 21 p3622 N68-33672 Quantitative data correlation for seaplane water takeoff and landing design technology [REPT.-7489-2] 21 p3622 N68-33675

takeoff and landing design technology (REPT.-1489-2) 21 p3622 N68-33675 Design of test stand for measuring torque of rotor operating in open-ended enclosure (D1-82-0743) 21 p3625 N68-34148

[DI-82-0743] 21 p3625 N68-34148 Design and performance prediction for small astronomical satellite [NASA-TM-X-63333] 21 p3780 N68-34496

Supersonic transport near field design concepts for plateau pressure signature to reduce sonic boom 22 p3803 N68-34911

Supersonic transport design and requirements for sonic boom reduction 22 p3803 N68-34915

Theoretical and experimental development studies for electron accelerator with collective acceleration of charged particles [IM-426] 22 p3932 N68-35664

Design criteria and development technology for rotor in radial gap potassium cooled inductor alternator [CONF-680802-3] 22 p3808 N68-35833

Development of grazing incidence vacuum ultraviolet monochromator with fixed exit slit [DESY-68/21] 22 p3879 N68-35842

Design analyses on fisation thermocouples for cryogenic temperatures [IDC-17268] 22 p3937 N68-35910 Material and design studies of self-aligning bearings

Material and design studies of self-aligning bearings for use in flight control actuators FSN-AD5-05-68-4] 23 p4067 N68-36243 Electrooptical design analysis for image enhancing

[U-4398] 23 p4061 N68-36399 Design, construction, and installation of wide angle

Levision projector [NAVTRADEVCEN-695-2, V. 1] 23 p4061 N68-36517

Engineering feasibility and economics of reusable launch vehicle systems [NASA-TM-X-53739] 23 p4176 N68-36622

Fabrication femibility and structural design of solar generators with array deployment and retraction capability

bility [NASA-CR-97208] 23 p.3994 N68-36630 Electromagnetic properties, radiative patterns, and construction of short rocket antenna [EP-92-0] 23 p4024-N68-37335

[EP-92-O] 23 p4024 Nos-37335 Development history and design modifications for attitude control subsystem of OGO [NASA-CR-86107] 23 p4178 Nos-37394

Design, construction, instrumentation, and operation of simple general purpose shock tube for use in laboratory

24 p4241 N68-37523

Design evaluation of heat source array for isotope reentry vehicle
[NASA-CR-72463] 24 p4345 N68-38170

Digital graphic integrator for calculating center of gravity and moments of inertia of structural cross sections.

[FTD-HT-23-850-67] 24 p4233 N68-38303

Calculated test times for argon shock tubes of varying diameters
[HDL-TM-68-21] 24 p4242 P68-38477

STRUCTURAL DYNAMICS
U DYNAMIC STRUCTURAL ANALYSIS

STRUCTURAL ENGINEERING

Amessment of environmental engineering and testing methods used in development of various spacecraft systems (NASA-TN-D-4181) 01 p0138 N68-10192

Engineering developments and construction of nuclear power plant in Netherlands
[EUR-3617.N] 01 p0097 N68-10951

FORMAC computer programs for symbolic formation and solution applied to structural engineering problems. [LMSC-6-77-67-25] 02 pol85 N68-11279 influence of structure and materials research on

Influence of structure and materials research on weight, performance, and cost of advanced launch vehicle systems [NASA-CR-974] 02 p0271 N68-11520

Theoretical, and engineering studies for construction of chute spillway model for flood water dams [REPT.-9] 04 p0491 N68-13815

Increased current pulse in linear electron accelerator by increased number of sections [SLAC-TRANS-76] 05 p0645 N68-14777

[SLAC-TRANS-70]
Current increase in multiple section linear electron accelerator by modified first acceleration section [SLAC-TRANS-77]
05 p0645 N64-14778
Radiation shielding potential of polymer, and

Radiation shielding potential of polymor, and lacquer coatings in reactor contamination, and safety systems

06 p0874 N68-15410

Ocean wave simulation for engineering design
[HEL-9-13] 06 p0022 N68-15569

Linear programming models for construction planning using engineer functional components system [RAC-TP-263] 07 pl 102 N68-16893 Computer calculations for structural engineering problems performance predictions, construction

Computer calculations for structural engineering problems performance prediction, construction materials, mechanical properties, and structural members [FTD-MT-66-24] 07 p1092 N66-17133

Basic design, and development principles for aircraft construction [NASA-TT-F-11415] 08 p1115 N68-18192

Deformation theory for solution of plastic buckling analysis on eccentrically stiffened circular cylindrical aerospace structure [TR-0158/5316-72/-1]

09 p1439 N68-18398
lce cap strain rate effects on engineering structures
of polar regions.
(CRREL-TR-202) 11 p1792 N68-20721
Problems and solutions of stress corrosion cracking

Problems and solutions of stress corrosion cracking of structural parts of high strength aluminum alloys

14 p2268 N68-24400

Engineering aspects of stress corrosion failures and delayed failures of high strength steels in water containing environments

Design feasibility of variable geometry structural concepts for lifting reentry vehicles

Structural and design concepts for portable shelter with solid vertical walls and roof

with uolid vertical walls and roof 16 p2786 N68-27945 Structural design synthesis of recoverable launch

vehicle structures [NASA-CR-1116] [7.3-27. 17 p2978 N68-28335

lower

SUBJ

INAS Col Mal thin waxial c

Vib fects o Tita [NAS Aco

Lun legs fo vehicle

INAS Stati

structu

stabilit [REPI Stru under analysi [FTD-Stab mickel FTD-

(SP-19

aspects

rectang

Finit (SESM Aero propos [NPL-

sional to

Extru TRAN Parar of unifo (NASA Meta tural int [CONF

Struc Apollo NASA-Wind AGAR STRUCTU Zero

STRUCTURAL FAILURE Textbook on problems and methods of determining trength of deformable materials FTD-MT-65-277] 19 p3378 N68-31626 strength of deforms [FTD-MT-65-277] iterative method for analyzing large structural systems subjected to static and thermal stresses [AFFDL-TR-67-194] 19 p3380 N68-31789 STRUCTURAL FAILURE Atomic structure and chemical composition in-fluence on grain boundaries effect on mechanical failure in polycrystalline ceramics [NASA-CR-91074] 03 p0355 N68-11944 Axial compression of circular cylindrical shells to determine effect of length on buckle pattern [SUDAAR-318] 03 p0419 N68-12042 Digital computers for prediction of instability in eccentrically stiffened cylinders under axial compression [NASA-CR-91223] 03 p0423 N68-12456 Pressure test and failure analysis for reactor pressure [WAPD-TM-640] 03 p0382 N68-12767 Design criteria and concepts for fibrous composite sterials and composite structures, and failure [NASA-CR-66518] 05 p0745 N68-13962 Acoustic emission techniques for nondestructive testing of metals (BNWL-SA-1262) 05 p0666 N68-14190 Stereophotogrammetric deformation measures on three dimensional structures 07 p1093 N68-17136 Brittle, and ductile failure of polymethyl methacry-late at elevated temperatures 10 p1541 N68-19610 Senate committee hearings on second flight of Saturn 5 - discussion of engine and structural anomalies 11 p1808 N68-21836

Fatigue test results and analysis of 42 Piston Provest wings based on load spectrum collected during service [ARC-R&M-3474] 12 p1817 N68-22873 Problems and solutions of stress of structural parts of high strength at s of stress corrosion cracking th aluminum alloys 14 p2268 N68-24400

Failure analysis of tooling boss weld in lower bulk-head of Saturn IC stage fuel tank [NASA-CR-61805] 15 p2476 N68-26849 Failure analysis of Delron inserts in 60B20217-2 heat

[NASA-CR-61809] 15 p2476 N68-26851 Tensile testing, optical and electron fractography, conductivity testing, and chemical analysis of structural failure of oxidizer tank ring baffle web [NASA-CR-61806] 15 p2476 N68-26868

Fatigue crack growth rates for characteristic plate and forging directions of pressure vessel steels [KAPL-3383] 16 p2684 N68-28131 Problems of classifying failures of machines and machine components [NASA-TM-X-60998] 17 p2894 N68-28912

Fatigue tests and analysis of piston Provost wings and programmed loading [S&T-MEMO-5/67] 18 p3179 N68-30298

Fatigue tests results and analysis of wing loading in ascending and descending order for piston Provost 18 p3179 N68-30299 S&T-MEMO-1/68]

Literature search and experimental studies on jet thrust forces caused by reactor cooling pipe fracture [AGRR-TB-14] 19 p3311 N68-31527

Strength, service life, and mechanism of failure of lastomers and polymers - problems of strength of highly clastic mate [FTD-MT-66-10] 19 p3378 N68-31566

Snapping mechanics of cylindrical panel under acoustic shock wave pressure [PB-177581T] 19 p3380 N68-31739

Estimation for two parameter family of life length distributions derived from model of fatigue crack TR-561 19 p3381 N68-31821

Futigue testing machine for determination of aircraft ructural failure due to random noise ARL/INST.-66) 19 p3259 N68-31849 (ARL/INST.-66)

Variational method for limit analysis of rotationally mmetric sandwich shells 20 p3599 N68-32258

Metallurgical failure analysis of PM-3A reactor con-trol rod lifting knob, including X ray spectrochemical and gravimetric techniques to determine materials [NRL-MEMO-1788] 20 p3532 N68-33276

STRUCTURAL FATIGUE
U FATIGUE (MATERIALS)

STRUCTURAL FOUNDATIONS
U FOUNDATIONS

STRUCTURAL INFLUENCE COEFFICIENTS

Influence area concept for predicting stresses in twin addle supported unstiffened cylindrical vessels 21 p3785 N68-33803

STRUCTURAL MATERIALS
U CONSTRUCTION MATERIALS

STRUCTURAL MEMBERS
NT ANISOTROPIC PLATES
NT ANNULAR PLATES
NT BEAMS (SUPPORTS)
NT BOX BEAMS
NT CANTILEVER BEAMS
NT CANTILEVER PLATES

CIRCULAR PLATES
COLUMNS (SUPPORTS)
CORRUGATED PLATES

CURVED BEAMS ELASTIC PLATES END PLATES FLAT PLATES GIRDER WEBS

NT I BEAMS MEMBRANE STRUCTURES

MEMBRANE SIRUCTURES
ORTHOTROPIC PLATES
PERFORATED PLATES
PLATES (STRUCTURAL MEMBERS)
POROUS PLATES
RECTANGULAR BEAMS

REINFORCED PLATES

SADDLES (SUPPORTS) SKIN (STRUCTURAL MEMBER) STRINGERS

TRUSSES

Wekling of aluminum alloys applicable to Saturn 5 structural component fabrication [NASA-TM-X-60591] 01 p0069 N68-10344

Fatigue life of notched m smooth specimen fatigue data [NAEC-ASL-1114] ed members predicted from 01 p0143 N68-10577

Analysis methods for plant tures under dynamic loading [BU/NSRDC/1-67] tic deformation of struc-02 p0275 N68-11422

Stresses in clastic media and structs tructural members 06 p0923 N68-15983 Computer calculations for structural engineering problems - performance prediction, construction materials, mechanical properties, and structural mem-

07 p1092 N68-17133 IFTD-MT-66-241

Thermophysical properties of structural materials ablators, insulations, seals, and adhesives for manner spacecraft [NASA-CR-65979] 09 p1448 N68-18488

Dynamic characteristics of plane mechanisms under ansient conditions 15 p2566 N68-25897

Vibration of viscoelastic spherical shell in acoustic medium under internal pressure [TM-646.3361-04] 19 p3377 N68-31455

Iterative method for analyzing large structural systems subjected to static and thermal stresses [AFFDL-TR-67-194] 19 p3380 N68-31789

Structural transient response calculated using characteristic method [NASA-CR-66691] 21 p3789 N68-34136

Creep theory and method of calculating creep in machine components [RTS-4610] 22 p3969 N68-34967 Taylor distribution function linear array antenna elements used to space wide band

22 p3834 N68-35197 Mechanized process for making joints using com-bined resistance spot welding and gluing of metal struc-[FTD-MT-24-252-67] 22 p3883 N68-35435

Symmetrical loading of infinite plates weakened by circular holes [FTD-HT-67-78] 23 p4181 N68-36620

STRUCTURAL RELIABILITY

Design and volumetric analysis of pressurized tar for use in liquid-methane fueled supersonic transp [NASA-TN-D-4295] 03 p0422 N68-12370 Mechanical aspects of dynamic tear test of high per-ormance structures to determine fracture toughness. stress intensity, and tear energy (NRL-1826) 07 p1090 N68-16504

Ground facilities for determining structural charac-tristics, performance capabilities, and reliability of 10 p1512 N68-19936 Measurement and analysis of Mariner type spacecraft separation transient response 14 p2364 N68-25526

Radio frequency output cera cathode structure modifications for tube life and reliability [REPT.-346-1F] 15 ceramic window and ns for improved klystron 15 p2436 N68-26473

Structural design of elastic bodies to minimize weight or given probability density function over structural flability under load conditions 17 p2981 N68-28760

Cost calculation methods for effectiveness of improved comp liability of radio electronic syste [NASA-TM-X-61022] ds for estimating economic component and structural re-18 p3045 N68-29890

Procedures for estimating reliability and confidence intervals from stress-strength relationships [MRC-TSR-814] 20 p3601 N68-32635 ationships 20 p3601 N68-32635 Guidelines for observing structural demonstrations f naval aircraft

ITM-1-681 21 p3620 N68-33643

STRUCTURAL STABILITY NT SHELL STABILITY

Linear ordinary differential equations with exponen-ial coefficients as applied to problems of structural sta-sility and wave propagation [TR-13] 01 p0084 N68-10281

Stability and resistance data for wire embedments in silver filled epoxy adhesives [SC-DR-67-425] 01 p0081 N68-10456

General theory for optimal design of elastic struc-res with maximum stiffness 01 p0143 N68-10581

Annotated bibliography of Soviet literature on struc-tural strength problems of space vehicles under condi-tions of dynamic loads [ATD-68-14-72-1] 02 p0276 N68-11472

Impedance testing for flight control system parame-rs in studies of launch vehicle dynamic stability (ASA-CR-939) 02 p0276 N68-11485 (NASA-CR-939) Edge effect theory for postcritical deformation and stability of sloping spherical segments of thin walled convex shells

02 p0278 N68-11678 Instability of thin skin cylinders in compression road-ing - ELDO launch vehicle first stage 02 p0279 N68-11834

Atomic structure and chemical composition in-fluence on grain boundaries effect on mechanical failure in polycrystalline ceramics [NASA-CR-91074] 03 p0355 N68-11944

Southwell plot application to stability test data of elastic columns and plate structures [SUDAAR-296] 03 p0421 N68-12231

Digital computer program for determining critical combinations of axial load and radial pressure in stiffened circular cylinders [NASA-CR-91224] 03 p0422 N68-12372 03 p0422 N68-12372

Stability theory for th n elastic heterogeneous anisotropic plates of variable rigidity [NASA-TT-F-11346] 05 p0747 N68-14349

Stability theorems established for static and dynamic losses in discrete, linear, elastic systems [NASA-CR-66537] 05 p0747 N68-14499 Structural integrity of cylindrical shells under high velocity axial impact [SC-CR-66-2135] 05 p0748 N68-14548

Dynamic behavior of structure and foundation of X band antenna station during operations [AD-662062] 05 p0630 N68-14555

Stress-stability analysis for eccentrically stiffened orthotropic circular cylinders with axisymmetric loads, supports, and deformations [DLR-FB-67-82] 08 p1246 N68-17489

Stability problems due to nonli vibrations - conference 08 p1248 N68-17507

Linpunov functions and other numerical methods for stability analysis 08 p1208 N68-17509

Critical buckling loads for circular cylindrical shells under axial compressi [NASA-CR-66353] 08 p1254 N68-18069 Stability of complex str crete element techniques displacement meth [AFIT-TR-67-7] 09 p1439 N68-18291

Performance, and structural durability of full scale arbofan duct burner at simulated supersonic transport [NASA-CR-54637] 09 p1414 N68-19070

Nonlinear elastic buckling strength of orthotropic 09 p1444 N68-19120 X

16

13

0

0

5

is

3

Determining wind load effects on stability of guyed radiation stability [GA-8064] [SUDAAR-329] [SP-1986] [SESM-66-22] [TRANS-1534] Parametric res of uniformly reinford [NASA-CR-97191] tural integrity of plu (CONF-670533-81 spacecraft lunar mod [NASA-CR-92331]

Plastic strains calculated in symmetrical blank forced into ellipsoidal die 10 p1606 N68-29080 05 p0669 N68-14862 Stress analysis for junction region of spherical shells th radially attached nozzles taries of regions of propported stiffened recta ic instability of with radially a [TID-24103] simply supported stif [NASA-CR-94675] guiar plate 14 n2354 N68-24439 05 p0751 N68-14901 Cold work and heat to Large defle nalysis of elastic perfectly plastic [PB-175611] 07 p1091 N68-16877 14 p2273 N68-25264 Computer program for multidirectional structural rain data evaluation Mathematical method for investigating stability of in walled cylindrical shells of infinite length under 08 p1179 N68-17690 15 p2567 N68-25999 Shear deflection under stress [VP-X-31] ation for plywood box beams Vibration analysis to determine surface pressure effects on response characteristics of Apollo structure [NASA-CR-92168] 15 p2571 N68-26706 08 p1252 N68-17693 lysis for steel steam pipes and strain 08 p1252 N68-17715 ial sink effects on creep nterstitial concentration of Titanium base interstitial ehavior, structure, and inter niobium base refractory all [NASA-CR-95189] Design and evaluation of three stress gages for mea-iring mechanical stresses on buried structures and 16 p2679 N68-27437 suring mechanical structural elements [TR-1-801] ustic test condi ons to verify structural and com-09 p1339 N68-18296 t integrity of Apollo lunar 16 p2788 N68-27998 Synergistic effects of nuclear radiation and stress on pressure vessel materials [NRL-6620] 10 p1605 N68-19978 Variational methods used in linear and nonlinear salysis of dynamic buckling, shear deformation, and bration of elastic plates and columns Nonlinear theory of elastic shells with deformation 18 p3176 N68-29928 Lunar module scale model study of use of soft side legs for improved touchdown stability of legged landing 12 p1979 N68-22984 FORTRAN computer program for plane-stress and lane-strain solutions to plates with various size circu-[NASA-TN-D-4680] 18 p3169 N68-29962 19 p3376 N68-31158 Static pressure distribution a ructural stability of flexible no: n and flutter analysis for Plastic deformation in closed cycle under strain and bending of cross section of stressed surface (RTS-4707) 20 p3606 N68-33507 18 p3177 N68-29975 Liapunovs direct method stability analysis of nonlinear [REPT.-68-2] d and linearization used in Buckling and free vibration as sandwich plates with large cutou [FTD-HT-67-343] im systems 18 p3103 N68-30015 n analyses for rectangular ts 22 p3975 N68-35926 Structural stability of clamped shallow elastic arches nder impulsive loading Literature survey an materials in liquid propel [DAC-59868-F1] act tests on tankage 18 p3181 N68-30496 Stability of hinge supported re analysis of buckling under local lo [FTD-HT-67-126] rted rectangular plates from local loads 24 p4269 N68-38171 STRUCTURAL VIBRATION NT BENDING VIBRATION NT BREATHING VIBRATION 18 p3181 N68-30556 Stability, surface hardnickel alloys exposed to m ess, aging, and weight loss of sicrocavitation in impact ero-BREATHING VIBRATION
FLUTTER
LINEAR VIBRATION
MISSILE VIBRATION
PANEL FLUTTER
SELF INDUCED VIBRATION
SUBSONIC FLUTTER
SUPERSONIC FLUTTER
TORSIONAL VIBRATION sion apparatus (FTD-HT-23-651-67) 18 p3095 N68-30669 Black Arrow structural design and and testing 19 p3376 N68-31219 d to analyze mathematical Mechanical problems used to aspects of stability theory of structure. ctures 19 p3377 N68-31446 ht vehicle resp space vehicles m noise and vibra Summary representation method of determining ectangular sandwich plate stability under complex oundary conditions using finite difference theory 19 p3378 N68-31714 (SVM-1) 93 p0420 N68-12157 t program 03 p0423 N68-12617 omputer solutions to stability of thin elastic circular adrical shells subjected to transverse bending force 19 p3380 N68-31720 Structural responses to 70, B-58, and F-104 aircr (NSBEO-2-67) m produced by XB 04 ±0588 N68-13270 Finite element analysis of linear and nonli near two capitulation of re id vibration of h ned in study of dynam-us and layered plate: 20 p3601 N68-32594 Aerodynamic investigation for 50-story tower blocks proposed for Ping Shek Estate, Hong Kong to withstand typhoon wind effects without damage to 04 p0589 N68-13384 [AFOSR-67-2368] one of correlation methods in calcu [TDCK-49420] tructural vibrations 06 p0922 N68-15672 INPL-AERO-SR-0021 21 p3676 N68-34060 to predict response of Large deflections, stability, and post buckling behavior of classic frames 08 p1247 N68-17504 22 p3968 N68-34845 Conference on finite el ructural vibration analys t method application to Large deflection and stability analysis of two dimensional trust and frame structures [AFFDL-TR-68-38] 08 p1249 N68-17516 22 p3973 N68-35488 Extrusion method for manufacturing rigid polyvinyl ite element method and application to vibration 08 p1249 N68-17517 22 p3883 N68-35615 ite element metho tangular flat plates lied to vibration analysis d structural stability model 08 p1249 N68-17518 23 p4181 N68-36592 Plate vibration analysis using finite element method ith assumed stress distribution and triangular ele-Metallographic tec for determining strucde microspheres 23 p4069 N68-36867 08 p1249 N68-17520 Structural stability analysis of Apollo S-4B forward skirt, spacecraft lunar module adapter and buckling modes of instrument unit, and er /Apollo short stack/ 23 p4182 N68-36887 g triangular finite ral vibration analysis us 08 p1249 N68-17521 Flutter analysis on buckl panels under supersonic surf [NASA-TN-D-4357] orted rectangular Wind tunnel model ch cteristics for flutter prodiction on supersonic aircraft plant [AGARD-562] 08 p1251 N68-17651 orm 24 p4193 N68-37763 of effects of non-ideal sup-al vibrations of structural STRUCTURAL STRAIN Zero shift in piezoelectric accelerometers (NRL-6596) 02 p0210 N68-11163 [USL-822] 09 p1439 N68-18275

and parallel damped (NASA-CR-93547) 09 p1444 N68-19126 Experimental study personic flutter of cor (NASA-TN-D-4321) pretical analysis on so-iffered panels 09 p1444 N68-19143 ing vibratory toa Analytical method for di es of structural parts 10 p1606 N68-20057 erch institute activities in acoustics, aerodynam-e, structural vibration, and audiology 10 p1560 N68-20242 brational effects of structural components in holo-hic system on picture quality of slow moving object (ISL-T-13/66) 10 p1560 N68-20318 Friction induced one di onal wave propagation rods NASA-TM-X-537141 10 p1608 N68-20359 cted on ESRO I satellite proto TWGLR/DGRR-PAPER-51) 10 p1609 N68-20490 Axisymmetric vibration of thin walled conical shells 10 p1609 N68-20536 Galerkin method for calculation of mode shapes of truncate lating natural frequency of conical shell with free [SAMSO-TR-68-37] 11 p1792 N68-20727 11 p1793 N68-20866 [TR-53] Response measure sound fields of variab [NASA-CR-66576] of model structures to 11 p1794 N68-20995 11 p1795 N68-21164 nalysis, control, and design of internal comi 11 p1707 N68-21273 es of 210 foot radio ance and free vibration vibration mode erved in resona 11 p1797 N68-21324 Finite element method or paracteristics of aircraft for d of analysis for vibration fuselage panel with fatigu (REPT.-27) 11 p1800 N68-21773 Ship vibration analysis by finite element technique [REPT.-107S] 12 p1974 N68-21988 meral theory for determining exceedances of tural interaction boundaries for random excitution 13 p2158 N68-23311 [ARAP-113] Approximation met vibration in spherical s [FTD-HT-23-550-67] ulating symm 13 p2164 N68-24237 eration data - dyna andling, ship load rehicle responses transpertation scale model wi [AD-667230] 14 p2360 N68-25477 Shock and vibration at data for wear 14 p2361 N68-25480 Correlation of flight ve on respe 14 p2361 N68-25482 iple shaker tests 14 p2364 N68-25510 Proposed general terms for aerodynamics and struc-tural vibrations [RAE-TM-AERO-997] 14 p2300 N68-25519 14 p2300 N68-25519 Shock and vibration and analyses - transduction analysers, structural vibr dies, and underwater aco [AD-667227] ment instrument tration, lasers, s ts, dynamic plans 14 p2367 N68-25561 er beterodyne system tions and transduces 14 p2267 N68-25562 [NASA-TM-X-53733] 15 p2565 N68-25714 Vibration analysis to fects on response charac [NASA-CR-92168] nine surface pressure ef-cs of Apollo structure 15 p2571 N68-26706 16 p2778 N68-27589

SUBMER Water gravity NASA Creeş ing anot

inflati INASA-Mann (NASA-REPT. Carbo SMRL

SUBMER

Perce

NASA-

Finger and fem higher is males NASA-SUBMILL ter and s NASA-Coher pectra ubmillio

NASA-

Theor

NASA-SUBREFL Digita NASA-SUBBOUT Multig IBM 360 [NASA-Subroition for

> Chara ECOM-Table brouti ties [NAA-S Machi P-3722

system for

Subro AERE-Debug grams, a of on line AFCRL

Compo mental p (EUR-36 FORT [CS-79]

FORT

X ray cry

Shock and vibration damping in helicopters - struc-tural vibrations and aerodynamic shock loads, mathe-matical models for prediction and control of vibrations, and vibration industry. and vibration isolators [AD-668328] 16 p2779 N68-27704 of mechanical and aerodynamical 16 p2780 N68-27705

Prediction and control of helicopter vibrations induced by blade loads 16 p2780 N68-27706

Design of isolation system for rotor induced helicopter vibrations. 16 p2780 N68-27708

Acoustic simulation of in-testing of Apollo spacecraft lation of in-flight environments used in 16 p2639 N68-27993 Principles of global vibration tests for investigating bratory behavior of structures

vibratory behavi [ARL/SM-26] 16 p2790 N68-28274 Experimental procedures for global vibration tests of

aerospace structures [ARL-SM-TRANS-27] 16 p2790 N68-28303 Analysis of the dynamic response of a mechanical structure during vibration testing 17 p2982 N68-29059 [ARL/SM-28]

Structural vibration, displacement, and resonant frequencies of radar tower during antenna operation [AD-669239] 18 p3034 N68-29830

Aircraft propeller balancing during operation to [NASA-TT-F-11411] 18 p3177 N68-29958 Rayleigh-Ritz method used to tions of isotropic cylindrical shells ed to study natural vibra-

18 p3178 N68-30159 Frequency and analysis of vibration of cylindrical shell in three dimensional flow of ideal fluid [FTD-HT-67-218] 18 p3180 N68-30438

Mathematical model of bending frequencies of nonuniform shafts applied to missile vibration analysis [TG-966] 18 p3182 N68-30691

Structural vibrations induced by pressure fluctua-tions in audio frequency range 18 p3004 N68-30822

Green function for characterizing structures and forecasting vibration effects in unstable environment 19 p3374 N68-30933

Approximate equations for propagation in cylindrical shells [TM-106.2811-05] ns for vibration and wave 19 p3375 N68-31129

Vibration of viscoelastic spherical shell in acoustic medium under internal pressure [TM-646.3361-04]

19 p3377 N68-31455 Calculated aerodynamic forces acting on vibrating thin profile in plane-parallel flow of incompressible fluid

20 p3393 N68-33265

Noise reduction in small enclosed structures in terms of physiological and psychological effects [NASA-CR-1155] 20 p3605 N68-33266

Eigen-vibration representation of transfer functions or structures by considering arbitrary excitations NASA-CR-96318] 20 p3606 N68-33523 for structures by com (NASA-CR-96318) Exposure pattern development, propagation through homogeneous atmosphere, and effects on people and

structures of sonic book [NASA-TM-X-61240] 21 p3626 N68-34432 Vibrations in turbomachinery, systems with one degree of freedom, critical rotor speed, transverse vibrations of rods, and systems with several degrees of

[FTD-HT-23-527-67] 21 p3791 N68-34649 Hydraulic flow approximation for flow induced ibration analysis on flat plate suspended in narrow

[NASA-CR-1186] 22 p3856 N68-35086 Launch vehicle vibration levels predicted by mathe-matical models derived through regression analysis of MAC-709-101

22 p3965 N68-35514 STRUCTURAL WEIGHT

Survey on minimum weight design aspects of stif-fened cylinders under compression [NASA-CR-963] 02 p0275 N68-11282

Weight analysis and inertia estimate for integrated rision of small astronomical satellite SRO-TM/P/-60} 04 p0382 N68-13398

Weight analysis and inertia estimate of large as-onomical satellite [ESRO-TM/P/-59] 04 p0582 N68-13407

Structural weight analysis and design charts on feasi-bility of applying stationkeeping concepts to passive (NASA-CR-66574) 09 p1431 N68-18812 Capability of ground based sensors to determine structural mass of orbiting artificial satellite [ESD-TR-68-157, V. 1]

17 p2854 N68-29204 Feasible weight reducing propeller systems for verti-cal takeoff aircraft [USAAVLABS-TR-68-33]

Minimum weight design of plastic circular and annu-19 p3375 N68-31146

19 p3197 N68-30964

STRUCTURES

Introduction to theory of structured categories FR-10] 04 p0531 N68-13626 [TR-10] STRUTS

Effects of ambient conditions, gravitational field, and truts on flows over ventilated hydrofoils TR-605-1] 04 p0493 N68-13202 TR-605-11 Low modulus flutter model for strut-foil-pod configurations [TR-459-2]

08 p1253 N68-17785 Hyperbolic character of experimental results with

12 p1977 N68-22363 Mean life estimates for wing strut of De Havilland incraft determined from ground-air- ground cycle oads during agricultural operationa ARL/SM-NOTE-316] 17 p2808 N68-29055 loads during agricultural [ARL/SM-NOTE-316]

Free surface effects on boundary layer separation on 23 p4043 N68-36025

Intergranular fractures in aluminum alloy struts caused by stress corrosion [NRL-MR-1894] 24 p4270 N68-38359

STRYCHNINE Caffeine, and strychnine effects on rabbits and dogs after exposure to transverse accelerations 04 p0454 N68-13190

Radiation biology in undergraduate curric 09 p1285 N68-19366

Tables for predicting student performance in avionics fundamentals course [SRM-68-15] 10 p1476 N68-20077

Lewis Explorer Post program to interest high school students in aerospace technical and professional fields [NASA-TM-X-52387] 15 p2546 N68-25935 STUDIES

INVESTIGATION

STUDS [STRUCTURAL MEMBERS]

Intergranular stress corrosion cracking of K-Monel uds during service in high temperature, high pressure stockness and pressurized water pump RCN-911 8 p.3087 N68-29661 18 p3087 N68-29661

STURM-LIOUVILLE THEORY

Norms of linear Sturm-Liouville polynomial opera-tors in connection with problems involving approxima-tion of continuous functions 06 p0865 N68-15608

STYRENES

NT POLYSTYRENE

Steric inhibition of resonance by ortho chloric atoms in styrenes and benzene carboxylic acids - ul-traviolet spectral evidence 04 p0469 N68-13526

Polymerization of styrene and related monomers in-iated by perchloric acid and carbonium salt initiators itiated by perchloric acid and carbo (AD-663644) 09 08 p1142 N68-17923

Radiation induced graft copolymerization of styrene with polyester foil and cord [INR-841/XVII/C] 69 p1356 N68-19272 09 p1356 N68-19272

Reactive species produced in polyethylene and styrene by ionizing radiation and hydrogen atoms 11 p1651 N68-21105

of thermal styrene

Cromatographic analysis polymerization reactions 14 p2209 N68-24430 Comparison between radiation and chemically induced simulation polymerization of styrene
[TID-24281] 16 p2613 N68-28081

Acid degradation ([NASA-CR-95935] n of alpha ar d beta styryl azides 19 p3226 N68-31349

SUBARCTIC REGIONS

Arctic and subarctic tectonics ch [T-487-R] 09 p1336 N68-19213

SUBASSEMBLIES

Capsule mechanical training model assembly and subsystem locations subjected to handling contamina-tion, and bioassay sampler locations [NSA-CR-94371] 12 p1829 N68-22521

Disrupted vertical laminar downflow effect on of hardware su [NASA-CR-94339] 12 p1824 N68-22522

Estimating microbial burden on capsule mechanical training model subsystem assemblies [NASA-CR-94338] 12 p1824 N68-22523

High energy solar flare proton irradiation tests of Mariner 4 subassemi [NASA-CR-95148] 16 p2631 N68-27203 SUBAUDIBLE FREQUENCIES

Low frequency sub-audio triplexer for use with ther-mal writing paper oscillograph machines [DRL-TR-68-2] 08 p1154 N68-17833

SUBCARRIER WAVES U CARRIER WAVES

SUBCIRCUITS

U CIRCUITS
U SUBASSEMBLIES

SUBCOOLING SUPERCOOLING

SUBCRITICAL FLOW

Subcritical experiments on water-uranium dioxide system enriched with 5 percent uranium 235 [EURAEC-1882] 08 pl144 N68-18143

Subcritical flow pressure distributions calculated for symmetrical airfoils at zero angle of attack [ARC-CP-993] 18 p2994 N68-29855 Symmetrical nonlifting quasielliptical airfoil sections in steady subcritical and critical potential flows [NLR-TR-68016-U] 24 p4193 N68-37811

SUBDIVISIONS

Limiting pulsed current increase proportional to umber of linear electron accelerator accions NP-17078] 05 p0642 N68-14539 [NP-17078]

SUBGRAVITY U REDUCED GRAVITY

SUBGROUPS

Quantization in Clifford space-time and problems in group theory related to determining root vectors and fundamental weights

12 p1898 N68-22179 Decomposition of irreducible unitary Lie groups into

12 p1942 N68-22940

Mathematics of lattice ordered groups
14 p2281 N68-25464 Existence theorems and transversals in set theory

and subset analysis (RM-5676-PR) 19 p3301 N68-31185 SUBLATTICES

ATTICES [MATHEMATICS] U SUBGROUPS

SUBLAYERS U SUBSTRATES

SUBLIMATION Sublimation pressure and evaporation coefficient determined for praseodymium triflouride [UCRL-17804] 05 p0621 N68-14225

Mass spectrometric analysis of sublimation and ther-modynamics of praseodynium and gadolinium sulfides [COO-1182-24] 17 p2843 N68-29234

Kinetics of sublimation of anygen gle crystals and reaction with oxygen 20 p3428 N68-32944 SUBLIMINAL STIMULI

Literature survey to obtain potential mechanisms for audio communication by subliminal means [RADC-TR-67-463] 06 p0797 N68-15147

Reduction of carbon dioxide in nuclear submarine atmospheres by increasing effectiveness of nonoethanolamine stripping operation in removal NRL-66141 06 p0788 N68-15498

High strength steel evaluation for pressure hull con-struction of deep submergence vehicle [NRL-MEMO-[843] 10 p1539 N68-20068

Coincident biomedical problems in aerospace and abmarine medical research 14 p2199 N68-24874

Design and fabrication of midfed titanium whip antennas for submarines [AD-665004] 19 p3237 N68-31266

Onboard oxygen generation equipment with minimal round support equipment and applicable to spacecraft 21 p3639 N68-34262 DEX

t on

2522

ntical

2523

ts of

7203

ther-

7833

xide

1143

d for

855

1811

l to

539

ıs in

179

940

OFV

185

225

es 234

144

for

47

ine

98

68

74

m-

SUBMERGED BODIES

Water immersion simulation study of astronaut per-formance during airlock ingress or egress at reduced

NASA-CR-971] 10 p1477 N68-20339 nalysis of acoustic scattering by Creeping wave analy instic cylindrical shells ing another fluid (NWL-TR-2128) 11 p1749 N68-21697

Inflatable tourniquet effects on cardiovascular deconditioning during bed rest and water immersion studies on humans [NASA-CR-92085] 12 p1824 N68-22529

ry in North Sea 15 p2448 N68-25733 (NASA-TT-F-11785)

Low power thermoelectric radioisotopic generator design for supplying underwater acoustic beam [REPT.-299] 17 p2816 N68-29289 Carbon dioxide retention du ring prolonged exposure to high pressure environment [SMRL-520] 21 p3637 N68-34630

Surface wave propagation over thin works inum cylinder submerged in water 22 p3913 N68-34818

Perception of oculogravic illusion in normal and byrinthine-defective subjects related to water immer-[NASA-CR-91451] 04 p0451 N68-12963 Methods for approximating dynamic response of obserged plates and shells in acoustic medium 13 p2157 N68-23090

Finger tip skin temperature measurement in male and female during immersion in cold water to isolate higher incidence of Raynauds disease in females than males

[NASA-TT-F-11790] 16 p2600 N68-28058 SUBMILLIMETER WAVES

Receiver techniques and detectors for use at millimeter and submillimeter wavelengths, and excitation cross actions for argon II, krypton II, and neon II gas lasers [NASA-CR-90040] 01 p0072 N6S-10399

Coherent radiation methods of measuring absorption spectra in planetary atmosphere, and millimeter and submillimeter wave propagation [RASA-CR-863] 16 p2618 N68-27063

Theoretical study of guided submillimeter optical waves in inhomogeneous media 21 p3729 N68-33654

ter waves in aerospace technology, with bibliography NASA-SP-1821 22 p3836 N68-35522

SUBREFLECTORS

Digital computer technique for computing scattered pattern of complex hyperboloid subreflector in Casagrain antienna feed systems (NASA-CR-90035) 01 p0027 N68-10077

Multiple precision subroutine source programs for IBM 360 [NASA-CR-89962] 01 p0035 N68-10665 Subroutines for prototype computer program defini-tion for mathematical model of approach guidance system for estimating spacecraft [NASA-CR-90331] 02 p0234 N68-11179

Characteristics and po aible uses of pushdown com-ECOM-02377-3] 03 p0325 N68-12060

Table look up procedures for computer program broutines used in determining chi-square propubili-NAA-SR-MEMO-122351 03 p0361 N68-12581

Machine independent subgraphic output [P-3722] 04 p0481 N68-12950

Computer programming for Calcomp digital incremental plotter
[EUR-3634.E] 04 p0484 N68-13678

Subroutine for computing Compton, photoelectric, pair production, and microscopic cross sections for photon-atom interaction cross sections (AERE-M-1956) 05 p0705 N68-14075

Debugging programs, graphic software, display programs, and utility routines for enhanced performance of on line medium size processor used for statistical information handling processor used for statistical information handling (AFCRL-67-0665) 06 p0812 N68-15775

FORTRAN 4 /IBM 360 O.S./ free field input/ output (CS-79) 07 p0968 N68-16257

FORTRAN computer programs and subroutines for X ray crystallography INASA-CR-931611 07 p0970 N68-16709 Operating manual for FORTRAN program to predict aerodynamic and heat transfer characteristics of annu-lar and rectangular gas turbine combustors [NASA-CR-72375] 08 p1231 N68-17556

Adaptive control theory, analog computer simula-on on iterative array computer, and floating point

toor consultres (RADC-TR-67-521, V. 2, PT. 3) 09 p1306 N68-18271

Subroutines used in computer programs for least squares adjustment of satellite observations for simul-taneous directions or ranges [NASA-CR-93424] 09 p1308 N68-18724

Computer subroutines for Jacobi matrix analyses on chemical equilibrium models [RM-5426-PR] 10 p1503 N68-19980

Subroutine for one dimensional neutron diffusions [GA-8286] 14 p2319 N68-25 14 p2319 N68-25443

Subroutine procedures for relative phase shift analy-15 p2431 N68-25783

Time sharing real time input output executive pro-rum for PDP-1 computer graphic data display system -

[AFCRL-68-0131] 15 p2432 N68-26371 Subroutines for hierarchial graphic data display in computerized design and engineering drawing - instruc-

APCRL-68-01291 15 p2432 N68-26375 Random number generator subs [D1-82-0689]

15 p2433 N68-26378 Shared subroutines in small computer multipro-15 p2434 N68-26611

M-460 computer and 340 scope display package ith subroutines for machine editing [AFCRL-68-0146] 16 p2628 N68-27125

FORTRAN subroutines for hree dimensional solid surface NASA-TM-X-1598] nes for plotting and drawing of 16 p2699 N68-28240

PAX 2 digital picture processing program written in FORTRAN - subroutine annotations [NASA-CR-95375] 16 p2666 N68-28308 16 p2666 N68-28308 FORTRAN subroutines for complete elliptic in-

INASA-CR-73245) 19 p3301 N68-31516

Arithmetic of semilogarithmic numbers and subroutines for UMC-1 computer
[INP-607/PL] 19 p3251 N68-32164 19 p3251 N68-32164

and listing for FORTRAN 4 m - A through F 20 p3391 N68-33362 orbit determination prog [NASA-CR-96356]

orbit determination program - G through Z [NASA-CR-96357] Computer subroutines for graphing and computing linear variables [LA-3877] 21 p3714 N68-34583

Subroutines for JOVIAL procedure library [FOCCPAC-TN-3] 22 p3843 N68-35462

Subroutines facilitating visual display and man archine relations on IBM 360 computer using standard operating system (NWL-TR-2135) 24 p4231 N68-37691

SUBSETS [MATHEMATICS]

SUBSONIC AIRCRAFT

Drag of large subsonic aircraft analyzed in terms of figures-of-merit derived from Melvill Jones original concept of streamline aircraft (ARA-66) 02 p0161 N68-11854

Performance calculations for subsonic aircraft tur-bofan engines [NASA-TM-X-52469] 20 p3578 N63-32900

Aerodynamic characteristics of subsonic cargo jet transport model in slotted transonic wind tunnel [NASA-TM-X-1660] 22 p3800 N68-35617

Interference of three dimensional unsteady air forces on two or more coplanar lifting surfaces represented by wing-elevator combinations in subannic flow (REPT-28) 03 p0296 N68-12039

Transition from subsonic flow to mixed flow with steady terminating shock waves - airfolls [ARC-CP-964] 03 p0298 N68-12616

Downwash angles of flow behind rectangular wings of low aspect ratio at subsonic velocities calculated ac-cording to nominear equations [RAE_LIB_TRANS-1247]

03 H0299 N68-12792

Determination of momentum thickness by equations of motion in turbulent boundary layer for subsonic flow

[ARC-CP-963] 04 p0431 N68-12912 gas around blust bodies of Subsonic flow of adiaba revolution with sharp corn

04 p0435 N68-13333 rmonically oscillating

Pressure distribution rigid wings in low subsoni [DLR-FB-67-54] Wall temperature effect thicknesses in subscuic gas ft [AD-661335] on boundary layer

04 p0496 N68-13808 03 p0648 N68-14731

[NASA-CR-61433] Laminar sebsonic flow of viscous hot gas through cooled two dimensional channel [TR-0158/3240-10/-3]

08 p1164 N68-18074

Summary and data to walled conical diffusers [FMTR-67-1] 09 p1266 N68-18471

Transition from supersonic to subsonic flow in tube at low Reynolds numbers and different stagnation pres-

11 p1683 N68-20777

Analytical theory for calculat ctions to lift distribution for u at alender bodies of revolution

12 p1810 N68-22082 as on thick cambered

aerofoil at subsonic sp (NPL-AERO-1233) 13 p1989 N68-24027 Theory of interference ments in slotted wall tun comparisons with experim [ARC-R&M-3500] ts on dynamic measure-at subconic speeds and

14 p2235 N68-24818

ndtl number effects on a boundary layer thicke-14 n2372 N68-25126

Lifting line theory from mate sions for wings in subsonic shear [FFA-114] ched asymptotic expan-flow 15 p2379 N68-25739

with swept compressor wind tunnel 16 p2585 N68-27975

Analytical investigation of flow and wall temperature sensitivity in heated passages for large inlet to exit density ratios in subsonic flow of suclear rocket [NASA-TN-D-4649] 17 p2983 N68-28371

New method for calculating two dimensional sub-mic flow on thin wing profiles with small angles of in-dence 17 p2801 N68-28450 [TIL/T-5753]

Modified approach for pred and camber shape for planforn [NASA-TN-D-4427] licting lift body pressures ns in subsonic flow 17 p2803 N68-28868

es of elliptic comes with ortex angles in subscrite to 18 p2996 N68-29979

Simple method for calculating smooth subscnic flow on thin airfoils with small angle of incidence [EE-TRANS-1684] 20 p3391 N68-32479

Effect of geometry of co drag at subsonic and transoni [NASA-TN-D-4821] ic speeds 23 p3986 N68-37054 works flowing gase-

24 p4352 N68-37496

SUBSONIC PLUTTER

Subsonic and trans tail of large multijet co [NASA-TN-D-4316] tter and flow studies of T 07 p0936 N68-17055

Subsonic lifting surfi derivatives for arrowhi [NPL-AERO-1230] ry for calculating flutter with control surfaces 10 p.1456 N68-20366

Subcritical response as [ARC-R&M-3497] ter of swept wing model 14 p2181 N68-24815 Flutter analysis and camber, and chordwise bending flutter on sweptback wings with allerons in subsonic

[F971] 16 p2777 N68-27450

Model formulation of su nic transient flutter

DOUGLAS PAPER-5059) 17 p2980 N68-28654

yais for compressible sub-linear profiles sonic flow around oscilla (REPT.-67-J-03, PT. 1) 23 p4051 N68-36984

SUBJE

Form

Sulfur-s

SULFUR

Energen/Cl [COO-

Meta

(UCRL-

SUBSONIC SPEED		SUBTRACTION	
impact pressure probes used to measure velocity profiles for rarefied subsonic gas streams [D1-82-0656] 02 p0197 N68-11087		Auxiliary direct subtractio ters	n unit for digital compu- 06 p0810 N68-15468
Aerodynamic performano	e of rotor and fan sup-	SURTROPICAL REGIONS	and the second state of
Aerodynamic performano ported aircraft at subsonic spe [TD//R//EW/305]	04 p0442 N68-13171	U TEMPERATE REGIONS U TROPICAL REGIONS	
Tandem cascade flow data cations at high subsonic speed	for turbomachinery appli-	SUCROSE	
cations at high subsonic speed [VKI-IN-15]	12 p1809 N68-21938	Piezoelectric effect in shock [UCRL-70485]	ted sucrose 02 p0259 N68-11492
Subsonic dynamic stability	characteristics of large	Metabolic carbohydra	
conical spacecraft in simulated Martian environment (NASA-TN-D-4558) 12 p1972 N68-22301		Hydrogenomonas eutropha cautotrophically	ells grown on fructose or
Flow field about an intern steady motion at subsonic sp	nally propelled vehicle in seed, analyzed by method	SUCTION	15 p2393 N68-26212
of characteristics [NASA-CR-94599]	13 p2169 N68-23607	Superexpansion thrust los	ses reduced by suction
		through perforations in diverg [DLR-FB-66-58]	ent parts
Pressure fluctuation measure blunt atmospheric entry vehic [NASA-TN-D-4591]	les 14 p2355 N68-24508	Estimated wind speeds fro	
Measurement of skin frictic		ground suction marks	
by razor blade technique [ARC-R&M-3525]	14 p2181 N68-24792	[RP-69] Vehicle in partially evacu	09 p1368 N68-18776
Subsonic and transonic sta		pressure difference	interest Activities and owner.
teristics data on 60 deg half-ar	agle cones	In the second se	16 p2751 N68-27691
[NASA-CR-95373]	16 p2586 N68-28271	Improved suction performal percavitating inducer	nce of pumps by using su-
Wind tunnel tests of roll ra Mach range from .16 to .85 [D6-20662TN]		[SP-930]	20 p3460 N68-32461
	20 p3392 N68-32612	Cavitation in suction pipe teristic curve for Kaplan turbis	aperture and its charac-
Integral theory for turbuler and supersonic speeds	nt base flows at subsonic	[TT-NEL-1959]	22 p3859 N68-35311
	20 p3463 N68-32960	Suction method for gravim	etric dust measurements
Behaviour at subsonic speed	is of Mirage 3 pitot-static	in gas streams [TRANS-1008]	22 p3861 N68-35499
probe mounted close to hybert [ARL/A-300]	24 p4195 N68-38430	SUD AVIATION AIRCRAFT	1 1 1 1 1 1 1 1
SUBSONIC WIND TUNNELS	THE SECTION AND ADDRESS.	U CONCORDE AIRCRAFT	
Sting support interference on rear fuelage and tailplane	on pressure distribution	SUDDEN ENHANCEMENT OF ATMOSPHERICS	
on rear funciage and tailplane tests	in subsonic wind tunnel	Data tables on sunspot group	ps and solar phenomena 14 m2339 N68-24695
TANK THE ASSESSMENT ASSESSMENT	04 p0436 N68-13511	SUDDEN IONOSPHERIC DIST	
Measuring aerodynamic derivatives in wind tunnels and in-flight and determining aerodynamic coefficients of aircraft by frequency response.		Polar magnetic disturbance particles in ionosphere evaluat	es and data on charged led to prove regularity of
of aircraft by frequency respon [NASA-TM-X-60930]	09 p1268 N68-19350	[NASA-CR-93794]	10 p1522 N68-20059
Experimental techniques for using low speed wind tunnels, towing tanks, water tunnels and channels, cavitation facilities, and hot-wire analysis		Statistical analysis of correlation between solar radio bursts and sudden coumic noise absorption [AFCRL-68-0100, PT. 3]	
[AGARD-338]	13 p2048 No8-23744	[AFCKL-08-0100, F1. 3]	13 p2148 N68-24301
Film cooling effectiveness w discrete orifice into turbulent	ith gas injection through boundary layer in sub-	Magnetic ionospheric distur	bances in transition zone
sonic wind tunnel [NASA-CR-54604]	19 p3384 N68-31371	[FTD-MT-24-160-67]	15 p2463 N68-26779
Subsonic wind tunnel calibr	ation of Arcasonde I-A	Ionospheric effects of solar 3	ray enhancements 17 p2880 N68-29099
atmospheric temperature sensi titudes between 35 and 56 km	ing unit at simulated ai-	Atmospheric model for ca	lculating sudden iono-
[NASA-CR-66638]	22 p3879 N68-35757	spheric frequency deviations co radio bursts	aused by solar X ray and
SUBSTITUTES	silicon chemistry	[IER-43-ITSA-43]	20 p3471 N68-32936
Substituent effects in organic SUBSTITUTION	18 p3018 N68-29677	Atmospheric motions dedu variations associated with solar	flares - extent to which
U SUBSTITUTES		time history of solar flare curre on ionospheric winds	ent systems provide data
SUBSTRATES			23 p4054 N68-36306
Behavior of adsorbates on me	etal substrates	SUGARS NT DEXTRANS	
[NASA-CR-72117] 01 p0128 N68-10686 Effect of substrate structure on deposition of		NT GLUCOSE NT MONOSACCHARIDES	
evaporated carbon [NASA-CR-91501]	04 p0527 N68-13820	NT SUCROSE	
Effects of variations in sub temperature synthesis of amino	strate contents in high	Thin layer chromatographic sugars, higher polysaccharides, [SGAE-BL-20/1967]	methods for analyses of and sugar derivatives
sors [INR-838/C]		Sugar-like products synthesis	s by gamma irradiation
Cold substrate deposition of	08 p1139 N68-17340 thin film resistors and	Sugar-like products synthesis of formaldehyde absorbed on m [NASA-CR-73180]	olecular, sieve zeolites 07 p0957 N68-16528
[NASA-CR-86044]	11 p1673 N68-21230	Condensation kinetics of form	naldehyde into sugar 14 p2210 N68-24523
Equations for determining	ng substrate surface		
coverages from arrival rates a teristics of adsorbate ions and at [NASA-TN-D-4369]	and description charac- toms 14 p2328 N68-25630	Metabolic carbohydrate Hydrogenomonas eutropha cel autotrophically	is grown on fructose or
Onticelly active achannic in	niderals and its effects	That the factor was to	15 p2393 N68-26212

NYO-3641-2]

tramport aircraft concepts [NASA-CR-986]

NT PRESSURE SUITS NT SPACE SUITS

SUITABILITY

SUITS

16 p2601 N68-28067

04 p0444 N68-13517

Chemical analysis of formate and sugar formation from formaldehyde solutions [NASA-TT-F-11709] 18 p3030 N68-30603

Economic and suitability comparison of short haul

Temperature sensing suit for skin temperature mea-[RAE-TR-67280] 21 p3639 N68-34009 SULFATES
NT AMMONIUM SULFATES
NT HYDROXYLAMINE SULFATE
NT LITHIUM SULFATES
NT MAGNESIUM SULFATES Chemical potentials and activity coefficients of octassium sulfate-copper sulfate-water and ammonium ulfate-copper sulfate-water binary solid salt solutions PA-TT-61] 01 p0027 N68-11002 potassium su sulfate-coppe [PA-TT-61] Manganese-activated and samarium-activated calci-um sulfate use in thermoluminescence dosimetry 04 p0560 N68-13696 Rediometric automatic analyses on phosphates, and sulfates in aqueous solutions
[EUR-3738.F] 09 p1293 N68-18492 Effect of sulfate reducing microorganisms on sea water corrosion of steels [NBS-9846] 19 p3294 N68-31753 Standardization of ceric sulfate solution for titration of plutonium [LA-3841] 23 p4011 N68-36763 Isotopic ratio tracer technique for identifying sulfur dioxide and sulfates 24 p4287 N68-38400 SULFIDES NT CADMIUM SULFIDES
NT CALCIUM SULFIDES
NT CARBON DISULFIDE
NT COPPER SULFIDES
NT DISULFIDES HYDROGEN SULFIDE HYDROGEN SULFIDE
LEAD SULFIDES
MOLYBDENUM DISULFIDES
POLYSULFIDES
STRONTIUM SULFIDES
ZINC SULFIDES Spectrographic analysis of antimony sulfide [BARC-311] 11 p1653 N68-21290 High pressure, high temperature synthesis of boron 13 p2022 N68-24120 Electroanalytical studies of mercuric sulfide deposits on mercury electrodes in sodium hydroxide solution 16 p2616 N68-28317 Raman spectra determined for hydrogen and deu-rium sulfide crystals in all temperature phases [R-3/28/] 23 p40 [2 N68-36906 [TR-3/28/] SULFITES Conformational equilibria of cyclic sulfites and synthesis and oxidation of thiols 18 p3019 N68-29788 SULFONATES Dinonylnaphthalene sulfonates of cesium, sodium, barium, magnesium, and zinc studies as solubilizing agents for methanol, normal propylamine, and acetic acid in toluene [NRL-6579] 02 p0174 N68-11120 02 p0174 N68-11120 Sulfonates effect on permeability of oil films to water (RIA-68-1187) 19 p3296 N68-30956 SULFONES Reaction rate analysis applied to mechanical properties of polymers [PA-TR-3629] 11 p1719 N68-21326 SULFUR Use of sulfur and aromatic nitro compounds as cathodes in liquid ammonia fuel cells [NOLC-738] 02 p0163 N68-11646

Preparation of low density sulfur for [CRREL-TR-206] 03 p 03 p0357 N68-12498 Nuclear structure, reactions, and energy levels of phosphorus 31, carbon 14, silicon 30, lithium 6, alu-minum 27, and sulfur 32 [COO-1120-68] 05 p0715 N68-14586 Calculated transition amplitudes for transitions calci-um-argon, and sulfur-tin [LYCEN-6746] 05 p0718 N68-14720 Hydration method for determination of sulfur in NSTIC/13106/67] 06 p0790 N68-15630

Data tables on thermodynamic and physical proper-ties of sulfer, selenium, tellurium, polonium, and ther compounds, based on comprehensive literature survey [PB-175628] 06 p0791 N68-15734 Measured transition probabilities for visible lines of carbon, silicon, phosphorus, and sulfur [NASA-CR-93928] 11 p1658 N68-21839 Solubility, segregation, and diffusion of sulfer in alpha-iron

12 p1832 N68-21984

painted substrates [NADC-MA-6805]

SUBSTRUCTURES

Optically active polymeric imidazole and its effects in solvolysis of estern for explanation of tereospecificity of enzyme catalysed reactions. 17 p2837 N68-28455

Effects of potassium and sodium containing sub-strates on load lives of metal film resistors [FTD-HT-67-242] 19 p3252 N68-31487

Electron microscopic analysis of pure aluminum sub-structure grains during thermal creep and pressure (3C-RR-67-2975) 12 p1892 N68-22963

Effect of sprayable, strippable protective coating on

20 p3509 N68-32525

EX

4009

s of

ons 1002

alci-

696

492

753

763

lfur

400

290

ron

120

317

106

und

788

ing

20

ter

156

26

98

of lu-

ci-

in

30

of

19

Purification and precision pelletization of sulfur for meutron & (K-1720) 12 p1838 N68-22633 Optical absorption and pl centers found in polycrys solidified from sulfur contain [NP-TR-1614] chemical behavior of S 12 p1841 N68-22958 Excited nuclear states of sulfur and argon produced by 3 to 4 MeV alpha particles ation of sulfur 35 in neutron irradiated reactor graphite semiconductor beta spectrom sulfur, calcium, thallium, and chie [CEA-R-3315] Increasing detection efficiency by using sulfur as fast [ORNL-TR-1842] X ray analysis for crystal, molecular, and chemical bonding structure of transition metal sulfur and arsenic Neutron total cross section measurements of sulfur and iron in 2 MeV vicinity [USNRDL-TR-68-50] Energy levels of chlorine using reaction S/p, gamma/Cl [COO-1120-71] Metal cutting conditions and surface qualities in high speed of [EE-TRANS-1764] Sulfur extraction from a trate by therma [BM-RI-7185] SULFUR CHLORIDES Reaction kinetics of electrophile additions to conju-gated dienes, especially addition of sulfenyl chlorides and nitroso compounds Cleavage and chemical bonds of sulfur-halogen and sulfur-sulfur compounds
[AROD-4040-2-C] 21 p3652 N68.34442 SULFUR COMPOUNDS

NT AMMONIUM SULFATES

NT CADMIUM SULFIDES

NT CALCIUM SULFIDES NTNT CARBON DISULFIDE COPPER SULFIDES DISULFIDES HYDROGEN SULFIDE NT HYDROXYLAMINE SULFATE LEAD SULFIDES NT LITHIUM SULFATES MAGNESIUM SULFATES MOLYBDENUM DISULFIDES NTNT POLYSULFIDES STRONTIUM SULFIDES NTNT SULFATES SUIL FITTES SULFONATES MINT SULFURIC ACID NT THIOLS NT ZINC SULFIDES Conformational deper between sulfur-containing tron system determined by Analytical applications of and phosphorodithioic acids [IS-T-144] Elution order of aligi fonic resins by ammonia [COO-499-16]

nitrogen, phosphorus, or sulfur [AFOSR-68-0343]

Optical, electrical, and ma ranganese sulfide electron er

Spectrum analysis of nitroge

12 p1933 N68-22663

Increused luminous am

(UCRL-TRANS-10205)

13 p2119 N68-23751 13 p2024 N68-24288 14 p2259 N68-25390 15 p2414 N68-26302 18 p3021 N68-29941 18 p3029 N68-30533 19 p3334 N68-31744 d sulfur additions for high 20 p3486 N68-32548 denite flotation concen-22 p3822 N68-35094 17 p2846 N68-29433 e of change effect ps and adjacent pi elec-troanalysis 02 p0179 N68-11899 03 p0311 N68-12166 ines from nickel sul-05 p0623 N68-14424 Infrared and nuclear magni-entafluorosulfur carbonyl flu-uoroformate, and pentafluoro tic resonant apectra of ride, pentaffuorosulfur pentafiuorosulfur peroxofiuorofor-

Potential applications of group 2 to group 6 com-13 p2138 N68-23942 Ring structure of organic sulf r compounds 15 u2405 N68-26027 tions of trifluor I slkvl-15 p2407 N68-26032 from sulfurous gases and ectric power stations 16 p2651 N68-27051 ee of oxygen over three phase mixture uranium conceulfide, uranium oxygulfide, and uranium diox-es at high temperatures 17 p2837 N68-28453 trical properties of syntheti-silver antimony sulfide 18 p3155 N68-30823 nodynamic property data tables for CHNOPS ands and heats of combustion and formation for compounds of biological interest. organic compounds [NASA-CR-96468] 20 p3432 N68-33427 21 p3651 N68-34310 ids of sulfur-halogen and Cleavage and chem sulfur-sulfur compour (AROD-4040-2-C) 21 p3652 N68-34452 Shock front irregularities in cold gas shock tube using sulfur hexafluoride as driven gas [SCL-DR-67-88] 05 p0647 N68-14344 Chemical and phy tetrafluoride [CEA-BIB-98] properties of sulfur 12 p1839 N68-22771 sulfuryl difluoride and ed at low temperatures 24 p4212 N68-37621 Infrared spectra of peroxydicarbon dioxide thin films obtain SULFUR OXIDES Nuclear magnetic resons dimethyl sulfoxide comp ganese, iron, nickel, and co um and nickel perchlorates [NRL-6597, PT. 1] ance and infrared spectra of dexes of chromium, man-opper nitrates, and magnesi-08 p1145 N68-18171 ing molecular com 11 p1645 N68-20708 ility of detecting sulfur dioxide in earth at-e from orbital altitudes mosphere from orbit [NASA-CR-92064] 12 p1865 N68-21948 Absorption of sulfur dioxide sulfite solution in spray-type v oxide by ammonium sulfite-ype venturi scrubber 19 p3228 N68-31643 se for identifying suffer 24 p4287 N68-38400 SULFURIC ACID ound robin potentiostatic anodic polarization test gram for pure nickel in hydrogen saturated sulfuric [AFIT-TR-67-6] 08 p1187 N68-17906 Motecular structure of perchlori [UCRL-17915] ric and sulfuric acids 11 p1649 N68-21006 Dilute sulfuric-acid leach for extracting lead and copper from lead blast furnace mattes [BM-RI-7126] 11 p1653 N68-21296 m-alloy castings dur-11 p1716 N68-21432 Kinetic study of de in acid o hydrogen perosi [CEA-R-J168] 12 p1840 N68-22904 of anhydrous sulfuric 13 p2021 N68-24077 Corrosion rates a chavior of nickel, in-aric acid and general electrochemichal iron, and nickel iron alloys in sul-16 p2610 N68-27782 06 p0792 N68-15815 Peroxides, hydrogen, oxygen ated water, cerium, and n metals containing DOC.-LFEN-75 19 p3234 N68-32096 11 p1646 N68-20775 [RTS-4362] with sulfuric acid 20 p3420 N68-32577 netic properties of alpha rrgy band structure 11 p1771 N68-21045 ste nitric, sulfuric, and perchloric pectrophotometry up to 250 deg 11 p1650 N68-21054 [ORNL-4279] 24 p4210 N68-37440 SUM BULES Gust velocity calculations from aircraft vertical ac-

Finite energy sum rule derived from unitarity, nalyticity, Regge asymptotic behavior, and resonance [UCRL-18232] 20 p3549 N6E-33251 MMARIES NT ABSTRACTS 01 p0086 N68-10045 in Antarctica 04 p0504 N68-13731 [AD-661183] [NASA-SP-138] 05 p0740 N68-14941 U.S.S.R. of bro 16 p2621 N68-27294 t of antennas for use in ny, and radio communicasary of development 16 p2621 N68-27299 Summaries of solid sta aductor devices research (ESD-TR-68-17) Summary of stud nucleon transport the [NASA-CR-83623] te Carlo method for matter 16 p2722 N68-27561 mis, constraints, and Summary of designs references for Mars ha [NASA-CR-66678-1] study system 22 p3966 N68-35980 orting research and Space Programs & Ivanced developme [NASA-CR-97170] 23 p4042 N68-37397 wind fields in lower [AFCRL-67-0601] 08 p1197 N68-17766 World conto [AFCRL-68-0098] 13 p2063 N68-24043 Circulation model of or mulus clouds and summer [MW-50] tive overturning in cu-20 p3519 N68-32488 Arctic mesosphere dur ing the summer (ECOM-5181) 22 p3905 N68-35376 neavy summer aqualla i measurementa 23 p4094 N68-36427 Generalization of sum rules for quantum mechanic by direct application of closure relations for eigenstate of hermitian operators 01 p0104 N68-10296 Conditions for covariance of equal time comm tors and sum rules 01 p0106 N68-10427 m rules for inelastic electron scattering from IINP-566/PL1 03 p0389 N68-12373 Current algebra for determining subtraction con-tants of two body decay modes, and generalization of Weinberg sum rules UR-875-2141 05 p0707 N68-14133 Dispersion sum rules in theory of strong interactions (JINR-E2-3511) 05 p0714 N68-14495 Sums of squares of or (P-3744) e odd integers 06 p0866 N68-15772 Spectral function sum rules for symmetric tens (TUEP-67-29) 07 p1052 N68-16902 th zeros of Dirichlet L-se-09 p1362 N68-18639 as applied to numerical 09 p1362 N68-18641 IC-67-19] 10 p1570 N68-20438 d for numerical soluti value problems on p 11 p1727 N68-20904 rules in strong intera (FTF-67-13) 11 p1754 N68-21140 ed from current algebra, and asymptotic beliavior PADOVAU-LA-11 11 p1731 N68-21456 e of equal time com 12 p1923 N68-22193 20 p3523 N68-32941

Torq in vario (NRL-

Field

Cryo

Supe

NOLT

Crys

Fur i

Strai

Effe

UCRI

Thei proper condu-therma

LNF-

Non films v

CONDU

Sup

COMP

Tur

[WAS

Tra

Effe

tempe

Sup electr (ARC

Los ductin weigh

BC

Tru

in typ

Me

Cri

Mi

body [PEL

[NAS

INYO-

SUNSPOT CYCLE Sum rules for varia (NASA-CR-94597) riational wave fo 12 p1917 N68-22416 Twenty-seven-day recurrence tendency in geomag-etic activity deduced from daily character figures C8 Cross section sum rules test for nucleon magnetic m 1884-19 [REPT.-22/1965] [JINR-E2-3715] 15 p2520 N68-26448 06 p0834 N68-15363 Solar sunspot cycle of proton shower predictions es for large deviations of ervations for high energy 16 p2697 N68-27761 10 p1553 N68-20568 Temporal variations of magnetic fields during evelopment and disappearance of sumpots in active rergence sum rules for development solar regions [RTS-4239] scattering a [IC-67-47] 18 p3129 N68-29842 20 p3586 N68-32654 Convergence of su (AFOSR-68-1072) m statistical variables 18 p3105 N68-30411 Influence of 11-year solar cycle on atmospheric cirms of finite differe for functions defined by 20 p3476 N68-33574 [M-7116] [APL-TG-230-T553] 18 p3107 N68-30558 SUNSPOTS Solar radio noise and optical st (AFCRL-67-0508) ed to high multiplicity processes 18 p3139 N68-30808 unspot phenomena 01 p0130 N68-10352 Satz sum rules app [INR-P-881/VI/PH] Sum rules for spectral functi fields obtained from hypothese for solar zonal and tions of vector and axial ses on vacuum values of Energy transport analy n mod meridional rotatio [UCRL-50224] nspots 03 p0415 N68-12433 ator on cone [IC-68-61] 23 p4126 N68-36990 Comparative data on harn seven day coamic ray neutr variations and sunspot number ic analyses of twenty KN total cross section rules (IC-68-66) 23 p4128 N68-37028 06 p0901 N68-15058 Stellar physics and sunspots, solar winds and flares, planetary emissions, and other astronomical research in U.S.S.R. SUN Inversion problem in stellar atmospheres, and mathe-matical model for analyzing solar limb darkening 08 p1242 N68-18101 09 p1424 N68-19168 Radio brightness temperature and sunspot size ob-rvations statistically analyzed for solar flare predic-Critical comparison of hypotheses concerning ex-tence of solar quadrapole [P-3816] 13 p2152 N68-23955 [APCRL-67-0670] 13 p2147 N68-23858 Drift rates and adiabatic gr charged particle in idealized fields uiding center motion of interplanetary magnetic Balance of magnetic fluxes in su unspot groups 13 p2147 N68-23967 15 p2549 N68-25755 [NASA-TM-X-63230] Data tables on sunspot group and solar phenomena 14 p2339 N68-24695 Tabular and graphical data geometry and dynamics of earth-moon-sun system for 1966-1985 time period [NASA-CR-95577] 17 p2968 N68-28821 Evershed effect for velocity fields in sunspots measured from spectral line profiles of penumbral regions 15 p2559 N68-26014 Astronomical studies in U.S.S.R. - radio emission from Venus, solar mass effect on radiation pressure, chondrite structure, Arend-Roland comet, and stellar Brightness distribution of local source over sunsp group during solar eclipse [NASA-CR-95697] 17 p2972 N68-29380 19 p3370 N68-32058 Velocity field peculiarities /Evershed effect/ in single Effect of sun mass changes corpuscular radiation pressure n electromagnetic and (RTS-4112) 20 p3586 N68-32653 19 p3362 N68-32060 ce effects on radial velocity and stosphere and chromosphere 20 p3586 N68-32794 Sunspot appearance of magnetic fields of photospi [RTS-4242] er flu 20 p3584 N68-32302 (RTS-4244) Computation of solar elevation angles and deter-ination of sunrise and sunset times as function of Observations of solar brightness distribution at 14.50 minution of sunrise and su latitude, longitude, and date [NASA-TM-X-1646] INRL-66921 20 p3587 N68-32801 22 p3868 N68-35179 Magnetic field and gas velocity in sunspots at dif-ferent levels - Evershed effect in a complex sunspot L-band and S-band telemetry receiver calibration using sun as signal source [TR-0158/\$3816-88/-2] RTS-42431 20 m3587 N68-32928 22 p3837 N68-35571 Magnetic field strength a apots and pores [RTS-4241] SUN SENSORS U SOLAR SENSORS 20 p3588 N68-32929 d interpretation of solar phenomena 61 22 p3957 N68-35889 SUNLIGHT Observation and i [AFCRL-68-0316] Time in sunlight of artificial earth satellite with ellip-Tables and graphs of solar phenomena observed by Rome, Italy, observatory during Sept. 1968 24 p4339 N68-38007 [NASA-CR-90059] 01 p0136 N68-10900 Tiros 4 low resolution radiometric data and surface diation measurements for calculating reflectance and sorption of sunlight over United States - Spring, 1962

SUPER SABRE AIRCRAFT U F- 100 AIRCRAFT

SUPERALLOYS U HEAT RESISTANT ALLOYS

SUPERCAVITATING FLOW

Linearized theory on superc constant pressure cambered bla [NASA-CR-90426] cavitating cascades with 02 p0200 N68-11631 Cavitation performance a of variable pitch supercavita [NSRDC-1636] e and open water evaluation ng propeller 03 p0334 N68-11972 ns, gravitational field, and hydrofoils 04 p0493 N68-13202 Effects of amb struts on flows over ventilated i [TR-605-1]

Scale ratio, aspect ratio, and planform influence on performance of supercavitating hydrofolis [NSRDC-2390] 04 p0495 N68-13315 ent for oscillating.

Normal force and pito opercavitating hydrofoil 10 p1456 N68-20147 ce of pumps by using su-

Improved suction performs percavitating inducer [SP-930] 20 p3460 N68-32461 U SUPERCAVITATION
U SUPERCAVITATING FLOW

SUPERCHARGERS

Unvaned diffuser centrifugal superchi [FTD-HT-66-767] m width for single stage argers 02 p0158 N68-11653 SUPERCHARG ERCHARGING SUPERCHARGERS

SUPERCONDUCTING MAGNETS

Lightweight, superconducti loon-carried cosmic ray exper [UCRL-70285, REV. 1] cting magnet system for bal-

03 p0412 N68-12340 High field pulsed at proton synchrotrons [BNL-11761] perconducting magnets for 03 p0385 N68-12546 Operational analysis on direct current flux pump ith superconducting transformer [CEA-R-3249] 03 p0385 N68-12764

Design and operation inducting magnet consubble chamber with super-ng hydrogen, deuterium, or [SLAC-TRANS-72] 05 p0641 N68-14050

Design of large hydrogen net coil for testing supercon bble chamber with magting strips 05 p0642 N68-14288

conducting gravi ter and its applications to 05 p0662 N68-14452

reconducting films, and lated flux flow in supe 05 p0728 N68-14468

Partially stable compo [RE-318J] erconducting solenoid 07 p1036 N68-16666 Perform s of superconducting multistage acc [BNL-12060] 12 p1855 N68-22570

Critical surface between mai state determined for co ribbon and Nb-Zr wire [NASA-TM-X-52319] reconducting and nor-reial niobium stannide 15 p2537 N68-26247

netism, and low tempera-craft power equipment and Superconductivity, m tures in relation to spa-[FTD-MT-24-109-67] 15 p2542 N68-26666

Alternating current loss in containing niobium-titanium (UCRL-18176) perconducting magnets 18 p3155 N68-30648 Superconducting coils for plasma physics experi-

20 p3552 N68-32279 [IPP-4/60] Proposed high altitude or ic ray experiments using

superconducting magnet [NASA-TM-X-61255] 22 p3956 N68-35210 Magnetic field of levitated superconducting quadru-

IPP-2/67] 24 p4304 N68-38489

SUPERCONDUCTIVITY

Field modulation studies of ect in apherical nickel crystals dies of de Hass-Van Alphen effect in sphe [IS-T-169] 01 p0123 N68-10471 Estimated differences bets n correlation functions in theory of superconductivity 01 p0124 N68-10631

Laser detector utilizing photodielectric effect in cooled semiconductors applied in communication system [AFOSR-67-2138] 02 p0257 N68-11127

Frequency sweep tech es for O measurement of [BNL-11702] 02 p0240 N68-11616

ng properties of refractory ps 4A and 5A elements 03 p0408 N68-12413 Anomalous su carbides and nitr [LA-DC-8022] s supercond Optical diffraction ructures of current a ds of determining vortex metic field distributions in

[Al-TRANS-258] 03 p0408 N68-12493 Superconductivity at room [FOA-4-4306-61] 05 p0726 N68-14051

Superconducting linear conductivity at low temp ear accelerator and use of super-emperatures in physics experi-05 p0701 N68-14448

Fluxflow and direct current transi both resistive and superconductive formers that are 05 p0701 N68-14467

itions to superconducium-tin system 07 p1070 N68-17027

Hot press processing of niobium, tin, and carbon owders to determine effects of microstructure on su-erconductive properties of niobium stannide in niobi-08 p1222 N68-17285

STINBISE

Lunar topographic changes and relation to sunrise, econogenetic tail, and tides

Feasibility of detecting sulfur dioxide in earth atmosphere from orbital altitudes [NASA-CR-92064] 12 p1865 N68-21948

Environmental tests of a galvanometer movement for use as a sunlight shutter in space applications [R 4E-TR-67260] 18 p3072 N68-29742

Finnish sunshine recorder compared with interna-tional standard instrument

Intensity of sunlight scattered

08 p1236 N68-17354

04 p0497 N68-12819

by earth dust cloud 16 p2764 N68-27517

19 p3278 N68-31497

rise beating of at electrons in iono 16 p2656 N68-27869 sphere due to conjugate pe [NASA-CR-83671]

Computation of solar eleva-sination of sunrise and suns ration angles and deter-set times as function of latitude, longitude, an [NASA-TM-X-1646] 22 p3868 N68-35179

A-1230

EX

653

340

546

mp

150

..

98

52

Torques on superconducting lead toroids immersed various uniform fields 09 p1380 N68-18438 [NP-17482] [NRL-6618] Field analysis of a ducting solenoid magnet mmary information on va na theory, plasma physic uctivity, and high curre using nuclear magnetic resonance [NYO-2150-36] 09 p1407 N68-18567 with high field superconand injection [ORNL-4238] Cryo-electron micro ducting lenses [NASA-CR-76630] 09 p1384 N68-19221 Calculating magnetic field penetration predicted by energy gap theory and theory of superconductivity 20 p3560 N68-32260 Superconductivity of disordered tin and lead films formed by vapor deposition at low temperature [NOLTR-67-168] 10 p1578 N68-20062 Crystal physics, deformation and annuealing of netals, crystalline solids, diffusion in solids, electron sicroscopy, ceramics research, lonic media, supercon-activity, surface reactions [JINR-P2-3819] 10 p1581 N68-20427 Superconducting properties of transition metal car-bides and nitrides [AFOSR-68-0265] 20 p3574 N68-33367 Far infrared absorption in superconducting niobium 11 p1767 N68-20709 Strain induced shifts in gap and phonon structure of superconducting lead insulator lead tunneling junctions between 1.5 and 4.2 deg K Magnetic flux flow a niobium titanium strips [NASA-CR-96610] 11 p1769 N68-20755 Torsion pendulum measurement of energy dissipa-tion due to motion of magnetic flux through supercon-ducting indium strips and films Effect of ternary addition on superconducting pro-[UCRL-17982] 11 p1771 N68-20930 Thermal diffusivity measurement, thermoelectric proporties of graphite alloys and compounds, super-conductivity in tungsten films, and gas nump based on thermal transpiration 11 p1802 N68-21036 Superconductive solenoids in intense magnetic fields and chlorination, diffusion and sintering techniques for production of niobium tin [LNF-687] Nuclear magnetic resonance in normal and super-orducting states of intermetallic compounds 11 p1657 N68-21693 Nonlinear microwave effects in superconducting films with respect to rectangular waveguides with thin conducting film [UTEC-MD-68-029] 13 p2134 N68-23557 Superconduction thin films, an plications of Josephson effect at ra [NASA-CR-1189] 2 Superconductivity, magnetism, and low tempera-tures in relation to spacecraft power equipment and computer data storage [FTD-MT-24-109-67] 15 p2542 N68-26666 Ultrasonic attenuation in talum crystals at supercond [NASA-TN-D-4806] Superconductivity in quark model and Regge trajec-Tunneling into supercor rs in magnetic field 16 p2741 N68-27140 [JENR-P2-3802] Superconductivity for high energy physics and controlled thermonuclear research programs
[WASH-1081] 16 p2741 N68-27198 Microwave nonlinearity of supercon-Transient electroacoustic phenomena in cadmium 17 p2955 N68-28549 ducting linear accelera (SU-SLAC-PUB-438) Effect of isotopic mass on superconducting transition imperature of zinc 18 p3148 N68-29586 18 p3148 N68-29587 Superconductivity in systems of varying conduction electron density such as semiconductors [AROD-5171-5-P] 18 p3149 N68-29609 Low temperature control for operation of supercon-ucting systems under orbital flight conditions, such as Potential application of superconductive magnets to ectromagnetic suspension of high speed ground trans-18 p3170 N68-30064 electromagnetic suspension port vehicles [TRW-06818-6009-R000] BCS theory and quantum mechanics studied in e-tending zero sound and superconductivity to man-body problems. [PEL-19] 18 p3154 N68-3034 18 p3154 N68-30342 uxoid quantization in superconducting vanadiu w cylinders at cryogenic temperature transition ansition temperature, critical field behavior, and e diagrams for superconducting cylinders 19 p3347 N68-30912 Superconductivity of fused samples of binary systems Nb-Sn, Nb-Ai, Nb-Ga, V-Si, and V-Ga [CONF-640310-1] 23 p4154 N68-36885 Greens function equations for superconductivity used to study internal properties of Abrikosov fluxoids in type 2 superconductors 19 p3347 N68-30921 Superconducting transition temperatures of thin Microwave phonon a onducting aluminum m in normal and super-(BNL-11901) 19 p3348 N68-30939 SUPERCONDUCTORS Stability and spatially periodic magnetization of hard uperconductors te of millimeter wave ab-ting aluminum 19 p3348 N68-30940 Magnetic field depende orption in bulk superconde [MIT-3700-6] ngsten boride isotope ef-lition temperatures 19 p3350 N68-30987 Superconducting hollow cylinder application to magnetic lens in electron-optic imaging system [UCRL-TRANS-1348] 01 p0099 N68-10549 Molybdenum boride and to fects on superconducting tran Superconducting thin films of tin and indium used in nuclear particle detactors
[AI-67-74] 01 p0064 N68-10587 cting aluminum as func-re above 0.3 deg K 19 p3350 N68-31024 Critical field of su Critical field of superconductir tion of pressure and temperature a Macrovertices and transient stability in hard super-conductors [MIT-3700-5] OI p0126 Mes 1000-Mathematical models for phas tum plasmas, white dwarfs, and el [AFCRL-68-0209] ne transitions in quan-fectron gas densities 19 p3329 N68-31319

Magnetization studied as function magnetic field for perconducting films Superconducting thin film, nuclear particle detector (NDL-TR-93) 02 p0209 N68-11117 19 p3356 N68-31967 Spatial variations of order parameters in superconscitors containing magnetic impurities 03 p0404 N68-12007 Current stability criteria in composite /normal plus superconducting/conductors [IAE-1208] 19 p3345 N68-32090 Thin film development for superconducting com ORO-2430-40] 03 p0409 N68-12590 inductivity in degenerate semiconducting tin Magnetic, thermal, and tra-rents in wires of type 2 superco [USC-113P-16-3] 20 p3561 N68-32306 ductors 03 p0409 N68-12702 Quark model superconductivity and nucleon Symposium on superconductin sephnon junctions, current tra m and interference devices ting devices dealing with transformers, amplifica-es, and measurement 20 p3547 N68-33064 AD-6618481 05 p0701 N68-14447 Current magnetometer with requit and thermally switched r d stability of superconducting nadulator 05 p0662 N68-14449 21 p3752 N68-33627 reconductors for use in high-Q microwave cavi-05 p0701 N68-14450 21 p3753 N68-33861 scopic quantization of illator-detector 05 p0635 N68-14453 Superconductivity in alloys in relation to electronic onfiguration of metals 21 p3754 N68-34181 cting Jacop Current fluctuations in superinnel junctions Low temperature research reports on tin - effects of npurities, superconductivity, thermal effects, and amport and electrical properties 05 p0636 N68-14454 Current fluctuations in thin round hollow cylinder, uperconducting ring with Josephson junction, and de-iased Josephson junction 21 p3756 N68-34569 ion data for supercon-magnetic field 22 p3948 N68-35006 05 m0727 N68-14455 Josephson junctions for far infrared detector that can go beyond superconducting energy gap Magnetic behavior of superconducting tubes during ansilion period 03 p0636 N68-14456 22 p3949 N68-35013 Tin tunnel diodes evaporated on supplier single crystal for quantum generation and detection of phonons in superconductors and properties and ap-tradio frequencies 22 p3949 N68-35178 05 n0728 N68-14457 Attainment of zero magnetic field in superconduct-ing lead shell easurements on single tan-cting state 22 p3950 N68-35356 05 p0701 N68-14462 Microwave mixing in weakly coupled superconduc-tors and stepwise computerized determination of self-consistent sets of Fourier components of current 05 p0636 N68-14463 22 p3934 N68-35799 active thin Superconducting parametric amplifier to measure all dc voltages in low impedance circuits 05 p0636 N68-14465 22 p3952 N68-35890 for two-mile supercon-Superconducting interference device, or SQUID, to study flux creep in superconductors and measure magnetic field changes 22 p3919 N68-35931 longitudinal acoustic 05 p0662 N68-14469 23 p4145 N68-36030 transformer concept, and sous current modes 05 p0703 N68-14822 Wound superconductor tran functional analysis of continuous [CEA-R-3242] ed electrons of negligible and sound waves 23 p4148 N68-36168 es of superconductors, and measurements of surface agnetic fields of supercon-CEA-R-32431 06 p0770 N68-15938 23 p4149 N68-36245 ns and critical currents ce sheath 07 p1066 N62-16497 Alternating current transition type 2 superconducting surfit [NYO-3029-13] Energy expansions of 200 GeV accelerator to 400 GeV by adding superconducting synchrotron [UCRL-17862] 07 p0982 N68-16648 23 p4149 N68-36247 ement using this film Absolute photon to superconducting belo [NASA-CR-93 [52] GR p1176 N68-17396 23 p4153 N68-36746 Relaxation of super effects of electron-pho (AD-663463) or order parameter and ractions -08 p1223 N66-17657 Anomaly in ultrasonic atte and impure superconductors [AD-663465] tion in strong coupling 08 p1224 N68-17658 23 p4155 N68-37019 Cryogenic fluids for food preservation, coolers, perconductive devices, and spacecraft power suppli [TR-0158/3710-01/-1] 09 p1381 N68-18446 01 p0122 N68-10171 uctors from normal to IRR-2911 09 p1408 N68-18965 Electrical, and calorime nating current loss in ni titanium, and niobium stan [NASA-CR-61654] measurements on alter-um zirconium, niobium 09 p1410 N68-19140

lio frequency losses 09 p1411 N68-19291

is for investigating pair potential ions associated with normal su-10 p1580 N68-20219 Nuclear and solid state phys and solid state physics conference on elec-agnetic resonance and nuclear magnetic spectra, superconductors, thin films, and ice spe 10 p1581 N68-20501

Linear and bilin near electrodynamics of metal super-10 p1582 N68-20503

Thin film superconduct sonance and Mossbauer and nuclear magnetic 10 p1582 N68-20504

Orbital paramagnetism in surrature dependence of electro luctors, and temspin 10 p1583 N68-20508

quantum interference device capa-nges in strong magnetic fields 12 p1957 N68-22831 ble or resolving chi (NYO-3029-23)

Proximity effects between setals studied by tunneling tech en superconductors and 12 p1957 N68-22902 Solid state physics research - magnetic phenomena [NYO-2150-40] 12 p1958 N68-22976

Fast liberation of stored energy using superconduc-12 p1821 N68-22983 ICEA-R-32551

Application of axial fields for threshold enhance-ment of induced and conduction currents on niobium-airconium wire in transverse fields [TR-0158/9230-01/-1]

13 p2137 N68-23879 New metallurgical developm perconducting metals nts and significance on

13 p2138 N68-23940 behavior of vacuum lean and dirty tin films 15 p2537 N68-26109 Critical magnetic field by apporated superconducting clean

15 p2537 N68-26117 mance of superconduc-Flux flow and stabi (ORNL-TM-2162)

15 p2543 N68-26674 Magnetometers for measure produced by low field superco [NASA-CR-1073] ng atable magnetic fields nelucting shields 15 p2470 N68-26703

Tin particle size effects on nuclear magnetic sonance and Knight shift in superconductors 16 p2742 N68-27217

Superconducting test coil cooled by helium vapor forced circulation [CERN-68-17] 17 p2867 N68-28468

Electronic thermal conductivity and magnetization of type 2 superconductors in gapless region 17 p2954 N68-28481

untive transitions and critical current curve alies related to critical fields and defects or in-geneity of indium-lead superconductors 2007 Mes. 2007

erconductors 17 p2957 N68-28693 Critical temperature and current densities for super-orducting niobium-titanium alloys

(ANL-TRANS-598) 17 p2939 N68-29116 Optimum supercor devices applied to extra [NASA-CR-66653] thin film tunneling gh frequencies 17 p2960 N68-29425

Longitudinal ultra coupling superconduc [AD-669498] attenuation of strong 18 p3149 N68-29676

naburg-Landau free energy used to study trapped etic flux interactions in superconductors 18 p3150 N68-29794 Energy storage and extraction with superconducting

18 p3150 N68-29828 Tunneling characteristics in tin-tin oxide-tin junc-

[TR-0158/9230-01/-2] 18 p3155 N68-30835

stion of superconductors in nuclear reactions, nearch, radio electronics, and computer [FTD-MT-67-20] 18 p3156 N68-30836

Strain effects on superconducting transition tem-erature of vacuum deposited thin indium film 19 p3346 N68-30909 Greens function equations for superconductivity used to study internal properties of Abrikosov fluxoids in type 2 superconductors

19 p3347 N68-30921

Magnetization measurement curves of high purity obium alloy superconductors 19 p3349 N68-30982

ucting cadmium, Electron tunneling in supercon uminates, and aluminum junctions 20 p3561 N68-32275

Classification of flux line lattice defects of type 2 su-erconductors 20 p3563 N68-32406

Stability theory for superconductor carrying tram-port current in resistive mode [RR-290] 20 p3576 N68-33513

Correlation function calculations for wind field at 500 mb

20 p3576 N68-33521 Critical field behavior of superconducting thin films of lead, tin, and indium quenched on substrates at low

COO-1054-411 21 p3757 N68-34741 Properties of single particle excitations in supercon-uctors applied to tunneling processes [R-24] 22 p3949 N68-35078

(TR-24) Resonance scattering effects and superconducting properties of nonmagnetic alloys of simple metals with transition metal impurities

23 p4146 N68-36063 Proximity effect and electromagnetic response of lean normal-superconducting system 23 p4147 N68-36065

Calorimetric study of effects of interphase surface free energy on ellipsoidal samples of superconductors 23 p4147 N68-36082

Electric properties of lead pressure contacts used in gh-current superconducting switches INRL-67261 23 p4151 N68-36559

Mathematical models for steady state behavior of imposite superconductors and experimental verifica-

tion using magnet co [NASA-CR-98030] 23 p4110 N68-37283 Theoretical and exportage and transfer rtohydrodynamics perimental studies of energy in cryogenics and mag-[UAPL-31]

23 p4110 N68-37342 Guidance and control research - losephson junction semory elements, frequency response of thin film ther-all detectors, gallium selenide barrier gate, and hotoconductor metal contacts

23 p4099 N68-37404 Electron paramagnetic resonance analysis of radia-tion effects in alkali metal halides, phosphorus, and su-

COO-1054-321 24 p4333 N68-38080 SUPERCOOLING

fon detection in supercooled liquids for calculating probability of crystal production on ions as nuclei [JINR-P1-3360] 01 p0151 N68-10476

Initiation and early development of subcooled void rofiles of low pressure boiling water including design (loop and test sections [NYO-3679-1] 02 p0281 N68-11339

Dendrite growth in supercooled n (RPI-3004-5) 05 05 p0672 N68-14099 solid-liquid interface tem-ed phosphor 08 p1261 N68-18206 Solidification analysis, and a erature limits for supercooled

NRL-6600) Supercooling behavior of high purity liquid bismuth with respect to melting atmosphere, amounts of super-heat, and addition of metallic and nonmetallic impuri-

11 p1768 N68-20719 Melting, solidification, and growth rate of gallium single crystals with and without defects 16 p2679 N68-27420

Mechanical vibration effects on nucleation of super-cooled liquid bismoth and tin

16 p2682 N68-27822 Static dielectric constant for water in supercool re-

16 p2717 N68-27845 Fuel tank pressurization and supercooling of liquid ethane to minimize fuel boiloff problems in supersonic aircraft [NASA-TM-X-1604]

16 p2749 N68-28155 m of supercooled fog by cloud

[AWS-TR-205] 17 p2907 N68-28750 Supercooling in Zn-Cd alloys, crystal growth in liquid solute, mold and coating effects on ingot surface, magnetic field effects on ingot crystal structure, and grain boundary migration. magneti grain bo [TR-2] 17 p2902 N68-29367

Supercooled pressure gra-ressurized water reactor sy radient approximations in systems following primary 19 p3313 N68-32038 SUPERCRITICAL PLOW

Heat transfer in supercritical region of carbon diox-ie in turbulent flow in steel pipe 02 p0287 N68-11725

Heat transfer and friction resistance for carbon dioxide in supercritical region 02 p0288 N68-11727

Analytic model of thermal flow oscillations in heat exchangers for supercritical fluids [NASA-CR-61743] 13 p2167 N68-23231 Asymptotic analysis of three dimensional oscillatory flow in supercritical nozzles [AGARDOGRAPH-117] 17 p2872 N68-28848

SUPERCRITICAL PRESSURES

Design of super critical pressur and supply equipment with radial t [NASA-CR-92[37] ure cryogenic storage I bumper shield 14 p2370 N68-24696 Deterioration in heat transfer to fluids at supercriti-cal pressure and high heat fluxes in steam generators [DSR-70332-55] 20 p3613 N68-33551

U SUPERFLUID FLOW

SUPERFLUIDITY

Periodicity in transition temperature of helium 2 in (ISS-67/24)

X-representation of nucleon-nucleon interaction in superfluidic nuclear mathematical model [JINR-P4-3505] 05 p0719 N68-14813

Landau theory of second-order phase transitions, generalized to including fluctuations, scaling laws, and superfluidity [LA-3805-MS] 08 p1140 N68-17405

Pairing energy calculations for spherical and deformed nuclei using superfluid nucleus model [JINR-P4-3584] 09 p1389 N68-18693

Flow measurements of superfluid helium in submillimeter round capillaries and orifices
[AFOSR-68-0150] 09 p1382 N68-18712 Physical model of liquid helium 4 based on hypothesis that rotons behave like tiny quantized circular vortex

[REPT.-85-43] 13 p2111 N68-24290 Liquid dynamics of helium 2 in pair of oscillating cylinders 15 p2453 N68-26233

Measuring superfluid belium flow through orifices between high Q microwave resonant cavities 23 p4106 N68-36228

ım of superfluid liquid Equilibrium angular mom-helium 2 in rotating cylinder 23 p4107 N68-36432

SUPERGIANT STARS

Theoretical and observational data comparisons on NASA-TM-X-607741 04 p0571 N68-12861 Quasar model based on relaxation oscillations in su-NASA-CR-91336] 04 p0576 N68-13362

Absorption lines and effective temperatures of alpha Persei and beta Aquarii, supergiant stars 10 p1592 N68-20009

Photoelectric photometry used to determine poss anomalous abundance of CN in supergiant compos of Algol type binaries 21 p3764 N68-33753

Red supergiant pulsar hypothesis using Q values derived from stellar luminosity, period, and spectrum [NASA-TM-X-61284] 23 p4166 N68-36239 Spectroscopic and photometric studies on visual double star systems 24 p4341 N68-37656

SUPERHARMONICS

Probability theory and Dirichlet problem for mul-tiply superharmonic functions 11 p1723 N68-20665

SUPERHEATING

Low enriched superheater fuel elements [ACNP-67516] 03 p0370 N68-12123 erheat and coolant flashing in sodi-Liquid metal superheat and coolant flashing in sodium boiling and fast reactor safety
[EURFNR-353] 05 p0695 N68-14389 Superheat nuclear fuel element tests [GEAP-5485] 05 p0696 N68-14712 Bubble chamber to study radiation-induced nuclea-(SU-326-P-13-2) 11 p1752 N68-20879

Superheating and single bubb tion of stagnating liquid metals [AERE-TRANS-1078] abble ejection in vaporiza-14 p2370 N68-24658

Superheating of sodium at low heat fluxes [ANL-7383] 16 p2791 N68-27062

A-1232

Conde Motion liquids de

SUBJEC

Plastic strength o Nozzle ture effe sprays pr

SUPERHE Electro homodys |CERTS Fast s

Digital for milita SUPERHIS AS-20 NASA-

Techn tion usin X ban pact circ tenna de

for space INASA-

Symm system d [ECOM Dynas bund an [AD-66 Micro ment of [IPP-3/6

Reali

X ba latching rations [NRL-h Lowpolariza ESD-T Prode X band RCS-C S ban

Expe triode o [QR-8] Life triode f

(REPT Designate i NASA

Com band fr Condensation of superheated gas mixtures 16 p2795 N68-27674

on of apherical cap be lescribed by differential

DEX

diox-

1725

32

51

m.

2

bubbles in superheated ial equation 18 p3061 N68-29996 dioxation, heat resistance, and creep tic steel pipes for superheaters 20 p3497 N68-32588 1727 strength of austenitic (CE-TRANS-4745) Nozzle diameter, injection pressure, and tempera-ture effects on evaporation and induced air flow in apraya produced by superheated water jets. 22 g8857 N68-35165 best 3231 atory SUPERHETERODYNE RECEIVERS 8848 Electron paramagnetic resonance spectrometers of homodyne and superheterodyne reception [CERTS-NT-02-6] 08 p1178 N68-17664 Fast striations in prebreak-ing microwave receiver techs down of gas discharge 1696 11 p1759 N68-20773 1551 Digitally tuned scanning superheterodyne receiver for military surveillance systems 20 p3440 N68-33401 SUPERHIGH PREQUENCIES AS-204 signal reception predictions for unified S-2 in [NASA-TM-X-63006] 01 p0029 N68-10504 660 Techniques for improvition using S-band equipm
[NASA-TM-X-63022] Apollo spacecraft acquisi-01 p0032 N68-10894 813 X hand input transmissis act circular-cup radiator o mna development, and ra circular plasma column naion line evaluation, high im-or development, spacecraft an-radiation from electric dipole 405 03 p0322 N68-12325 bee Development of 100 watt S band traveling wave tube for space applications : INASA-CR-914421 593 04 p0486 N68-12998 Symmetrical Y-junction E-plane ferrite circulator for system duplexer in airborne X band radar [ECOM-2883] 04 p0487 N68-13367 112 Dynamic behavior of stru-band antenna station during ([AD-662062] e and foundation of X o5 p0630 N68-14555 90 or broadband measure-cefficients over X band 05 p0665 N68-14909 (IPP-3/61) 33 ed electronic computer design using super-ency flip flops and other radioengineering es 06 p0805 N68-15252 iid Realization of logic operations with superhigh frequency flip-flops 06 p0805 N68-15253 on characteristics of reciprocal waveguide phase shifter configu-X hand propagation cha latching ferrite loaded waveg [NRL-MR-1836] 08 p1154 N68-18170 Low-silhouette X-band circularly polarized airborne stemms with polyethylene cylindrical lens and circular planingtion transfers. ESD-TR-67-548) 09 p1301 N68-18344 valuation of C band and ors for lightweight radar [RCS-OSD-1366] 09 p1314 N68-18430 d ranging transponder 09 p1306 N68-19390 S band turnaround [NASA-CR-93669] Design, fabrication, and testing of ring hybrid S band diode phase shifter 13 p2038 N68-23052 Experimental design and construction of X band lode oscillator 13 p2040 N68-23911 [QR-8] Life and performance tests at C and X bands on triode for dual function oscillators [RCS-OSD-1366] 15 p2437 N68-26479 lors 15 p2437 N68-26479 X-band klystron performance, and design of coupled wity output circuits (REPT.-357-10) 16 p2632 N68-27886 Interplanetary space effects on S band telecommuni-17 p2851 N68-29085 Design, packaging, circuitry, and testing of solid state superhigh frequency transmitter using step recovery diode frequency multiplier [NASA-CR-61864] Computer analysis of subsidiary resonance henomena in microwave magnetic materials at X 18 p3054 N68-30664

Analysis and evaluation of critical components of u-band phased array antenna for meteorological

19 p3244 N68-31995

[NASA-CR-86089]

mode suppres 20 p3448 N68-32365 Evaluation and p-band system for Apol [NASA-CR-96289] e analysis of unified S network 20 p3437 N68-32711 Functional capabilit ceiver exciter subm d physical arrangement of in unified S band Apollo ng ground station system 20 p3438 N68-33162 INASA-CR-963841 Mean time between failure and confidence limits for unified \$-band system of Manned Space Flight Net-work based on reliability and performance data from unmanned Apollo flights [NASA-Th4-6-3323] 21 p3659 N66-34278 21 p3659 N68-34278 One thousand wait coment S band power ampli [NASA-CR-66648] s wave space envicon-21 p3660 N68-34309 L-band and S-band te try receiver calibration using sun as signal source [TR-0158/53816-88/-2]] 22 p3837 N68-35571 Three hundred milliwatt X bu [ECOM-01795-9] nd triode escillator 22 p3809 N68-35888 by reflection of super-(MATT-TRANS-59) 22 n3946 N68-35893 ning theory and general design (NASA-CR-97100) 22 p3839 N68-35903 Design and operating chercent efficient, S-band tr cteristics of 100 watt, 50 ling wave tube for space communication and [NASA-CR-97222] 23 p4031 N68-36587 Telemetry data acquisition study of shadowing and 23 p4021 N68-36765 Effect of superhigh fre on conditioned reflex reg tory activity in rabbits equency electromagnetic fields gulation of cardiac and respiraon conditioned in tory activity in ra [JPRS-46632] 23 p4001 N68-37285 Tradeoff analyses on C and X hand frequencies for ground-manned spacecraft communications, and transponder system design data [NASA-CR-92354] 34 p4227 N66-38105 U SUPERPOSITION (MATHEMATICS)
U SUPERPOSITION (MATHEMATICS) SUPERMAGNETS
U HIGH FIELD MAGNETS SUPERNOVAE manive stars [NASA-TM-X-60774] 04 p0571 N68-12861 Thermal, and vibral neutron star during sup [NASA-TM-X-60773] ergy calculations for 04 p0572 N68-12931 c ray propagation from expicsions of nearby supe [NASA-CR-93745] 10 p1587 N68-19937 pair production insta NASA-CR-944221 12 p1968 N68-22685 of metal-rich Chaudzeed by spectrophotometry 13 p2151 N68-23766 Supersovae theory of stellar evolution of peculiar A 18 p3166 N68-30296 Fan beam model for po-sis on supernovae remnant (AD-671151) 19 p3362 N68-31860 Radio telescope ob tions on supernovae Detection of supernova telescope and atmospheric se (NASA-TN-D-4732) pulse by gamma ray stillation method 20 p3582 N68-33370 Hydrodynamic difference oflapse and explosion of seitron pair production e equations for calculating stars induced by electron 23 p4119 N68-36692 Survival of heavy n in Colgates supernova [NASA-TM-X-63363] 23 p4164 N68-37233 pointing and photoelectron ly detection of supernovae 23 p4174 N68-37387 SUPEROXIDES

U INORGANIC PEROXIDES SUPERPOSITION (MATHEMATICS)

in deriving transfer functions describing human opera-tor performance 06 p0780 N68-15909 Superposition principle in qu 10 p1561 N68-19547 states 10 p1565 N68-19729 10 p1490 N68-20171 Linear superposition of shear flows upon fields of thermal convection cells in mathematical model of Language constants. 17 p2984 N68-28478 ging using superposition radardata 23 p4020 N68-36676 n in warm cloud measured by acous 03 p0362 N68-11963 Transport mechanisms, supersaturation, nucleation, and growth of whiskers from vapor phase [ERDE-17/84/66] 04 p0472 N68-13554 Air condensation offs wind tunnel [ARC-R&M-3511] ured in hypersonic 14 p2235 N68-24896 Nucleation rate related to crystal growth and suspen sion density over wide range of superasturation permituration 18 p3122 N68-29679 19 p3265 N68-31410 is of hydrogen exygen fue supersaturated electrolyte [NASA-CR-96143] 19 p3207 N68-32106 persaturation of point de-n by plastic deformation 22 p3887 N68-34830 ealing kinetics produced in ch SUPERSONIC AIRCRAFT B- 58 AIRCRAFT B- 70 AIRCRAFT CONCORDE AIRCRAFT F- 4 AIRCRAFT F- 100 AIRCRAFT F- 104 AIRCRAFT F- 106 AIRCRAFT F- 111 AIRCRAFT MIRAGE 3 AIRCRAFT NORD 1500 AIRCRAFT TSR-2 AIRCRAFT X-15 AIRCRAFT militan normalization. sale for develope 03 p0299 N68-11917 Boundary layer control to optimize lift drag ratio of delta wing and canard configurations of supersonic aircraft [FTD-HT-66-788] 03 p0300 N68-12176 Materials evaluation, designand low pressure testing to dhydraulic system actuator sea NASA-CR-910541 03 p0348 N68-12654 Free flight measurements of incremental drag on su-ersonic eweptback-wing aircraft, due to engine [ARC-CP-960] 4 4 4 7 4 4 94 p0439 N66-12970 Piloted fixed-base simulation of low speed flight haracteristics of arrow wing supersonic transport sir-[NASA-TN-D-4277] 04 p0463 N68-13609 rop V/STOL jet opera Conceptual design of N florts research superconic of [NASA-CR-664]6] ity effect on abook wave nities generated by super-Atmospheric non-[ISAS-416] 05 p0701 N68-14558 Supersonic aircra navigation satellite s [NASA-CR-92984] fixing based on Navy 07 p1022 N68-16748 Installation and fairing fices on wing surfaces of s [NASA-TM-X-1530] ush, static pressure ori-onic aircraft 09 p1268 N68-19341 ards for super-109 p1272 N68-19405

Wind tunnel aerodynamic spike tests for drag reduc-tion, and rain drop disintegration capabilities of super-sonic vehicle nose shapes

09 p1268 N68-19413

Maximum perception range of fast aircraft with and (RRE-TRANS-1711 12 p1817 N68-23016

Aerodynamic stability and control characteristics of supersonic aircraft [NASA-TN-D-4578] 14 p2183 N68-24498 Atmospheric effects on sonic bo [NASA-TN-D-4588] soom characteristics 14 p2184 N68-24662

Fuel tank pressurization and supercooling of liquid exhanc to minimize fuel boiloff problems in super-(NASA-TM-X-1604) 16 p2749 N68-28155

Pumpability, lubricability, and durability of five odraulic fluids at varying inlet temperatures to evalu-e applicability for supersonic aircraft ate applicability for sup [NASA-CR-95480]

17 p2903 N68-28819 Ball bearing and bellows face seals for Mach 3 air-craft turbine engine mainshafts tested using jet lubrica-tion and inert gan blanketing [RASA-CR-72424] 20 p3489 N68-33027 20 p3489 N68-33027

Evaluation of thermodynamic performance of heat resisting austenitic steels and alloys used in construct-ing main casings of supersonic aircraft jet engines 20 p3579 N68-33338

Creep buckling leading to reduction of strength in aircraft compression structure

21 p3784 N68-33794 Comparative analysis of fuselage tanks for liquid methane fueled super [NASA-TN-D-4837] 23 p3988 N68-36074

man discomfort, exposure time, and variation of tion environment considered in aircraft ride qualivibration environment co ty evaluation technique (ASD-TR-68-18)

23 p3989 N68-36338 Radiosonde data comparisons of atmospheric tem-perature at 100-, 80-, 50-, and 30-mb levels, and tem-perature gradient effects on supersonic aircraft per-

(ESSA-TR-EDS-7) 23 p4097 N68-37381 Wind tunnel model characteristics for flutter predic-

tion on superson [AGARD-562] mic aircraft planform 24 p4193 N68-37763

SUPERSONIC AIRFOILS

Nonlinear flutter of three-layer orthotropic plate in supersonic gas flow (FTD-HT-66-764) 15 p2382 N68-26935 Stability of wedge shaped airfoil in supersonic flow [TG-230-T544] 16 p2585 N68-27874

SUPERSONIC COMBUSTION

Fluid dynamics and chemical phenomena appearing ear injector exits of idealized supersonic combustion (AFOSR-68-0066)

08 p1257 N68-17929 Self modeling problems of one dimensional or ax-isymmetric supersonic flows of combustible gas mix-ture around cone, wedge, or curved wall [FTD-MT-24-299-67] 11 p1804 N68-21391

Pebble bed heater for providing high enthalpy air

stream for supersonic comb [COA-NOTE-AERO-200] n studies 17 p2867 N68-28367 Liquid and gaseous fuel injections into supersonic ombustion chambers

(DLR-FB-68-26) 21 p3758 N68-34189

Turbulent mixing during supersonic combustion of 2 semi-infinite streams of reacting gases [FTD-MT-24-361-67] 24 p4356 N68-38464

SUPERSONIC COMBUSTION RAMUET ENGINES

Experimental techniques for testing supersonic combustion ramjet engine flow in shock tunnel [HIC-95] 02 p0291 N68-11770 [FIR.-92]
Economic and design considerations for development of commercial supersonic transports
03 p0299 N68-11918

Hypersonic wind tunnel apparatus for simulating su-ersonic combustion in scramjet engines 07 p0981 N68-16384

Performance, and structural durability of full scale turbofan duct burner at simulated supersonic transport

(NASA-CR-54637) 09 p1414 N68-19070

Feasibility of using air as test gas in hotshot wind tunnels for testing integrated scrampets (AEDC-TR-67-242) 10 p1512 N68-20139

Exhaust gas of hydrazine-nitrogen tetroxide rocket or simulating combustor inlet requirements of scramint engines [NASA-TM-X-52433] 21 p3759 N68-34354

SUPERSONIC COMMERCIAL AIR TRANSPORT

Economic and performance predictions regarding evelopment of commercial supersonic transports
03 p0299 N68-11913

Low speed static and dynamic stability tests on scale sodel of double-delta supersonic commercial air tram-

NASA-TN-D-41791 08 p1118 N68-18250 Sonic boom research /conference [NASA-SP-147]

11 p1624 N68-21413 Sonic boom theory /review/ 11 p1624 N68-21414

NASA research on sonic boom generation/review/ 11 p1624 N68-21415

Sonic boom flight research - effects of aircraft opera-ons and atmosphere on sonic boom signatures nom signatures 11 p1624 N68-21416

Atmospheric effects on sonic b 11 p1624 N68-21417

Dynamic response of people and buildings to sonic 11 p1624 N68-21418

Galactic radiation hazards in passenger travel of supersonic transport NASA-CR-94760) 14 p2202 N68-25382 nger transport cabin insula-

Tests on supersonic passenge tion to insure thermal comfort [ARC-CP-976] 19 p3198 N68-31205

SUPERSONIC COMPRESSORS

Basic design and rotor perform age blade supersonic compresso ince of blunt trailing edge blad [EN-20] 11 p1620 N68-21487

Experimental and analytical investigation of dynamic mixed-compression inlet 21 p3618 N68-34091 response of supersonic (NASA-TM-X-52441)

Blunt trailing edge blade concept application to low ub tip ratio transonic and supersonic compressors VKI-IN-27] 24 p4194 N68-38033

Performance tests on blunt trailing edge supersonic compressor blade configurations [AEDC-TR-68-197] 24 p4196 N68-38473

SUPERSONIC DIFFUSERS

Calculation of one dimensional gas flow in channel of supersonic diffuser under off-design conditions [FTD-MT-65-472] 04 p0436 N68-13442

Turbulent exchange effect in boundary layer on effi-ciency of diffusers with large aperture angles [FTD-HT-23-536-67] 06 p0826 N68-15486

Diagram for optimal design of shock system in as-symmetric supersonic diffusers with external compres-

(RAE-LIB-TRANS-1259)

07 p0989 N68-17155 Diagram for optimal design of of axisymmetric super-external compression 11 p1777 N68-21618 sonic multishock diffus [FTD-HT-23-682-67]

Wind tunnel tests of mixed-compression axisymmet-ric inlet system to determine bleed mass flow ratio, INASA-TN-D-4557) 13 p2143 N68-23354

Supersonic diffusion flames in laminar boundary layers [FTD-MT-24-165-67] 18 p3187 N68-30140

SUPERSONIC DRAG

Aerodynamic, structural, and thermal analyses for supersonic planetary entry parachute design [NASA-CR-66585] 10 p1458 N68-20314 nts on cambered delta wing Skin friction mea

at supersonic speeds [ARC-R&M-3501] 12 p1814 N68-22652

Boundary layer bleed drag at supersonic speeds [ARC-R&M-3529] 18 p3060 N68-29882

Heat transfer effect on drag due to surface roughness in supersonic turbulent boundary layer [NASA-TN-D-4746] 20 p3463 N68-33054 Drag coefficient for sphere in supersonic rarefied gas

[FTD-HT-67-174] 20 p3394 N68-33468

SUPERSONIC FLIGHT

Wind tunnel - shock tube simulation of head-on in-teraction between supersonic vehicle and blast wave [NOLTR-67-123] 04 p0494 N68-13255

Variable geometry wing planforms for transonic and supersonic aircraft [NASA-TT-F-11318] 05 p0605 N68-14265

Peak pressure of sonic booms produced by Mirage 3 aircraft measured over fixed ground range [ISL-T-30/67] 06 p0766 N68-15019

Operation and performance of B-70 aircraft during supersonic flight test 08 p1114 N68-17479 lynamic engine integration and propulsive effi-studies for transonic and supersonic aircraft

11 p1778 N68-21669

Shock interactions between supersonic body and bliquely approaching blast waves IC-CR-67-2533] 12 p1814 N68-22891 obliquely approach [SC-CR-67-2533] Aerospace medicine reports on psychological and sysiological problems of supersonic and space flights 17 p2819 N68-28516

Analysis of several methane fueled engine cycles for supersonic flight [NASA-TN-D-4699] 17 p2962 N68-29378

Static performance of an auxiliary inlet ejector nozzle for supersonic-cruise aircraft [NASA-TM-X-1653] 22 p3955 N68-35764

Human discomfort, exposure time, and variation of ribration environment considered in aircraft ride quali-(ASD-TR-68-18) 23 p3989 N68-36338

SUPERSONIC FLOW

Sonic jet flow field exhausting counter to low density [AEDC-TR-67-149] 01 p0051 N68-10543

Profile optimization of thin supersonic wing for minimum average heat transfer coefficient at given aerodynamic characteristics [FTD-HT-66-491] 01 p0152 N68-10732

Supersonic flow of ideal thermodynamically perfect gas expelled from nozzle into stationary medium [TG-230-T526] 01 p0052 N68-10838

Arc-heated, supersonic, argon molecular beam mea-irements of molecular collision cross section energies oross section energies 01 p0116 N68-10934 [NASA-CR-89318] Multifluid theory for stagnation flow of supersonic partially ionized monatomic gas over biased blust body

[SC-RR-67-289] 02 p0252 N68-11183

Supersonic wind tunnel study of two dimensional secondary fluid injections between Mach 1.64 to 3.08 [AE-165A] 02 p0198 N68-11278

Viscous separated flow fields downstream of backward facing step in laminar supersonic flow calcu-lated by means of integral relations.

Finite difference method for calculating one dimen-onal and axisymmetric stationary currents of inviscid ional and axisymmetric statio as in divergent sozzle section

02 p0200 N68-11570 Relaxation phenomenon in supersonic gas flows [REPT.-67-2] 02 p0201 N68-11647

Wind tunnel tests on rectangular twin duct variable geometry air intake at supersonic speeds
[ARC-CP-944] 03 p0296 N68-12120

Fortran 4 computer program for calculation of su-personic flow fields with viscous effects [GDC-DBE67-003] 04 p0491 N68-12814

Pressure coefficients, friction temperatures, and con-vection coefficients for circular cylinders at oblique angle of attack in supersonic flow at Mach number 2.42

[REPT.-432] 04 p0431 N68-12825

Flame stabilization in su {RAE-LIB-TRANS-1230} 04 p0593 N68-12850

Nonlinear flutter of circular cylindrical shell in supersonic flow NASA-TN-D-42651 04 p0585 N68-12864

Velocity field near thin, non-lifting delta wings calculated using supersonic linearized theory
[ARC-CP-961] 04 p0434 N68-13156 theory 04 p0434 N68-13156

Digital computer assisted computation of supersonic low of inviscid, reacting gas over smooth, three dimen-ional body using method of characteristics sional body using meth (CAL-AM-1800-Y-4) racteristics 04 p0495 N68-13303

Flow calibration me ents in test section of su-DLR-FB-67-451 04 p0491 N68-13457

Approximate solution of n tions for supersonic flow arou [DLR-FB-67-34] nlinear hyperbolic equa-nd circular cylinder 04 p0436 N68-13458

DLR-FB-67-3-1
Theoretical research on ae round hypervelocity bodies - rounic flow dynamics of blunt bottom, sharp edges, and flat plates on aerodynamic gas flows odies - supersonic and hyper-blunt bodies, bodies of revolution, sharp edges, and [DLR-MITT.-67-13] 05 p0601 N68-13908

Numerical analyses for frictionless supersonic, and ypersonic gas flows around blunt bodies of revolution 05 p0601 N68-13910

Electromagnetic forces to increase exhaust velocity of electric arc jet engines and effect Lorentz forces on supersonic flows [LA-TR-67-33] 05 p0731 N68-14320

A-1234

[NASA Fortn throats [NASA-[RR-44] Linea

ARC-2 Superi lar reces TG-230 Hyperi

over cur [ARC-29 Appro flow FTD-H Fortra NASA-First c Nutter of [AS-67-1 Peculising in car

NASA-1 Collect (AEDC-1 Numer around or [NASA-T TR-0158 Definiting transi

SC-CR-

Flutter

INASA-T Mathen viscous fli by Navier Mathe JPRS-44

Acrody sion shell, [NASA-T] Theory [NASA-T

Energy sonic flow (RAE-LIB Shock to Steady sternally per [TR-AE-6

DLR-FB-

Separation theories for subsonic, and supersonic [NASA-CR-61433] 05 p0648 N68-14731 Fortran 4 program for computerized design of two mensional supersonic nozzles with sharp edged (NASA-TM-X-1502) 05 p0603 N68-14747 method for calculating three Numerical analysis of m dimensional supersonic flow [RR-44] 05 p0649 N68-14964 Linearized theory of superso pressure curve shape on wing re [ARC-28682] nic flow for calculating ot chord 06 p0763 N68-15192 Supersonic flow and pre-06 p0920 N68-15432 Supersonic flow past bodies of revolution with annular recesses for determination of length/depth ratio of recesses at various Mach and Reynolds numbers [TG-230-T534] 06 p0826 Ne8-15489 Hyperbolic flow equation scous supersonic flow isoba ver curved surface for two dimensional in boundary layer flow [ARC-29142] 06 p0828 N68-15664 Approximate method for determining distances tween how wave fronts and body noses in supersonic FTD-HT-23-837-671 06 p0763 N68-15713 Fortran computer code r analysis of unsteady su-scillating body of revolu-[NASA-CR-61493] 06 p0829 N68-15847 First order frequency of flutter of finite cylindrical s [AS-67-16] cts in supersonic panel 07 p1091 N68-16694 Peculiarities of Mach reflection of shock waves mov-ing in carbon dioxide and nitrogen at supersonic speeds 07 p0987 N68-16862 Shock tube study of electric currents to flat plate in appropriate income of the study of electric currents to flat plate in appropriate in the study of electric currents to flat plate in the study of electric currents to supersonic ionized [SC-CR-67-2748] 08 p1217 N68-17218 supported rectangular Flutter analysis on bu panels under superson [NASA-TN-D-4357] 08 pl251 N68-17651 Collection of non nt low density supersonic stream by cryog [AEDC-TR-67-201] 08 p1162 N68-17873 Numerical determi around conical bodies [NASA-TT-F-11473] supersonic gas flow 08 p1107 N68-17900 tant into supersonic flow Penetration of liquid in [TR-0158/3220-10/-1] 08 pl163 N68-17908 Definition of location and height of roughness initiat-g transition without additional drag for supersonic [NASA-TT-F-11558] 08 pl107 N68-18138 Mathematical model scous flow around blu Navier-Stokes expan calculating supersonic fies - numerical analyses and coordinate transfor-[JPRS-44459] 08 0 N68-18139 ulating supersonic 08 p1165 N68-18140 calculating supersonic blunted by radiating gas 08 p1165 N68-18141 Aerodynamic char sion shell, and conica [NASA-TN-D-4360] of tension string, ten-supersonic flow 09 p1266 N68-18720 Theory of wing prof (NASA-TT-F-11456) monic flow 09 p1267 N68-19023 upersonic flow 09 p1267 N68-19024 Theory of finite span [NASA-TT-F-11461] Energy addition at surfa sonic flow using three from [RAE-LIB-TRANS-1260] nuity in super-09 p1267 N68-19058 Shock tube and a [JPRS-44615] 09 p1329 N68-19112 Steady state simulation ternally propelled supers [TR-AE-6704] induced in wake of in-nicle in infinite tube 10 p1455 N68-19538 Acoustic theory used to ca ast slender bodies of revoluti alculate supersonic flow tion at small angle of at-(DLR-FB-68-03) 10 p1456 N68-20090 supersonic to subsonic flow in tube inners and different stagnation pres-11 n1683 N68-20777

eid supersonic flow over slightly yawed conical es of elliptic comes with surfaces [RE-323J] 11 p1683 N68-20926 18 p2996 N68-29979 Mechanical and therms processes and supersonic fi [RAE-LIB-TRANS-1261] operties of detonation ser for low de 11 p1685 N68-21200 sonic flow (AEDC-TR-68-87) 18 p3074 N6E-30082 Analysis of turbule re field under supernic gas flow i sonic shear layers [NASA-CR-888] 12 p1859 N68-22087 shock wave incident on cy INASA-TT-F-117951 Numerical analysis of penetration of plate in half 18 p2998 N68-30336 plane within supersoni NASA-TT-F-[1687] 12 p1862 N68-22424 blunt bodies [NASA-TT-F-11797] 18 p2998 N68-30367 Three dimension past elliptical cones [FTD-HT-67-70] ic and supersonic flows ies of minimum wave ler two dimen 12 p1814 N68-23038 (NASA-TT-F-11803) c flow 18 p2998 N68-30388 supersonic mag-int bodies with self con-Experimental study of radio-frequency induction rating of partly ionized monatomic gas in supersonic 13 p2124 N68-23205 naibilities of half-body onic flow 19 p3337 N68-30917 Review of principles ar rviscid rotational com-plunt body problem 19 p3264 N68-31242 onic flow 13 p1987 N68-23212 [ARC-R&M-3528] lly balanced arcs in supersonic external flo [NASA-CR-94576] cs of large angle come 19 p3195 N68-31551 13 p2125 N68-23500 [NASA-TN-D-4719] Surface pressure dis tock wave envelopes erronic flow using sch estimate from observed ing conical body in su-otography 13 p1989 N68-24131 ibution in wake of sharp (NASA-TT-F-11877) 19 p3195 N68-31556 Personic flow using s [NPL-AERO-1244] Gas dynamic equations based on injection and com-sistion of gaseous fuels in supersonic flow of high sthalpy air flowing in non-constant area combustion tempter. Crocco-Lee method lation of heat transfer flows 13 p2173 N68-24208 in laminar super (TAE-78) (COA-AERO-204) High sensitivity me visualization of superso [FTD-MT-24-125-67] of glow discharge for rs of rarefied gas 13 p2055 N68-24223 Boundary layer approximinar viscous inviscol inte nations for analysis actions in supersonic fl Calculation of super blust bodies at small Re [NASA-TT-F-11402] ows past axisymmetric [AFOSR-68-1569] 20 p3462 N68-32900 14 p2180 N68-24754 Two dimension computation of sa (SCL-DR-67-66) r program for numerical mpressible flow fields 20 p3464 N68-33076 Rheoelectrical analogy erodynamic characteristic endy supersonic flow applied to calculation of Mathematical models for supersonic flow past blass clies and one dimensional, unsteady flow of relating 14 p2181 N68-24942 PORTRAN program for approximate calculation of apersonic ideal gas flow past blunt bodies with sonic FTD-MT-24-216-67] 20 p3393 N68-33217 Algorithms for probi ns of supersonic flow past (NASA-TN-D-4563) 14 p2182 N68-25093 20 p3393 N68-33218 Characteristics method for computing two dimensional equilibrium and perfect gas vortex flows [NASA-TT-F-11694] 15 p2450 N68-25795 action of tranverse jet injected into main super-IAFOSR-68-14191 20 p3466 N68-33258 Symmetric flow over thin genera conical bodies in supersonic inviscie [NASA-TT-F-11693] 15 ed axisymmetric shells or flow 20 p3605 N68-33328 20 p3605 N68-33328 scid gas stream 15 p2380 N68-25882 Application of method of characteristics to calcula-tions of nonequilibrium supersonic air flow past Analytical and experi of magnetically balance cross flows [NASA-CR-96474] NASA-TT-F-11691 15 p2380 N68-25883 20 p3560 N68-33592 Design and calibration of total temperature probes for study of flow field in supersonic flow [TAE-79] 15 p2466 N68-26060 or computing expersoric last bodies 21 p3681 N68-34110 Numerical analysis of unsteady nonlinear three mensional flow of sweptback wing in supersonic curved shell punels [NASA-CR-89185] SUDAAR-3391 15 p2381 N68-26104 21 p3789 N68-34201 of cylindrical shells with radial edge constraint, and flow field Aerodynamics of supersonic flow fields concerning forebody drag, delta wing lift, and boundary layer deformations in sup [AFOSR-68-0382] 21 p3618 N68-34259 15 p2570 N68-26403 INPL-AFRO-10671 Characteristic equi r field effects on sonic eversible processes 22 p3803 N68-34919 16 p2641 N68-26964 namic design theory for Systems analysis of super [AD-668682] fluid amplifier 16 p2592 N68-27133 22 p3804 N68-34920 Second order wave stru opersonic flow re of aerodynamic body in 16 p2648 N68-27820 Drag of cylinders all or part ent supersonic boundary layer ily immersed in turbu-Stability of wedge shaped at [TG-230-T544] oil in supersonic flow 16 p2585 N68-27874 22 p3856 N68-35025 Measurement of skin frict means of heated thin film gag-[ARC-R&M-3490] onic premixed flows of ial, hot gas, pilot jet 16 p2797 N68-28100 Flame propagation in su hydrogen and air ignited by [NASA-TN-D-4631] 22 p3861 N68-35475 Interni pressure gradi (NASA-CR-97068) 22 p3980 N68-35782 RA-P-119] 17 p2802 N68-28556 Supersonic flow of con ible gas minture over (FTD-HT-23-1068-67) 22 p3986 N68-35867

17 p2871 N68-28752

ed drag at supersonic speeds 18 p3060 N68-29882

Boundary layer bit [ARC-R&M-3529]

23 p4042 N68-36011

Survey and evaluation of supersonic base flow theo-

INASA-CR-971291

23 p4050 N68-36897

lary layer on flow in su-

Solutions for pressure and streamline disturbance fields in discontinuous supersonic flow past ablating (DAC-62375) 23 p4044 N68-36108 General behavior of supersonic, steady laminar oundary layers exhibiting strong local interaction with uter flow 23 p4045 N68-36128 Recombination rate constants of diatomic gases cal-culated from Mach number of gas discharging from su-FTD-HT-23-692-67] 23 p4050 N68-36897 Computer program manual to analyze loads and heating on bodies subject to rocket exhaust impinge-[NASA-CR-98004] 23 p4189 N68-36930 Wind tunnel tests at Mach 1.60, 2.36, and 2.96 to determine flow field properties near arrow wing body model for locating potential engine air inlets [NASA-TN-D-4809] 23 p3986 N68-37238 Flutter behavior of plates exposed to supersonic flow with concurrent transverse and plane loadings [NASA-CR-97255] 23 p4184 N68-37267 Tables of shock wave drag parameter as function of much number and local shock angle for body in supersonic free stream [ISAS-427, V. 33, NO. 9] 23 p3987 N68-37331 Functional analysis on oscillating amplitude of super-sonic velocity field excited by wing vibrations [NASA-CR-97259] 23 p4184 N68-37386 Species separation by stagnation of gas mixtures in supersonic flow 24 p4244 N68-37643 Wind tunnel model tests of supersonic flow past bodies of revolution with annular recesses, and aerodynamic drag measurements [FTD-MT-24-163-67] 24 p4194 N68-37950 24 p4194 N68-37950 SUPERSONIC FLUTTER Experimental study, and theoretical analysis on su-personic flutter of corrugation stiffened panels [NASA-TN-D-4321] 09 p1444 N68-19143 Implane edge restraint effect on vibration and flutter of slightly curved panels in supersonic flight sonic flight 16 p2779 N68-27630 SUPERSONIC HEAT TRANSFER Calorimeters for measuring supersonic heat transfer m corner [ARC-CP-965] 04 p0594 N68-12968 SUPERSONIC INLETS Test procedures and results of two dimensional air intake having all-external compression and 2.0 design [ARC-CP-937] · 06 p0763 N68-15688 Graphs for calculating thrust and flight performance of air breathing engines with sharp lip supersonic inlets [RAE-LIB-TRANS-1246] 07 p1074 N68-16545 Flow distribution around pyramidal centerbodies of jet engine infets IDLR-FB-67-721 07 p0934 N68-16781 Wind tunnel investigation of techniques for reducing cowl drag of external compression inlet at Mach 2.49 [NASA-TM-X-1516] 08 pt 108 N68-18189 Supersonic performance evaluation of mass flux probes with sharp symmetrical inlet, and with blunted probes with sharp sym unsymmetrical inlet [NASA-TM-X-1524] 09 p1342 N68-18834 Experimental drag measurements of wedge center body intakes at Mach 1.56, 1.86, and 2.14 [ARC-CP-968] 12 p1814 N68-22651 Flow field around pyramid shaped centerbody of su-personic engine inlets [REPT.-1169] 19 p3360 N68-31659 J-75 engine inlet noise reduction test using simulated apersonic inlet design with expandable spike [6-3173] 20 p3396 N68-32200 Dynamic response of subsonic inlet to external and internal disturbances [NASA-TM-X-1648] 20 p3393 N68-33374 Experimental and analytical investigation of dynamic response of supersonic mixed-compression inlet [NASA-TM-X-52441] 2 p3618 N68-34091 SUPERSONIC JET FLOW Interaction of axisymmetric supersonic underxpanded jet with obstacle 01 p0051 N68-10396 Simulated study of effects of high altitude supersonic air flow on titanium alloy hot salt cracking process [NASA-CR-981] 02 p0222 N68-11522

Interaction of supersonic gas jet from conical nezzles ith inclined plane barrier

03 p0334 N68-11957

Shadowgraph of sound field from cold supersonic NASA-CR-91337] Magnetohydrodynamic energy converters, and ele tric plasma acceleration - arc currents, electrodele plasma generators, supersonic jet flow dynamics, ar DLR-MITT.-67-17] Effects of axial current flow on velocity and energy of supersonic plasma jet Aerodynamic sensors for measuring thermodynamic characteristics of supersonic argon plasma jet 05 p0723 N68-13933 Effects of nozzle geometry on supersonic jet flow Impact of supersonic [FTD-HT-23-924-67] Numerical analysis of supersonic gas jet impact against rigid surf [TG-230-T535] Calculation of recombination rate constants of diatomic molecules according to Mach number of flow at supersonic nozzle exit Supersonic jet escape into vacuum from nozzle with uniform exit flow Supersonic wind tunnel investigation of aerodynamic arce characteristics of jet issuing transverse to wedge [NASA-CR-96722] (AS-68-4) Arc heated supersonic free entropic flow for partially io nic free jet and one dime Supersonic jet noise generation by radial annular jet flow impinging on first shock cell region of axisymmet-ric converging main jet flow [NASA-CR-66706] 24 p4201 N68-38088 SUPERSONIC NOZZLES Streamlines and density con from supersonic axisym numerical methods [RAE-TR-67016] roach appli Variational appro ed to op of supersonic section [FTD-HT-66-801] supersonic nozzles [NASA-CR-92587] Shock tube studies of flow of thermally dissociated-oxygen, nitrogen, and carbon dioxide gases through su-personic nozzles Calculation of recombination rate constants of diatomic molecules according to Mach number of flow at supersonic nozzle exit Wind tunnel aerodyna tion, and rain drop disintegra sonic vehicle nose shapes Supersonic gas ejector with cylindrical mixing [NASA-TT-F-11554] Gas dynamics in supersonic radial nozzles for mag-[CEA-TR-R-1902] Supersonic nozale mixing chamber length effects on ejection efficiency for zero ejection coefficient [NASA-TT-F-11739] 17 p2871 N68-28525 Static pressure distribu on of superso walls for optimization of [FTD-HT-23-1079-67] Supersonic nozzle molecu ponent system development/ [PAPS-67/68-212] Acceleration of liquid slugs to high velocity by super-nic gas nozzles for drilling rock during tunnel con-[R-4-22-68] Description and or nozzle system for 11-in [NASA-TN-D-4750] Gas dynamics of supe netohydrodynamic generators [FTD-MT-24-208-67] 22 p3945 N68-35663

04 p0545 N68-13394 05 p0721 N68-13924 05 p0722 N68-13930 06 p0897 N68-15039 nic gas jet on flat rigid surface 7] 06 p0824 N68-15141 06 p0825 N68-15293 07 p0987 N68-16858 21 p3682 N68-34302 21 p3619 N68-34491 ied to reduction of super-22 p3861 N68-35423 red argon 23 p4137 N68-36089 contours calculated for flow etric nozzles into vacuums by 03 p0336 N68-12198 03 p0298 N68-12575 rical flow separation in 06 p0830 N68-15974 07 p0987 N68-16857 07 p0987 N68-16858 ic spike tests for drag reduc-gration capabilities of super-09 p1268 N68-19413 12 p1960 N68-22037 14 p2192 N68-24838 on, nozzle geometry and rrsonic nozzles 18 p2993 N68-29623 lar beam facility /com-18 p3054 N68-29858 20 p3456 N68-32616 ng parameters of Mach 2 tramic heated wind tunnel 20 p3457 N68-33190 ic radial nozzles for mag-

Recombination rate constants of diatomic gases cal-alated from Mach number of gas discharging from su-FTD-HT-23-692-67] Correction for effect of bea FTD-HT-67-91]

or effect of boundary es with broken generatrix 24 p4247 N68-38114 PRESSURE DISTRIBUTION
PRESSURE DISTRIBUTION SUPERSONIC SPEEDS Mathematical model for evaluating boundary layer effect on flat panel at low supersonic speeds [NASA-TT-F-11355] 01 p0001 N68-10160 transition experiments on cones and onic speeds to determine roughness Boundary layer tran spheres at supersonic and cooling effects [C7-2007/020] 02 p0197 N68-11107 Boundary layer effect on flat panel flutter at low su-personic speed [ONERA-NT-116] 03 p0295 N68-11911 Surface pressure measurements sity flows at Mach numbers near 2 [ARC-R&M-3505] ts of cones in low den-03 p0297 N68-12492 Comparison at supersonic speed of lift drag ratio obtained by interference between volume, lifting surface, and engines with that obtained by integration of volume and engines
[RAE-TR-67067] 04 p0433 N68-13138 Dynamic response of wedge shaped compression ramp air intakes at supersonic speeds
[ONERA-NT-117] 04 p0437 N68-13677 Linearized flow distribution of expanded gas in jet at (ARC-R&M-3504) 04 p0437 N68-13819 Supersonic aerodynamic characteristics of model of air-to-surface missile [NASA-TM-X-1491] 07 p0933 N68-16480 Design and performance testing of large scale mixed impression axisymmetric inlet at transonic and supersonic speeds [NASA-TM-X-1507] 07 p1074 N68-17028 Rotary, and oscillatory relaxation effects in laminar oundary layer on flat plate at supersonic speed 08 p1161 N68-17727 Wind tunnel tests on pressure distribution, and shock shapes of conical blunted bodies moving at supersonic speeds in nitrogen, or helium media [NASA-TN-D-4314] 08 p1106 N68-17896 Rain impact damage, and water erosion effects on structural materials - aircraft structures, supersonic speeds, metals, plastics, ceramics, steels, and protective continues. 09 p1337 N68-19401 Ultrasonic velocity and attenuation in lithium and carbo-nitrogen doped potassium chloride
15 p2539 N68-26345 Calculations of shock wave pattern in field surround-ing arbitrary aircraft configurations at supersonic speeds based on wing-body analysis methods [NASA-CR-73109] 17 p2807 N68-28863 Boundary layer bleed drag at supersonic speeds [ARC-R&M-3529] 18 p3060 N68-29882 Cold flow tests of aerodynamic characteristics of lug nozzle configuration for turbojet engines operating at supersonic spee [NASA-TM-X-1619] 18 p3157 N68-29953 Flight test of 40 foot para chute deployed at low supersonic speed and dyn NASA-TM-X-1623 18 p3169 N68-29993 Aerodynamic character es of two blunt half cone wedge entry configurations at supersonic speeds [NASA-TM-X-1621] 18 p2996 N68-30030 Performance tests on static pressure probe at super-[ARC-29558] 18 p3077 N68-30616 Turbulent near-wake of axisymmetric body at super-mic speeds measured in specially-designed wind tun-19 p3363 N69-31177 Detonation wave simulation of flow field induced by supersonic vehicle [NASA-CR-96123] 19 p3194 N68-31440 Integral theory for turbulent base flows at subsonic and supersonic speeds 20 p3463 N68-32960 Wind tunnel evaluation of speed brake effects on su-ersonic characteristics of variable sweep fighter air-[NASA-TN-D-4773] 21 p3621 N68-33669 Submerged circular cylindrical shell reaction to pres-are wave propagated at supersonic speed in direction f sound generator 21 p3788 N68-34112

SUPERS Designation of the control of the co INASA Take sonic to pitch at ARC-**Fuel** INASA Adve RAE Asser AD-66 Air tr

> NASA Certif radar se [NASA-Varia take air RAE-T NASA-

Ball 8

dards for FAA AD-664 Reliab technique and com [AD-664 Simula NASA-Tanka

NASA-Hot sa INASA-Feasibi TUB-IR Performals, and

NASA-C Supers NASA-1 Structu 7

4

if

0

d

7

1

2

Flow visualization and distribution in wake of sharp cone in supersonic flow [NASA-TT-F-11877] 19 p2195 N68-31556

Test facilities summary for Fluid Dynamics Institute 01 p0046 N68-10334

Lift, drag, and pitch measurements for scaled calibration model in supersonic wind tunnel [DLR-FB-67-46] 04 g0490 N68-13456

Aerodynamic drag measurements and boundary layer flow over V notches at transonic and supersonic NASA-CR-11321 . 22 p3859 N68-35252 Aerodynamic characteristics of bodies of revolution at Mach numbers from 1.50 to 2.86 and angles of attack to 180 deg (NASA-TM-X-1658) 23 p3984 N68-36193 Windshield and nose geometry effects on supersonic aerodynamic characteristics of tactical fighter model [NASA-TM-X-1664] 23 p3991 N68-37066 Wind tunnel performance high tip speeds and advance [USAAVLABS-TR-68-44] nce tests of rotary wings at 24 p4195 N68-38141 SUPERSONIC TRANSPORTS NT CONCORDE AIRCRAFT Economic and design consider sent of commercial supersonic tra iderations for developramsports 03 p0299 N68-11918 Design and volumetric analysis of pressurized tanks for use in liquid-methane fueled supersonic transport aircraft [NASA-TN-D-4295] 03 p0422 N68-12370 Takeoff behavior calculations of slender wing super-sonic transport design constrained to follow specified pitch attitude time history ARC-R&M-3493] 03 p0301 N68-12447 Fuel systems and storage tanks for methane fueled [NASA-TM-X-52378] 04 p0438 N68-12827 Adverse weather avoid using maneuver and radar [RAE-TR-67133] ce by supersonic transport 04 p0440 N68-13085 Assessment of historical development of United States supersonic transport program, technological aspects, and sonic boom problems 04 p0441 N68-13122 Air traffic control aspect of dynamic simulation program for supersonic transports
[RD-67-47, PT. 2-2] 04 p0534 N68-13158 Ball bearings and bellows face seals for supersonic transport lubrication systems [NASA-CR-54311] 04 p0516 N68-13547 04 p0516 N68-13547 Certification criteria and flight rules to assure relia-bility of supersonic transports 06 p0766 N68-15191 Hybrid navigation system using Doppler and inertial radar sensors for supersonic aircraft applications [NASA-CR-92985] 07 p1022 N68-16747 Variable geometry intakes for matching engine to in-take airflows, and to maintain high pressure recovery and low drag over Mach number ranges in supersonic transport design. transport design 08 p1229 N68-17269 Simulated flight test of double-Delta supersonic transport for performance characteristics, handling qualities, and climbing characteristics [NASA-TN-D-4396] 08 pt 108 N68-17391 08 pt 108 N68-17391 [NASA-TN-D-4390] Simulator tests of factors affecting pilot technique in approach and landing of supersonic transports 08 p1135 N68-17472 Economic effects of meteorological forecasting stan-dards for supersonic civil transport [RAE-TR-66297] 08 p1196 N68-17550 FAA philosophy outline for evaluating maintenance programs for new types of aircraft [AD-664387] 09 p1270 N68-18716 Reliability and maintainability concepts and chniques in design of supersonic transport systems [AD-664370] 09 p1270 N68-18722 d PPM telemetry signal for su-etry simulator ulated demod personic transport telemetry simulator NASA-TM-X-63176] 12 p1843 N68-22277 Tankage systems for methane-fueled supersonic [NASA-TM-X-1591] 13 p1992 N68-23895 Hot salt stress corrosion cracking of sheet metals for INASA-TM-X-596341 14 p2273 N68-25324 Feasibility of single booster rocket vehicle for global pamenger transpor TUB-IR-4/19671 15 p2385 N68-25894 Performance of aircraft gas turbine ball bearings, seals, and lubricants under simulated supersonic transport engine conditions [NASA-CR-34662] 16 p2667 N68-27331 Supersonic transport vertical flight path control problems in terminal area [NASA-TM-X-59047] 16 p2637 N68-27544 Structural design of Concorde aircraft 16 p2589 N68-27871

Performance requirements and economic costs to reduce cruise sonic boom of supersonic transport [NASA-TN-D-4677] 17 p2805 N68-28831 Simulated flight operations to evaluate problems co-ountered by supersonic transports in present air traffic SUPERSONIC WIND TUNNELS CONTrol system
[NASA-TN-D-4638] 17 p2809 N68-29372 Supersonic transport fatigue design and test program 18 p3176 N68-29913 Modified wind tunnel tube for high Reynolds number testing of supersonic aircrafts [CAL-AD-2297-A-1] 18 p3055 N68-30172 Supersonic transport navigation, guidance, and in-tegrated avionics system (NASA-TM-X-61039) 19 p3306 N68-31413 ng system for low visibility ersonic transports 19 p3201 N68-32044 Baseline instrument lands approach and landing of sup [NASA-CR-73240] Potential flight many visibility landing of supe [NASA-CR-73241] ent problems during low c transports 19 p3201 N68-32045 Simulation objectives and requirements for flight management problems during low visibility approach and landing of supersonic transports (NASA-CR-73242) 19 p3201 N68-32046 Flight management operational problems and task equirements for low visibility approach and landing of supersonic transport (NASA-CR-73243) 19 p3201 N68-32047 Integrating avionic subsyst sonic transport configurations ms into advanced super-20 p3529 N68-33189 Comparative data on liquid methane fuel and kerosene for supersonic transports [NASA-TM-X-32466] 20 p3577 N68-33584 [NASA-TM-X-32400]

Conference on sonic boom reduction in supersonic transport flight - shock wave propagation and refraction, prediction methods for acoustic attenuation, and aerodynamic engineering aspects
[NASA-SP-180]

22 p3802 N68-34907 Statistical analyses of test flight data for atmospheric effects on sonic boom 22 p3802 N68-34908 Sonic boom ground pressure measurements for SR-22 p3802 N68-34909 Supersonic transport near field design concepts for plateau pressure signature to reduce sonic boom 22 p3803 N68-34911 Pressure prediction methods, Mach number effects, and sonic boom reduction for supersonic transport 22 p3803 N68-34913 Supersonic transport design and requirements for sonic boom reduction 22 p3803 N68-34915 Integrated supersonic transport engine design for reduced lift connected sonic boom effects
22 p3803 N68-34917 XB-70 aircraft flight test data as applied to super-[NASA-TM-X-56014] 22 p3806 N68-35734 Wind tunnel tests to determine low speed high lift prodynamics of one-fifth scale variable sweep supersonic transport model [NASA-TN-D-4844] 23 p3987 N68-37365 SUPERSONIC TURBINES FORTRAN computer program for supersonic tur-omachinery blading design calculations op p1308 N68-18620 bomachinery blading [NASA-TN-D-4421] Effects of surface Mach numbers, inlet flow angle and specific heat ratio on geometric features of supersonic impulse turbine blade sections over Mach number range of 1.5 to 5.0 [NASA-TN-D-4422] 10 p1460 N68-20276

SUPERSONIC WAKES

hind cone (NOLTR-67-86)

Transition from lami

Turbulent mixing of two streams, with profiles and ecay downstream of coaxial mixing behaving in nalagous form to near and far wake problem 01 p0050 N68-10119

Flow field analysis of supersonic turbulent wake be-

Optical measurement technique for notate contour in supersonic wind tunnel, entry dynamics of spinning vehicle, wake surveys on free falling cone, and base heat transfer telemetry

wake of supersonic reentry body [NASA-TN-D-4645] 16 p2585 N68-28220

02 p0197 N68-11249

03 ±0333 N68-12314

er to turbulent flow in scar

Flow calibration m personic wind tunnel [DLR-FB-67-45] 04 p0491 N68-13457 Method for measuring starting loads in supersor wind tunnels and prediction of dynamic loads encou tered by cone-cylinder model mounted in two dime sional wind tunnel nozzle [WRE-HSA-22] 05 p0603 No6-140 OS p0603 N68-14085 Wall pressure distribution in supersonic wind tun 06 p0823 N68-16034 Measuring aerodynamic derivatives in wind tunnels and in-flight and determining aerodynamic coefficients of aircraft by frequency response [NASA-TM-X-6920] 09 p1268 N68-19350 Partial differential equation of perturbation velocity lived for unsteady flow downstream of oscillating and tunnel walls (D1-82-0703) 11 p1682 N68-20758 Design and aerodynamic characteristics of wind tun-IFTD-MT-67-071 15 p2381 N68-26490 One dimensional motion of ics of supersonic wind tunnels (FTD-MT-67-66) otion of ideal gas, and gas dynam 16 p2642 N68-27139 Design and aerodyna tunnels, and dynamom measurement of loads [ONERA-NT-122] mic balance calibration of wind ster in system for analysis and 17 p2868 N68-28992 Modified wind tunnel tube for high Reynolds number testing of supersonic aircrafts. [CAL-AD-2297-A-1] 18 p3055 N68-30172 Instrumentation and test performance of supersocascade tunnel
[DLR-FB-68-28] 18 p3056 N68-30 18 p3056 N68-30459 Water vapor condensation effects of heated air on flow in large supersonic wind tunnels [NASA-TM-X-1636] 18 p3036 N68-30398 Drag coefficient for sphere in supersonic rarefled gas 20 p3394 N68-33468 (FTD-HT-67-174) Supersonic wind tunnel investigation of acrodynamic characteristics of jet issuing transverse to wedge [NASA-CR-96722] 21 p3619 N68-34491 Supersonic and hypersonic wind tunnels using flexible plate and axisymmetric nozzles with two closed loop air compressor plants [BRL-TN-1694] 21 p3677 N68-34743 Supersonic wind tunnel tests of orifice venting paracteristics and three dimensional flow on flat NASA-CR-61241) 22 p3801 N68-35965 Effect of model forebody sha sonic wind tunnel wall interfere [NASA-TM-X-1656] pe on perforated super-23 p3984 N68-36133 Cone-cylinder models tested in supersonic wind tun-nel to evaluate effect of wall reflected disturbances on model pressure distributions model pressure distribution [NASA-TM-X-1655] 23 p3984 N68-36134 Design and construction of Mach 3 blowdown wind unnel for supersonic mixing studies, and wind tunnel instrumentation (AASU-282) 23 p4039 N68-36258 SUPPLYING Model for motivational analysis of exchange rela-tionships between consumer and supplier [NASA-CR-93189] 08 p1134 N68-17341 Sting support interference on pressure distribution on rear fuschige and tallplane in subsonic wind tunnel 04 p0436 N68-13511 Wind tunnel drag measurements on afterbodies at transonic speeds showing sting interference [RAE-TR-66298] 11 p1622 N68-21783 UPPORT SYSTEMS
NT GROUND OPERATIONAL SUPPORT
SYSTEM
NT GROUND SUPPORT SYSTEMS

Development of mission requirement profile for subsystem components from overall system profile [NASA-SP-6503] 06 p0911 N66-15683

SUPPORTS Hypersonic wind tunnel pitch damping of slender one to evaluate water cooled pitch damping support (NOLTR-68-4) 15 p2449 N68-26713 Administrative, technical, engineering, data processing, and facilities support service contractors to NASA 16 p2799 N68-27742 Support service contracting by NASA, financial anagement, and contractor versus inhouse costs 18 p3192 N68-30746 Advanced communication and navigation technology for North Atlantic aviation support system
[SRDS-RD-68-23] 20 p3526 N68-32713 SUPPORTS NT SADDLES (SUPPORTS) Analog computer simulation study of precise hybrid servo system to control experimental optical tracking [NASA-TM-X-63068] 04 p0489 N68-13807 Stoady state response of hypercritical shafts with anslationally and rotationally resisting elastic sup-13 p2157 N68-23100 Dynamic behavior of shipboard antenna masts to blast generated overpressures 14 p2366 N68-25542 Mechanical and high temperature testing of graphite Components as reactor core supports [GAMD-8371] 17 p2904 N68-28973 SUPPRESSION U RETARDING SUPPRESSORS Suppressor for protecting radio equipment from effects of voltage transients in tracked vehicles
[ECOM-2869] 02 p0187 N68-11088 installation of noise suppressors in steel plant air intake supply system [TN-6704.288] 02 p0195 N68-11778

Automatic stepwise zero suppressor instrument for pen and ink recorder used with fluxgate magnetometer 14 p2254 N68-24471 Portable suppressors for turbine engine ground

(INC/C6/P7) 14 p2187 N68-25386 ments on jet engine intake system essor cow ll p3001 N68-29887 noise reduction suppre [NASA-TN-D-4639]

Aerodynamic configuration and scale model tests of turbofan engine inlet noise suppressor [D6-5980] 20 p3398 N68-32216 Low speed wind tunnel tests on aerodynamic losses due to porous fiber metal plates used as noise suppressors in turbofan engines [DAC-33722] 20 p3399 N68-32219

20 p3399 N68-32219 Measured flyover noise intensity levels of DC-8 owered by turbofan engines with short fan discharge sects and prototype fan discharge duct suspressors AC-33524 20 p.3399 N68-32224 [DAC-33524]

Noise intensity levels during takeoff under flight path of DC-8 with JT4A-9 turbofan engines and Daisy-Ejec-(SM-23787)

A band ferrite phase shift circuit enhancement using mode suppression technique [INRL-66-77] SURFACE COOLING

Boundary hyer transition experiments on cones and spheres at supersonic speeds to determine roughness and cooling effects [C7-2007/020] 02 p0197 N68-11107

02 p0197 N68-11107 Convective heat transfer and flow friction characteristics of plate-fin type heat exchanger surfaces [NPS-59PC7O81A] 02 p0282 N68-11421

Pumping speed for carbon dioxide by action of surface cooled by liquid nitrogen [NASA-TT-F-11347] 09 p1385 N68-19364

Paleomagnetism of Marys Peak sill, 05 regon, relates its cooling history to its remanent magnetization in geomagnetic investigation 18 p3065 N68-29622

SURFACE CRACKS

ion in dynamic action, 02 p0278 N68-11672

n cracking mechanism in iron nickel chromium alloy sys [COO-1319-57/Q-16/] 09 p1353 N68-19073

e of stress strain behavior of dry poly (REPT_47-C-374) sae in cyclic testing 11 p1720 N68-21674 Hot rolling experiments for inhomogeneous surface cracking in steel jacketed Zircaloy 4 plates [KAPL-P-3406] 15 p2485 N68-26615

Crack and void elimination um oxide pellets by irradiation [AECL-3008] n on thorium oxide urani-15 p2505 N68-26799

Fracture toughness in plastics based on fracture sur-ice appearance, especially for polymethyl methacry-[NRL-MEMO-1863] 16 p2687 N68-27315

problems solved for thermal at fields in elastic solids circular cracks or plane of Linear thermoelastic problestress and displacement is weakened by external circul [NASA-CR-95411] 17 p2979 N68-28626

Approximate elastic theory solution used in fracture schanics study of a cracked elastic bar under longitu-

dinal shear stress [ARL/SM-318] 17 p2982 N68-29067 Tear growth and propagation from cracks in plastic

22 p3896 N68-35519

[TRANS-1531] SURFACE DEFECTS

Field emission scan of eathode surface to determine thomogeneities [ECOM-2870] 02 p0188 N68-11220 Surface defects in rolled ura 07 p1008 N68-16332

rface defect analysis to predict failure pressure for ductile pipe rupturing [BMI-1836] 17 p2982 N68-29120

Electrode surface damage during breakdown in (M-7180) 20 p3554 N68-32474

Initiation and extent of ductile pipe rupture, includ-ing studies of surface flaws and through-wall notches [BMI-1828] 23 p4182 N68-36758 nition of carbon

Active sites for catalytic decom-sonoxide on nickel 24 p4330 N68-37553

Photographic results of surface effects caused by little ablation [NASA-CR-61243] 24 p4355 N68-38015

SURFACE DIFFUSION

Surface self diffusion, chemical interdiffusion, arker shift and chemical drift in alloys, magnetic aterials diffusion, cation diffusion in solid solutions.

and ferrite cation ordering [AFOSR-67-2289] 01 p0125 N68-10827 Predicted fractions of recoil fission products released om solid surfaces for different diffusion coefficients ORO-3508-2] 05 p0691 N68-14013

usion kinetics of radi active carbon on beta-zir-

(LA-TR-67-321 12 p1890 N68-22669 Surface self diffusional surfaces on and surface energy in nickel

16 n2743 N68-27324 Axial flow turbine blade loading characteristics es-amined by surface, diffusion and velocity diagrams [NASA-TM-X-52307] 16 p2585 N68-27755

Mathematical model and voltage step method us to study structured liquids near solid interfaces due anamalous diffision coefficients detected near ele

17 p2836 N68-28424 Surface diffusion mechanism and coefficient from gas phase adsorption kinetics in N-SiO gel 18 p3017 N68-29615

Gold additive and X rays used with metal oxide semiconductor capacitor to study surface state charge and density of oxidized silicon surface

18 p3045 N68-30061 Surface diffusion and loading effect ters examined to increase turbine blade [NASA-TM-X-52445] 19 p3

19 p3 193 N68-31260 Surface behavior of metals studied by using surface self diffusion of iron

22 p3820 N68-34905 Total plume depletion by ground surface absorption iculated via one dimensional parabolic diffusion

24 p4290 N68-38422

SURFACE DISTORTION

Surface structure analysis on de opagation in liquid nitromethaneion wave from 02 p0285 N68-11564

Cryogenic quenching loys for rapid cooling w [NASA-CR-91344] m and titanium al-04 p0514 N68-12853

and earth surface geometry rtions in serial photography 04 p0508 N6E-13239 eric refre

Error analysis on elevation distortions of points in photogrammetric network
[ACIC-TC-1289] 09 p1340 N68-18489

Effect of two dimensions one on pressure and heat Itiple sine wave protru-fer distributions for flat plate in hypersonic flo NASA-TN-D-4437] 09 p1267 N68-19063

draining cylindrical tank in inclined plane 09 p1445 N68-19352 Surface deformations and stability of laminar fit

Imperfections of axially is [NASA-TM-X-1552] ded cylindrical shells 11 p1800 N68-21767 ic deformation on yield Neutron irradiation as surface of polycrystalline 15 p2539 N68-26337

Stress intensity factors a Griffith crack with asymme [AFOSR-68-0853] urface displacement for ally loaded surfaces 16 p2775 N68-26990 onent degredation at high

Argon laser optimal cor power levels [NASA-CR-86110] 24 p4265 N68-37868 SURFACE ENERGY

Wetting, and drying effects on soil surface energy (ECOM-2-67P-2) 04 p0498 N68-12938 Surface energy and temperature coefficient of surface energy in metals with body centered lattices [NASA-TT-F-11555] 08 p1228 N68-18116

on potamium chloride rradiation 14 p2330 N68-24678 Photolytic measurements of fracture surface energy after irre [COO-1052-9] Griffith and Barenblatt crack the conal and axisymmetric cases for it

ck theory on two dimen-for infinite bodies 15 p2569 N68-26234 Interaction of dislocat perlattice of beta brass ns and vacancies in B2 su-

15 p2538 N68-26335 Stress wave study of brittle fracture mechanics amo surface energy of glass and glassy polymers 15 p2490 N68-26657

Effect of hydrogen on surface and interfacial tension of solid nickel, iron, and cobalt 18 p3086 N68-29603

numetric physical adsorption measurements of we energy distribution on solid surfaces 21 p3649 N68-33946

Calorimetric study of effects of interphase surface free energy on ellipsoidal samples of superconductors 23 p4147 N68-36082

SURFACE EROSION U EROSION

SURFACE FINISHING

Surface treatment effects on bonding to polyethylene with epoxy, polyester, and thermoplastic resims [PA-TM-1797] 02 p0224 N68-11270

Techniques for applying special epoxy resin com pounds on stable surfaces to obtain very flat amoott surfaces over large areas in gas bearing weightlessnes

[AFAPL-TR-67-119] 09 p1347 N68-18437 Hard surfacing, electropla arburizing, nitriding, burnis lanishing, and peening of ainless steels troplating, electrodeless plating, burnishing, explosive hardening, ng of precipitation hardenable

[NASA-SP-3090] 09 p1349 N68-19343 Surface stress state and Palmqvist method of toughness testing of comented carbides with respect to sample surface preparation [ARPA-E55] 11 p1719 N68-21252

Surface treatments evaluesistance of stainless steels [EURAEC-1973] d to improve corrosion 15 p2480 N68-25815 Surface heat treatment of 20NiCrMo2 /SAE 8620/ steel by carburizing and carbonitriding

20 p3486 N68-32547 Corrosion control m aircraft surfaces [NADC-MA-6731] ce equipment for naval 21 p3622 N68-33673

Surface condition effects on exhaustion ductility by old or hot straining - analysis of steel bars and carbon (PR-7) 22 p3891 N68-35380

SURFACE GEOMETRY

Criterion of partial stationarity for overdetermined stems of ordinary differential equation and its rela-on to nondifferential constraints tion to nondifferential [NASA-CR-89926] 01 p0083 N68-10028

ne for blind persons, digital and Gaussian random field Control of reading machine near time-variant filtering, as construction from contour s or sampling 04 p0484 N68-13473

Graphical method for determining geodesic lines etween two surface points 04 p0501 N68-13514

Aerial [NASA-C Transf AD-662 Effecti AECL-Lift to

Structi NASA-Straigh face by tr [TR-11] Geode Euclidea [TR-17] Supple edictin

NASA-

OR SETOS

SURFACE Forma ungsten Work ! during no talic filan (FTD-M

Surface

(FTD-H) SURFACE NT MO lodine ORNL-Effect strength of AD-652 for protection

Microb

rocks INASA-C Chemis with hydr [FTR-3] Dipole [NASA-7 Surface REPT.-Electric layers, an Electrical

Amplif surface la [NVO-11 Angula from cari and black [AEDC-7 mospheri ECOM-Theore

Ellipson on silicon (NASA-C Atom theory an ergy in faces (NASA-C

Theore iemperati

SUBJECT INDEX Aerial infrared line scanner surveys in water INASA-CR-917761 05 p0665 N68-14987 Transformation of special form of differential equa-tion system to standard form normally used in existence theorems for periodic surfaces (AD-662231 06 p0860 N68-15236 Effective surface area of fuel clusters for resonance [AECL-2775] 07 p1029 N68-16536 Lift to drag ratios of slender, conical bodies flying at hypersonic speeds, and effects of geometric parameters on aerodynamic stability [NASA-CR-66372] 09 p1267 N68-18830 09 p1267 N68-18830 Structural formation [NASA-TT-F-11523] n analysis on noctifucent clouds 09 p1339 N68-19491 Straightening and flutten face by trial and error appro [TR-11] ng of nondevelopable sur-10 p1524 N68-20300 Geodesics and hypersurface generation in 4-D Euclidean space [TR-17] 18 p3065 N68-29566 18 p3065 N68-29566 Supplementary information for computer program predicting lifting pressure and camber shape of composite planform in subsonic flow [NASA-TN-D-4427, SUP.] 19 p3194 N68-31515 SURFACE IONIZATION Formation of negative ions by ionization from heated angsten surface 12 p1834 N68-22178 Work functions and electron emission measurements during surface ionization of iodine and sodium on tan-talic filament [FTD-MT-67-58] 15 p2417 N68-26579 Surface ionization coefficient for fast secondary par-(FTD-HT-67-49) 18 p3135 N68-30524 SURFACE LAYERS

NT MONOMOLECULAR FILMS lodine sorption mechanism in reac [ORNL-4126] 01 01 p0021 N68-10433 Effect of compressive surface layers on mechanical strength of polycrystalline ceramic bodies [AD-652399] 03 p0357 N68-12333 03 p0357 N68-12333 Adhesive polyethylene, and polyvinyl chloride layers for protective surface coatings against radioactive com-06 p0874 N68-15411 Microbiological analyses of surface layers of rocks to etermine role of microorganisms in weathering of rocks [NASA-CR-92538]

EX

189

Tu-flat

63

52

67

ekd

37

for

68

16

de

14

15

17

13

16

2

06 p0841 N68-15825 Cheminorption kinetics of adsorbed organic layers with hydrogen atoms on platinum electropes [ITR-3] 08 p1142 N68-17958 tt of double layer of metallic surfaces [591] 09 p1409 N68-19025 [NASA-TT-F-11591] Surface layer analysis using energy spectra of Auger [REPT.-67-C-201] 11 p1651 N68-21113 Electrical breakdown characteristics of solid dielectric materials and thin films - organic glass and celluloid layers, and oxide surface films [FTD-MT-24-148-67] 12 p1954 N68-22135

Electrical breakdown of oxide layer on aluminum surface as function of film thickness
12 p1954 N68-22138 plification of seismic body waves by low velocity surface layers of alluvium [NVO-1163-130] 12 p1870 N68-22959

Angular distribution measurements on light reflected from carbon dioxide cryodeposits formed on copper and black substrates [AEDC-TR-68-46] 15 p2509 N68-26404 Carbon dioxide concentration measurements in at-mospheric surface layer near New York [ECOM-2-681-3] 16 p2652 N68-27191

Theoretical and experiments tion of annular thrust surface ental studies on melt lubri-16 p2670 N68-27884 Ellipsometric method for measuring optical parameters of substrate and oxidation surface layer thickness

[NASA-CR-95355] 16 p2692 N68-28043 Atom and ion desorption energy, chemisorption theory and surface bonds, work functions and potential energy in literature review of adsorption on metal sur-

[NASA-CR-72403] 18 p3024 N68-30191 Theoretical basis of equi ns for mean wind and seric surface layer 19 p3272 N68-31644 (IERTM-ATDL-7)

Surface layer stress effects on fatigue resistance and fracturing of aluminum samples [MCR-67-421] 19 p3293 N68-31672 targed particles used to oil thickness 19 p3334 N68-31814 Coulomb backscat measure surface layer and thin fo [REPT -892/I/PL]

Hypothetical emergence mechanism of lunar maria INASA-CR-962921 20 p3587 N68-32904 Diffusion of phosphorus in oxide layer on silicon sur-

20 p3576 N68-33582 Activation overpotential-current density relation for copper electrodes with this stearic acid layer 21 p3648 N68-33869

storms based on calcu-bur surface layers 22 p3907 N68-35789

rehensive survey of oxygen X ray emission ift to evaluate soft X ray spectroscopy as tool acterizing thin layers on metals Cor (TR.2) 23 p4015 N68-37180

SUPPACE NAVIGATION Repeatability and reliability identification for Omega ship na [NRL-MEMO-1803] improvements in lane vigation system 02 p0234 N68-11126

aceborne navigational System design concepts for surface and air traffi-02 p0235 N68-11341 Phase difference navigation satellite system for air and marine navigation and traffic control [NASA-CR-86028] 07 p1087 N68-17172

07 p1087 N68-17172 m evaluated for use by air-Satellite navigation systems and maritime acroice 10 p1553 N68-20033

Hyperbolic low frequence face and air vehicles - Omeg [TDCK-50192] dio navigation for sur-13 p2104 N68-23973

Orbital parameters and equipment considerations for scritime navigation by Doppler method and satellite (FTD-MT-24-247-67) 24 p4227 N68-38034

SURFACE PRESSURE U PRESSURE

SURFACE PROPERTIES

ADHESION
ADSORPTIVITY
COEFFICIENT OF FRICTION
INTERFACIAL TENSION
SKIN TEMPERATURE (NON-BIOLOGICAL)
SPECTRAL REFLECTANCE
WALL TEMPERATURE

Recapitulation of results of hunar topography studies using radar techniques [NASA-CR-89957] 01 p0134 N68-10210 Surface structure and electrical properties of single systal molybdenum and tungsten ribbons

[COO-1417-3] 01 p0123 N68-10442 Problems of interplanetary flight - Chemical com-position, physical properties, radiation and surface pro-perties of moon and planets [FTD-MT-66-104] 01 p0135 N68-10614 01 p0135 N68-10614

Lacquer and enamel cor electrical properties of gers [FTD-MT-66-91] el coating effects on surface and ol p0126 N68-10834

Work functions, thermionic and field electron emis-ons, and adsorption, desorption, and migration on setal surfaces for simple and complex electron emit-[AD-660211] 02 p0257 N68-11124

m path problem in stu-operties Proposed solution for minim dies of surface geography and p [TR-4] 02 p0207 N68-11496 Effects of electrode proporditions in ionized gas flow ties on surface border

02 p0254 N68-11558 ents of water sur-

ned waves 04 p0493 N68-13109 rfaces prepared in ultrahigh

04 p0556 N68-13236 [NASA-TT-F-11423] Fortran 4 computer prog-plotting surface area and pore-tained by gas adsorption [NASA-TM-X-63061] m for calculating and 04 p0545 N68-13519

Surface state effects on fi [NASA-TM-X-52380] 04 p0516 N68-13637 Ellipsometric measurem-single silicon crystal with su [NASA-CR-91509] on refraction index of

04 p0474 N68-13798 Topography of defect for tion in nitrates of alkali 04 p0591 N68-13834

Catalytic effects of materials surfaces on oxygen atom recombination at low pressures [NASA-CR-91734] 05 p0652 N68-14637

Field effect measurements on thin single crystal n-ermanium chips to determine electronic structure and reperties of surface

Large signal alternating current field effect on surfaces of N and P-type indium antimonide
[TR-6]

Radioactive electrode techniques for determining effects of added electrolytes on water surface potential [NRL-6583] 06 p0792 N68-15814

Formation and properties of oxide films on silicon 07 p0953 N68-16196

Effect of screening surface on instability of negative mass type [JINR-P9-3476-2] 07 p1036 N68-16776

serat surface and elastic Coss [AM-67-11] es with special cases of Cos-nerat plate 07 p1091 N68-16810 Conductive heat transfer

in vacuum [NASA-CR-61556] 07 p1098 N68-16898 Boundary effects on spin wave mode shapes at mag-netic film surfaces

07 p1068 N68-16938 Calculations for three dimensional wings and deter-mination of surfaces for various serodynamic charac-teristics for transonic speeds

07 m0934 N68-17049 Surface properties of thermionic emitter and collec-

08 p1122 N68-17806

Theorems on using supporting function to determine urface area and properties 09 p1362 N68-18638

e absorptivity standard used to ace of temperature control surfaces [NASA-CR-93489] 09 p1341 N68-18700

Metal surface properties and bulk characteristics of catalysts for fuel cell application [NASA-CR-93426] 09 p1275 Fe68-18719

Surface tensions in m etals calculated from heats of vaportzation using polar models [NASA-TT-F-11552] 09 p1408 N68-18818

Heat transfer processes. tions over Pacific Ocean su [PB-176578] d temperature fluctua-10 p1551 N68-19518

Temperature effects on a ectrolytic chromium surfa aluminum alloy, nickel, and ace stability of astronomical [NASA-CR-94043] 11 p1713 N68-21087

Rarefled gas-surface interactions effects on satellite orbital position, attitude, and lifetime between 150 and 330 km [NASA-CR-94079] 11 p1781 N68-21126 Emission and reflects n coefficients of surface ther-

mal radiation properties [NASA-TT-F-497] 11 p1805 N68-21536

Electrode adjacent layers on ion absorbing and ion reflecting surfaces
[FTD-MT-24-276-67] 11 p1747 N68-21546

formation under impact flanding sites 11 p1680 N68-21552 Rheological model of a load, and applications to a [AFCRL-67-0583]

Development of large at maser to reduce wall surfac [AD-666298] 12 p1883 N68-21937

Hydrogen and oxygen efficients cutalysis on tungsten cts on nickel surface, am urface, and work function il planes |2 p1886 N68-22201 NASA-CR-94332]

Theorems for filar ng of surface of revolu-(SCL-DR-65-102) 12 p1916 N68-22385

Microsurface thermal rors fabricated from al and nickel coatings [NASA-TT-F-11659] ity of astronomical mis m alloy with chromius 12 p1889 N68-22401

13 p2160 N68-23486 Anhydrous titration meth acid adsorption on mineral sa for determining fatty

13 p2017 N68-23821 Surface structure, and electrical and photoelectrics properties of thin lead suffide films obtained by cuthode sputtering 13 n2139 N68-24081

SUB.

mec alloy (NR

Si

ized (AF

(NA

T

meci um d (RTS

Mi

IAD

Ch

[GA-

prop

lim diffu (IN-1

SURFA

Ra using on ra [NAS

with a

in-

Sur resist [NAS

Ru way tires

(NAS

Car

face s

Inst

Det

ing tr

[NAS

ce energy after irrad distion 14 p2330 N68-24678 [COO-1052-9] Surface pressure, skin friction, and heat transfer measurements on sharp flat plates at zero angle of at-tack and at large and small wedge angles in hypersonic [CAL-AF-2041-A-2] 16 p2583 N68-27034 kage for measuring energy ab-r vehicle surfaces during space Flight instrument pack crytion and emission of 16 p2660 N68-27333 [NASA-CR-61844] Satellite photography considered for monacture face properties of dry lakebeds /playas/
16 p2653 N68-27357 Solution for free convection of fluid enclosed between two heated coaxial cylinders 16 p2794 N68-27582 Lattice defects on surface properties of clean ger-17 p2952 N68-28402 Techniques for measuring adsorption on metal sur-faces and absorbate-substrate parameters for variety of [NASA-CR-72402] 18 p3023 N68-30090 High vacuum flow reactor for studying catalytic ac-tivity and surface chemical composition of semiconductors [AD-669691] 18 p3028 N68-30456 Equations and thermodynamical restrictions of lastic-plastic surface embedded in Euclidean three mensional space [AM-68-1] 19 p3329 N68-31320 Symmetry of helical mag face analyses by electron be [IAE-1259] netic fields in magnetic sur-am or magnetic trap 19 p3317 N68-31634 Surface-replication and three dimensional metallog-raphy for studying, slip, twinning, carbide cracking or road formation, and microcleavage in tensile tests of iron and steel [SSC-183] 19 p3295 N68-31873 Effects of earth surface features on underground 20 p3467 N68-32273 Niobium doping effect on chemical and electrical constitution of titania powders 20 p3508 N68-32307 Electrical surface properties of cleaved silicon and ermanium semiconductor surfaces 20 p3563 N68-32413 Surface properties effect on anode erosion in electric [ARL-68-0069] 20 p3449 N68-32465 Vacuum calcination temperature effects on grain d particle size of rutile and particle ([RTS-4457] 20 p3418 N68-32508 Metal cutting conditions and sulfur additions for high surface qualities in high speed steels [EE-TRANS-1764] 20 20 p3486 N68-32548 Micrometeorological field studies on energy, mo-mentum, and mass transfer above vegetative surfaces [ECOM-0447/E/-F] 20 p3521 N68-32729 Thermal desorption effects of water on surface and lectrical properties of germanium in ultrahigh vacuum 20 p3565 N68-32750 Surface properties of internal conducting semicon-actors with thicknesses below Dabye length RTS-4689] 20 p3566 N68-32796 steraction of surface-active substances and polymer (RTS-4647) ers with titanium dioxide 20 p3430 N68-33047 Influence of heat and surface treatment on fatigue properties of steel 20 p3507 N68-33602

TR-501 TR-21 nwidth from rough 21 p3729 N68-33681 Surface structure of burning solid propellants and combustion instability and deflagration to detonation transition of burning explosive substances [FTD-MT-24-248-67] 21 p3793 N68-33939 21 p3793 N68-33960 iterative solution to exact form of gravity waves on surface of two dimensional inviscid liquid in constant gravitational field

(EUR-3386.F) (ORNL-4103)

Instrument for cal scattered sky luminosit [FTD-MT-24-279-67] SURFACE REACTIONS [NASA-CR-91520] (NASA-TT-F-11470) [SC-CR-67-2595]

Deposition of silicon dioxide films on germanium by hydrolysis and surface properties of such layers [BMWF-FB-W-68-51] 22 p3830 N68-35887 Liquid shock impact effects on polymethyl methacrylate, and aluminum copper alloys 09 p1446 N68-19419 Mold release capability of Teflon film coatings fused o metal molds Rain erosion behavior of galvanic surface layers on 23 p4084 N68-36733 09 p1354 N68-19421 Evaluation of vacuum p microbiological surface co [NASA-CR-97152] Effect of surface topography on erosive action of flowing liquid be for sampling dust and nation 23 p3999 N68-36749 09 p1338 N68-19423 ic determination of ratio of emittance 23 p4064 N68-37036 Test parameter effects on material erosion by rain-[ESRO-TN-23/ESTEC/] 09 p1446 N68-19425 Water drop size, and erosion resistance of impinged ous surface pho tric effect in nickel 23 p4157 N68-37281 Mathematical model for reaction kinetics of conduc-tive heat transfer in ceramic surface 24 p4353 N68-37654 09 p1446 N68-19426 Chemisorption and surface reactions of acetylene and ethylene on tungsten surfaces studied by field electron emission microscopy Ground surface cos effects on polarization of 10 p1488 N68-20103 Hydrogen and oxygen sorption on zinc sulfide owder and interaction of oleic acid with copper sur-Geography and antipodal points location using com-10 p1489 N68-20113 24 p4256 N68-38495 erfacial reactions investigated during precision ng of chrome steel in zircon molds up to 2500 deg Satellite experiment for nitrogen gas molecule- solid surface interaction studies [NASA-CR-90101] 01 p0115 N68-10905 10 p1540 N68-20328 Crystal physics, deformation and annuealing of tetals, crystalline solids, diffusion in solids, electron sicroscopy, ceramics research, ionic media, supercon-activity, surface reactions Nonlinear interactions of apherical shock waves originating from shaped charge explosions and free sur-face on water croscopy, cera ctivity, surface 02 p0201 N68-11670 10 p1581 N68-20427 Feasibility of conducting gas-solid surface interac-tion experiments on earth satellite [NASA-CR-90527] 02 p0270 N68-11858 faces [AD-665763] 10 p1541 N68-20478 Surface treatment effect on corrosion of ziroonium loys in pressurized water and superheated steam at an temperatures [BARC-307] 11 p1654 N68-21422 03 p0350 N68-12125 on effects on oxidation conditions radiation produced space charge and lonizing radiation of and gettering on radia surface states [AFCRL-68-0045] Mass spectrometric analyses of particle-surface in-teractions resulting when oxygen atoms moving with satellite velocities strike solid surface 11 p1775 N68-21644 04 p0551 N68-13765 Hydrogen and oxygen effects on nickel surface, am-sonia catalysis on tungsten surface, and work function n surface, and was a crystal planes
12 p1886 N68-22201 X ray diffraction studies of liquid neopentane at 25 egrees centigrade [NASA-CR-94332] 05 p0617 N68-13981 Carbon monoxide adsorption on thin gold films, and Carbides, bromides,nitrides,and alloys tested for atalytic characteristics for ammonia and carbon 06 p0786 N68-15203 catalytic characteristics for a nonoxide in fuel cell electrolytes [NASA-CR-94403] 12 p1839 N68-22752 Numerical analysis of supersonic gas jet impact against rigid surface [TG-230-T535] 06 p0825 N68-15293 Correlation between Pennsylvania and California rag testers for measuring pavement surface resistance MR-633251] 13 p2048 N68-23622 drag testers for [MR-633251] Computer studies of solid surface and atom interacons of iodine vapor with tungsten 13 p2019 N68-23919 Surface interaction (REPT.-67-C-3381) 06 p0884 N68-15512 Surface reaction effects on acoustic response func-tion of composite solid propellants [UTC-2136-TSR2] 06 p0926 N68-15640 Problems in surface chemistry and molecular theory [JPRS-43491] 14 p2209 N68-24472 Surface reaction of two co-olled flame environments ercial graphites in con-Interactions between pneumatic tires and pavement (NASA-TM-X-61108) 09 p1349 N68-19387 14 p2265 N68-25343 Rain impact damage, and water erosion effects on structural materials - sircraft structures, supersonic speeds, metals, plastics, ceramics, steels, and protective Response of elastic surface to normal pressures over onstant and expanding circular area [TR-5] 15 p2569 N68-26252 Gas adsorption on homoge solid surfaces 09 p1337 N68-19401 Neoprene coating technique for rain erosion tests on glass fiber polyester laminates 15 p2415 N68-26326 utron proton surface delta interaction in spherical 09 p1356 N68-19402 odd mam nuclei [SGAE-PH-64/1968] Rain impact damage tests on polymers, ceramics, and metals 16 p2723 N68-27740 Silicate surface preparation to represent lunar soil, and ultrahigh vacuum adhesion measurements [NASA-CR-1090] 17 p2965 N68-28373 09 p1337 N68-19403 Effects of impact velocity, impingement angle, and drop size on rain erosion rate of solids [NASA-CR-1970]
Mass apectrometric method to find probability of monatomic gas in free molecular flow, surviving sur-face collision and removal from gas phase 17 p2923 N68-28401 09 p1338 N68-19408 pact laboratory device for m solids 09 p1324 N68-19410 Demonstration of existence of surface phase of gold 17 p2899 N68-28444 Water jet erosion behavior, ties of stainless martensitic stee ed mechanical proper-Chemisorptions to find active surface area and study urface reactions during oxidation of granular gra-hitized carbon black 09 p1354 N68-19414 ctric materials, coatings, at supersonic speeds 09 p1356 N68-19415 17 p2838 N68-28518 Nonlinear optical effects of intense monochromatic ight beam interaction at silver and cesium antimonide hotocathode surfaces Nickel electroplated noncon region protection of aircraft at tive coatings for rain 09 p1354 N68-19416

itation damage tests on astics 09 p1445 N68-19417

09 p1445 N68-19418

ed erosion shock tests on glass, steel,

[AM-68-5]

Scattering of beam with finite bear spedance surface

22 p3854 N68-34891

22 p3972 N68-35303

22 p3860 N68-35361

Static and dynamic solutions for deformation of

Analysis of compremible fluid flow over deformable

EX

9419

n on

9421

n of

9423

1425

nged

1426

1103

lfide

1113

deg

1328

of

427

OR BUT-

478

422

am-tion

201

for

752

mia

919

огу

172

ent

343

252 ous

126

cal

140

oil.

173

of

101

44

udy

18

183

73

of

(AD-672093) on radar scattering th [NASA-CR-89977] [ORNL-P-3202]

(NRC-9635) [NASA-CR-91355] Runway surface texture of way braking friction coef [NASA-TN-D-4323] Mathematical analyses a face scattering [BAT-197A-10-3] Instrument for m [BM-RI-7095] Definition of location and height of roughness initiat-ing transition without additional drag for supersonic flow [NASA-TT-F-11558]

SUBJECT INDEX Surface reactions, metallurgy, and fracture echanics in stress corrosion cracking of high strength (NRL-MEMO-1864) 18 p3178 N68-30111 Surface recombination coefficients of hydrogen atoms in zinc sulfide and metal oxides [M-7206] 20 p3417 N68-32446 Methyl free radicals fo ized on porous glass [AFOSR-68-1313] rmed by photolysis and stabil-20 p3420 N68-32618 Kinetic theory and gas-surface interactions in measurements of upper atmospheric density [NASA-CR-96311] 20 p3473 N68-33272 e interactions in mea-Surface interaction between polycrystalline rhenium 20 p3432 N68-33373 Thermal accommodation coefficients of helium, neon, argon, krypton, and zenon on potassium and lithium surfaces 20 p3539 N68-33421 Effects of surface-active agents on structural and achanical properties of aqueous dispersions of titani-20 p3434 N68-33607 Measurements of particle emission produced by in-teraction of high power laser radiation with tungsten 21 p3701 N68-34718 Mathematical model for predicting behavior of vor-tex rings formed by free falling drops impinging on free surface 22 p3856 N68-35050 Chemical reactions on clean surfaces using modu-lated molecular beam techniques [GA-8642] 23 p4007 N68-36363 n transfer from regressing solid acoustic losses of T-burner 23 p4191 N68-37408 plecular momentum tra-cilant surfaces, and acou Reaction mode effects on pore structure develop-ment observed on active carbon in gaseous carbon dioxide 24 p4271 N68-37504 Irradiation effects on surface activity and hydrogen diffusivity in steels [IN-1200] 24 p4270 N68-38461 SURFACE ROUGHNESS Radar scattering and surface roughness analysing Kirchoff-Huygens method, and literature survey 01 p0028 N68-10090 Bistatic scattering from statistically rough surfaces with emphasis on lunar-like surfaces [NASA-CR-90091] 01 p0098 N68-10346 in-pile heat transfer stud poled reactor fuel elements ies of roughened helium 01 p0093 N68-10708

dar reflectivity me Radar reflectivity measurement of lunar surface oughness for selecting possible landing sites NASA-CR-96137] 19-p3365 N68-31594 Heat transfer effect on drag due to surface roughness in supersonic turbulent boundary layer [NASA-TN-D-4746] 20 p3463 N68-33054 Sea water waves and wind stress effects on surface roughness at air sea interface [TR-231-18] 22 p3904 N68-35294 Zehender technique for measuring surface roughness up to 20 microns, using replica films and interferome-[RFP-1040] 22 p3918 N68-35695 Profilometer accuracy and methods for measuring roughness of metal surfaces 23 p4074 N68-36300 Lunar surface infrared emission and surface (DI-82-0717) 23 p4171 N68-36907 Theory for effects of stability on wind profile under additions of inhomogeneous terrain roughness rrain roughness 24 p4288 N68-38410 Modification of wind profile due to changes in sur-face roughness 24 p4288 N68-38411 Surface roughs ness effect on flared ogive cylinder at hypersonic speeds [VKJ-TN-41] 24 p4248 N68-38449 SURFACE ROUGHNESS EFFECTS Scattering and depolarization of electromagnetic waves by rough surfaces [NASA-CR-89984] 01 p0027 N68-10004 Profiles and power spectra of some off-runway land-02 p0195 N68-11755 arface treatment effects on stainless steel corrosion Geometric optics approach to calculating surface roughness effects on microwave emissivity from Moon and Venus [EURAEC-1709] Q3 p0352 N68-12380 Determination of effective electrolytic surface area of sintered and foil silver electrodes subjected to oxidation at various current densities in ammoniscal medium 04 p0572 N68-12966 Surface roughness and waveness effects on thermal resistance between contacting solids [NASA-CR-91440] 04 p0594 N68-13170 04 p0594 N68-13170

itions effect on wet run ats created by aircraft

05 p0606 N68-14903

heterogeneity on thin

06 p0786 N68-15043

06 p0802 N68-16000

08 p1107 N68-18138

09 p1368 N68-18784 ne cutting variables ef-ower requirements 10 p1533 N68-19619

11 p1662 N68-21493

Surface roughness length analysis of 150 meter etocrological tower at Cape Kennedy launch com-

Geometric optic techniques for determining scattering from rough surfaces for finite distances between transmitter and receiver
[D1-82-0657]

11 p1662 N68-21493

plex NASA-TM-X-536901

Statistical analysis on machin fact on surface roughness, and p

d solutions for rough sur-

surface texture of rock 08 p1181 N68-17937

08 p1140 N68-17427 INASA-CR-931971 Surface roughness effects emittance of vapor deposited rh [NASA-TM-X-1514] cts on normal spectral rnium 09 p1354 N68-19347 Asymptotic method roughness effects on mons determining surface ic gas scattering 16 p2648 N68-27773 Effects of pipe surface rou and heat transfer coefficient [RLO-1954-2] ness on turbulent flow 16 p2649 N68-28042 One dimensional energy spectra in turbulent houndary layer with analysis of surface roughness effects on spectral shape

Flow structure and velocity distributions in turbulent boundary layers over flat surfaces with roughness ele-ments

Shortened analysis of possible similarity solutions for low in turbulent boundary layer after change in sur-

Turbulent flow of water over rough inside surfaces of test pipes

Probability function over distribution of particles scattered and specularly reflected from rough surfaces 18 p3121 N68-29616

Effects on heat flux rate of heating surface material using plated and unplated stainless steels during nucleste boiling

Pitot tube and hot-wire flowmeter data for turbulent oundary layer on rough surfaces in adverse pressure radients

[NPL-AERO-1242]

NSRDC-26591

Doppler return from random [NASA-CR-92134]

12 p1859 N68-22133

13 p2054 N68-24005

ough surfaces 14 p2221 N68-24663

16 p2648 N68-27847

18 n3186 N68-29900

18 p3062 N68-30110

[CEM67-68CYL10] 17 p2874 N68-29202 Surface roughness effects on fall pattern of cylinders and disks in viscous fluids 20 p3459 N68-32339

Effects of sulfur, lead, and tellurium additives on cutting forces in cutting low carbon steels 22 p3885 N68-35791 Solutions for pressure and streamline disturbance elds in discontinuous supersonic flow past ablating

(DAC-62375) 25 p4044 N68-36108 Scale modeling antenna systems for aircraft and mis-siles with anechoic chamber evaluation and use [NASA-CR-97114] 23 p4018 N68-36169

Lunar landing module reflectivity model based on Surveyor and Orbiter photographs of lanar craters, hills, and boulders [NASA-CR-92342] 24 p4223 N48.37732 SURFACE STABILITY Surface deformations in draining cylindrical tank nd stability of laminar film on inclined plane 09 p1445 P668-19352 Soil engineering probl program studied for appl [NASA-CR-95060] tochniques, and research on is lunar exploration 15 p2557 N68-25836

16 p2798 N68-28326 face kinetics of vacua

23 p4149 N68-36280 Stochastic stability of heavy liquid free surface en-closed in partly filled primastic cylinder subjected to random vertical acceleration [NASA-CR-90009] 23 p4052 N6B-37231 24 p4255 NAS-38437

SURFACE TEMPERATURE

NT SKIN TEMPERATURE [NON-BIOLOGICAL]

NT WALL TEMPERATURE Evaluation of sea surface temperature as measures y Nimbus I satellite high resolution infrared radiome [NASA-TN-D-4078] 01 p0087 N68-10222

Non-adiabatic heating recomment and evolution d anticyclones and cooling affects on of mid-latitude cyclones w-471 / 03 p0365 N68-12600

od surface air temperature growing cross 03 p0366 N68-12714 ellier infrared data for sture 05 p0650 Net-14108 Computer processing of undetermining see surface temper [NASA-CR-91732]

Equations, charts, and analysis to calculate theoreti-cal temperatures of thin film solar cells in earth orbit [NASA-TN-D-4331] 05 p0754 N68-14270 Digital computer program for prediction of Mars sur-ce temperatures

Airborne infrared radiation thermometer surveys of Hudson Bay water surface temperature [TR-36] 10 p1523 N68-20264 seter mirveys of ed in steel rotors of tax-Generator 11 p1627 N68-20942 Skin effect and heating at discharge Canberra Homop [EP-RR-2]

rol systems for minimiz-m satellites 11 p1697 N68-2[152 ing temperature variations w [BMWF-FB-W-67-32] Surface temperature a of Pacific northwest [DR-28] limity content along count 11 p1691 N6E-21420

Installation and error mocouples used in surface [AECL-3062] us methods for ther-13 p2172 N68-24123 Temperature distribution with internal heat libers [NASA-TT-F-11826] time for rods or sheets as Fourier law 16 p2798 N68-28244

re variations due to sea as gulf count 15 p3109 N68-30053 Mesoscale surface temperar breeze circulation on upper To [REPT.-6]

transients in sliding contra [AFML-TR-67-346] 19 p3385 N68-31400 Sequence of considering advection, modification, at diarnal variation in forecasting surface tempera-

M-5431 20 p3522 N64-32777 Aerial measurement of radi Mt. Fuji and Tokyo areas appl and water surface temperature [NASA-CR-96693] 21 p3717 N68-34246

d ocean currents ob-ith infrared detector 21 p3666 N66-34261 Sea surface tempers served from Nimbus 2 se (NASA-TM-X-604121 Summery data on temperature and humidity measurement in urban areas of Dallas, Tease
[AD-672071] 21 p3719 N68-34663

Duration and distribution of anomalies in ocean surface temperature between 1948 and 1959 measured by weather ships and countal stations.

[M-7374] Lunar surface infer roughness analysis [DI-82-0717] -23 p4171 N68-36907

[NASA-CR-97280]

Optimal processing of Nimbus 2 data for observation of ocean surface temperature patterns and synoptic

Reduction of infrared scan data on Martian surface

23 p4096 N68-36931

Reduction of infrared sc	an data on Martian surface
[NASA-CR-97272]	23 p4173 N68-37273
SURFACE TENSION U INTERFACIAL TENS	
U INTERFACIAL TENS	ION
SURFACE TO AIR MISSILE NT BLUE GOOSE MISS	S
Ordinal solution of track	est auserit auseign anghlum
tuing two dimensional mod	cal pursuit-evasion problem
	13 p2176 N68-23934
SURFACE TO SURFACE M U BLUE STREAK MISSI U INTERCONTINENTA U MINUTEMAN KISMI	ISSILES
U INTERCONTINENTA	L BALLISTIC MISSILES
U MENUTEMAN ICBM	
U POLARIS A) MISSILES	to produce deserved.
U SHILLELAGH MISSIL	ES
SURFACE TO SURFACE RO U HONEST JOHN ROCK	
U HONEST JOHN ROCK	CET VEHICLE
SURFACE VEHICLES NT AIRCRAFT CARRIE	De .
NT BOATS	The American Street Committee of the Com
NT CAPTURED AIR BU NT CARGO SHIPS	BBLE VEHICLES
NT LUNAR MOBILE LA	BORATORIES
NT LUNAR ROVING VE	EHICLES
NT LUNAR SURFACE N NT NUCLEAR POWERE	D SHIPS
NT ROCKET PROPELLE	ED SLEDS
NT BOATS NT CAPTURED AIR BU NT CARGO SHIPS NT LUNAR MOBILE LA NT LUNAR ROULE LA NT LUNAR SURFACE N NT NUCLEAR POWERE NT ROCKET PROPELLE NT SATELLITE COMMINT TRUCKS	INICATIONS SHIPS
NT WALKING MACHIN	
Mathematical model for i cars traveling at high velociti	
Assetsted hibliographic	07 p1037 N68-16969 s on air cushion vehicle
Annotated bibliographies technology [AD-664305]	on air cusmon venice
[AD-664505]	09 p1269 N68-18319
Optimal vehicle control fo [ESL-R-327]	r merging problem 10 p1617 N68-20397
	p to 1967 on tracked vehi-
cles	
[TDCK-49992]	13 p2076 N68-23902
Acoustic measurements of road truffic and method for	f noise from freely flowing
levels	
[NPL-AERO-AC-29]	14 p2298 N68-24777
Chemical composition an evaluating automobile fuel fil	d analysis of test dust for
[A11]	15 p2472 N68-25797
Nonlinear vibration pro- vehicular engineering [WTHD-4]	blems in road and rail
(WTHD-4)	22 p3974 N68-35640
Survey of plastics sandwick	constructions and poten-
Survey of plastics sandwict tial applications of technique [PLASTEC-34]	4
[PLASTEC-34]	23 p4179 N68-36189
electromagnetic suspension of	perconductive magnets to of high speed ground trans-
Potential application of su electromagnetic suspension of port vehicles [TRW-06818-6009-R000]	
[TRW-06818-6009-R000]	23 p4149 N68-36247
SURFACE WAVES	
NT BAROCLINIC WAVE	S
SURFACE WAVES NT BAROCLINIC WAVES NT GRAVITY WAVES NT SOMMERFELD WAV	FS
Measurements on detonation	on waves in soft and sandy
soils	after a factor of the state of
THE SCHOOL SERVINGS	02 p0240 N68-11552
Surface wave propagation of	over viscoelastic materials
[DA-358/7]	06 p0920 N68-15336
Surface wave and open car antennas	vity principles in backfire
	02 -0043 N40 14393
Progress results for studie	s in seismic phenomena
Progress results for studie and earthquakes and explosion [AD-663219]	66 -0000 NAC 14000
[AD-063219] Interface stability analysis f	07 puyy2 N68-16878
	th surrounding gas flow
[D1-82-0699]	10 p1572 N68-19767
Upwelling in bounded or steady wind-driven currents [RM-5594-NSF]	ceanic basins similar to
[RM-5594-NSF]	10 p1522 N68-19988
Propagation and amplific waves on hexagonal piezoelec	ution of surface elastic
waves on hexagonal piezoelec	tric crystals 11 p1767 N68-20702
Light scattering technique	for production and mea-
color scanning menudue	to production and mea-

Light scattering technique for production and mea-trement of ultrasonic surface waves and dispersion of

13 p2109 N68-23855

SURVEILLANCE

tron density profile in unmag	probe for measuring elec- netized gaseous plasma 17 p2852 N68-29103
Theoretical study of surf	ace wave propagated on
Theoretical study of surf temperate plasma column wit	h collisions 18 p3141 N68-29629
Air flow measurements is	
surface waves [AD-670539]	19 p3303 N68-31076
Surface wave propagation minum cylinder submerged in	water 22 p3913 N68-34818
Optical properties of wa	ve churned sea surface,
Optical properties of wa energy spectrum and length o tion of energy dissipation in st [JPRS-46563]	urface layer of sea 23 p4054 N68-36413
Mathematical estimation of tion in surface layer of sea	f turbulent energy dissipa-
manufacture and a second of the second of	23 p4054 N68-36414
Method for computing of churned sea surface	tical properties of wave
Integral supresentation for	23 p4055 N68-36416
Integral representation fo generated by steady disturban	ces
Froude number scaling a	24 p4244 N68-37584 and correlation of wind
Froude number scaling a stresses at air-water interface.	and at all fetches
[TR-231-23] SURFACES	24 p4253 N68-38245
Heat transfer rate measures	ments to lifting surface of
(AASU-273)	06 p0924 N68-15305
Nonlinear lifting surface the [TR-48]	ory for low aspect ratio
[TR-48] Measure theoretical found	
theory	and the same are
[AROD-1685-27-M, PT. 1]	13 p2096 N68-24185
SURFACTANTS	THE STREET
Laminar jet used to at monomolecular barrier layer o absorption at liquid-gas interfa	udy surfactant formed effect on resistance to gas
	18 p3022 No8-30078
Effect of surface active n layers on plastic flow before ru in metals such as tin, lead, and [NASA-TT-F-11737]	naterials and adsorption opture and plastic rupture
in metals such as tin, lead, and [NASA-TT-F-11737]	8 p3090 N68-30183
SURGES	and the second second
Dynamics code CIRE for st	udying transients in boil-
[EUR-3665.F]	08 p1204 N68-17432
Voltage surges induced on ing strokes	overhead lines by lightn-
	12 p1851 N68-22032
Finite differences for calcu- teristics in gas turbines	A STORY OF THE RESERVE
(FTD-MT-24-155-67)	13 p1996 N68-24262
Computer programs for low of surges	dness spectrum analysis
[ISAV-TR-1] Multichannel space-time sys	17 p2920 N68-28799
lating reactor transients [KAPL-M-6742]	19 p3308 N68-30986
Iterative method for transi	
ducer array (SR-1)	19 p3277 N68-31395
Design and operation of tran [ECOM-2953]	
[ECOM-2953] Transient response and ba	
linear antennas	
[NRL-6717] Mathematical model for	20 p3437 N68-32913 calculating electrical
Mathematical model for transients in defective structur	e of rutile semiconduc-
[ARL-68-0065]	21 p3755 N68-34500
Solid state pulsed coagulating	diathermy instrument
Solid state pulsed coagulating [NASA-CR-84757]	dinthermy instrument 14 p2258 N68-25290

SPACE SURVEILLANCE [GROUND BASED]

NT SPACE SURVEILLANCE [SPACEBORNE]

Experimental measurements of turbulence structure, heat and momentum flux, and vertical temperature difference over ocean waves [REPT.-08849-1-P] 13 p2102 N68-24153

Computed and experimental solitary wave shapes and deformations on 45 deg slope [URS-670-2] 13 p2111 N68-24212

Nonsteady solution for surface wave equations of small finite amplitude

Microwave surface wave probe for measuring elec-

16 p2645 N68-27595

SUBJECT INDEX Satellites for independent surveillance of ship and aircraft positions and undelayed voice and digital com-[REPT.-67-C-316] 14 p2220 N68-24501 Sensing oceanographic condition from aircraft and project plans for remote sensing from satellites [NOO-IR-68-18] 18 p3070 N68-30759 Continuously calibrated microwave radiometer for thermal radiation measurements 20 p3481 N68-33402 SURVEILLANCE RADAR Improvement possibilities in methods and devices used for Doppler surveillance radar operator training [IZF-1968-7] 15 p2399 N68-25762 Cloud detection capability of operational AN/TPQ-11 radar sets during 1966-1967 [AFCRL-68-0269] 20 p3520 N68-32490 20 p3520 N68-32490 nernal reconnaissance and satellite surveillance techniques - television systems, radar scanning, microwave radiometry, lasers, infrared imaging, and photographic observations [AGAD-CP-29] Photographic recording method for signals of side looking radar system 20 p3481 N68-33403 Design and field evaluation data on improved brightness radar display equipment for airport tower in-stallation /BRITE-1/ [SRDS-RD-68-28] 20 p3530 N68-33587 Airborne radar measurements on polar ice sheet [ECOM-2887] 24 p4250 N68-37759 SURVEYING U SURVEYS SURVEYOR LUNAR PROBES Optical triangulation method for determining lunar surface elevation relative to Surveyor spacecraft [NASA-CR-90512] 02 p0271 N68-11607 Comparison of Atlas-Centaur /Surveyor/ and iterative guidance mode guidance concepts
[NASA-TM-X-53674] 05 p0687 N68-14647 Mariner, and Voyager planetary-interplanetary flight projects, and Surveyor lunar program [NASA-CR-91775] 05 p0745 N68-15004 Surveyor 4 lunar probe mission description and per-[NASA-CR-92707] 07 p1085 N68-16262 Operational capabilities, methods of deployment command and control, areas of lunar operation, and television viewability of Surveyor lunar surface sampler [NASA-CR-93205] 08 p1244 N68-17411 Surveyor 5 configuration, television picture transmission, and experiments on measuring chemical elements in lunar surface [NASA-SP-163] 08 p1244 N68-17844 Surveyor 5 measurements of chemical elements and magnetic properties of lunar surface composition 08 p1239 N68-17845 Mission objectives and design data on Surveyor 5 configuration and instrumentation 08 p1245 N68-17846 Surveyor 5 television transmission of lunar surface photographs 08 p1245 N68-17847 Lunar surface mechanical properties derived from Surveyor 5 photographs 08 p1239 N68-17848 Surveyor 5 data on lunar surface temperatures and thermodynamic properties 08 p1239 N68-17849 Surveyor 5 television picture transmission of solar corona at landing site 08 p1240 N68-17850 Chemical analysis of lunar surface at Surveyor 5 08 p1240 N68-17851 Surveyor 5 magnet measurements of lunar surface electromagnetic properties at landing site nding site 08 p1240 N68-17852 Chemical element abundances for common rock types compared with preliminary chemical analysis of lunar surface at Surveyor 5 landing site (he.1240, Nos., 1783) 08 p1240 N68-17853 Surveyor 5 landing site contamination from solid alu-ninum oxide particles in main retro exhaust 08 p1240 N68-17854

Flight performance characteristics of Surveyor 2 spacecraft and its subsystems [NASA-CR-93490] 09 p1430 N68-18657

Real time and postflight data used for reporting flight performance characteristics of Surveyor 3 spacecraft

SUB

(NA

INA

FI

|NA

C

Su [NA [NA

Su [NAS

NA.

Op

Ph [NAS

Pri [NAS

Spi meter hunar [NAS

(NAS

Ro

Top

Soil ples fi

SURVEY

Eng

Ch tific r 7 huni [NAS EX

501

and

759

for

402

162

PO.

192

-

103

87

139

07

47

ght

04

62

nt nd ler

11

44

45

5

46

47

nd

10

51

ce

52

ck of

53

54

57

and its subsystems, include mechanics/surface sampler [NASA-CR-93492] ling TV equipment and soil 09 p1430 N68-18658

Flight performance of Surveyor 4 spacecraft and 09 p1430 N68-18659

lysis of Surveyor 5 pment and alpha scattering device data (NASA-CR-93488) 09 p1430 N68-18660

Surveyor 6 spacecraft flight performance characteristics, including data on television equipment, alph

Surveyor lunar progra 10 p1598 N68-19614

Current and future spacecraft concepts for un-sanned interplanetary explorations 10 p1598 N68-20546

Surveyor 6 mission [NASA-CR-93909] 11 p1781 N68-20969

Surveyor 6 scie (NASA-SP-166) 11 p1789 N68-21443

Surveyor 5 mission [NASA-CR-94251] and performance 12 p1971 N68-21934 Systems analysis and enus 67, Mariner 4, 1

pering data on Mariner Mars 69, and Surveyor ry missions technology 17 p2977 N68-29308 NASA-CR-95711) s for Ranger, Mariner, and

19 p3280 N68-31764

Flight performan n of Atlas-Centaur for Surveyor spacecraft SC-2 [NASA-TM-X-1616] 20 p3594 N68-33332

Principal scien [NASA-SP-173] Surveyor 7 minion 20 p3599 N68-33553

Spaceborne phoi meteorological ph hunar shots, and Ge [NASA-SP-168] of cloud cover and other a. Surveyor and Orbiter walk and target docking 22 p3958 N68-34870

ty verification for Sur-taur launch vehicle 23 p4176 N68-36971 Electromagnetic compatibil veyor spacecraft and Atlas Cer (NASA-TM-X-1673)

Chemical analysis of rocks and soil and other scientific results obtained for Tycho landing site by Surveyo 7 lunar probe [NASA-CR-97347] 24 p4343 N68-38246

Rock fragments and grain size of lunar soil at Surveyor 7 landing site

24 p4343 N68-38247 Topography of Tycho lunar landing site from Surveyor 7 television pictures

24 p4345 N68-38248 Mechanical properties of Surveyor 7 Tycho landing site compared with properties of maria lunar landing

24 p4343 N68-38249 Soil mechanics surface samp ples from Surveyor 7 Tycho las er and analysis of sam-

ding site 24 p4345 N68-38250 Lunar surface temperatures and therma: cnew-teristics at Surveyor 7 landing site. 24 p4343 N68-38251

Radar reflectivity analysis and lunar magnetic materials studies based on Surveyor 7 data 24 p4343 N68-38252

Chemical analysis of h Tycho landing site ar surface at Surveyor 7 24 p4344 N68-38253

Geological setting of Surveyor 7 Tycho landing site, including rock types 24 p4344 N68-38254

rveyor 7 post-landing tracking data analysis, and rmining selenocentric location of probe and sentric locations of tracking stations 24 p4344 N68-38255

Argoe-ion laser beam for pinpointing specific loca-tions on lunar surface by using detection sensitivity of Surveyor 7 vidicon camera operating in integration 24 p4265 N68-38256

Solar corona photographs taken by Surveyor 7 lunar probe 24 p4344 N68-38257

SURVEYOR PROJECT

Engineering and scientific work on Mariner 4, Mariner Venus, Mariner Mars 1969, Voyager, and Sur-[NASA-CR-90544] 02 p0272 N68-11643 Lutar surface, temperature, mechanical propesties, and geological observations from Surveyor 5 spacecraft soft landing [NASA-CR-91361] 04 p0573 N68-13046 04 p0573 N68-13046

netary quarantme requiring of Surveyor space in altrasonics for r uirements studies, includin scraft, probability of spec vering microorganism 06 p0772 N68-1513 NASA-CR-91815]

Surveyor, Syncom, In ns technology satellite 06 p0917 N58-160 Electrical power systems of 5 sat 1, intelest 2, and application (SSD-70049R)

Surveyor Mission G fl phase to second lunar day [NASA-CR-93968] cos from tra 11 p1787 N68-20872

eveyor project, Mariner program, and Voyager ect research activities and Deep Space Network 14 p2352 N68-25649

Bibliography and index of presentations using Surveyor [NASA-CR-95995] lex of papers, reports, and oral veyor lunar data 19 p3388 N68-31422

Mariner Mars 1969 project, Surveyor soft landing, and advanced planetary missions technology [NASA-CR-96383] 20 p3590 N68-33246

SURVEYOR I LUNAR PROBE

Data processing systems, thermal subsystems, design, nd mission performance summary for Surveyor I

[NASA-CR-93493] 09 p1429 N68-18654 Performance analysis of electric power, data link signal processing, and flight control systems of Sur-veyor I spacecraft [NASA-CR-93491] 09 p1429 N68-18653 09 p1429 N68-18655

of propulsion system r, radar altimeter, and telev craft 09 p1430 N68-18656

Systems analysis and flight perfor Centaur launch vehicle with Surveyor [NASA-TN-D-4580] 13 p.2 sance of Atlas veyor I lunar probe 13 p2156 N68-24338

Surveyor I footpads 18 p3 66 N68-30305 (SAS-425-5) Surveyor 1 and 2 trajectories determined from

(NASA-CR-96719) 21 p3771 N68-34318

SURVEYOR 2 LUNAR PROBE

Flight performance analysis of Surveyor 5 pacceraft, including TV equipment and alpha scatter-09 p1430 N68-18660 Surveyor 1 and 2 trajectories determined from

[NASA-CR-96719] 21 p3771 N68-34318 SURVEYOR 3 LUNAR PROBE

Television pictures tras surface by Surveyor 3 [NASA-CR-95875] d to earth from lunar 18 p3165 N68-30166

SURVEYOR S LUNAR PROBE

and performance 12 p1971 N68-21934 selected selevision pictures face transmitted by Surveyor 5 [NASA-CR-97213] d mossies of lunar sur-23 p4169 N68-36661

SURVEYOR 6 LUNAR PROBE

is of Surveyor 5 sent and alpha scattering device data [NASA-CR-93488] 09 p1430 N68-18660 light performance anal-

22 p3965 N68-35254 SURVEYOR 7 LUNAR PROBE Chemical analysis of rocks and soil and other scien-ic results obtained for Tycho landing site by Surveyor [NASA-CR-97347] 24 p4343 N68-38246

Rock fragments and grain size of lunar soil at Surveyor 7 landing site 24 p4343 N63-38247

Topography of Tycho h veyor 7 television pictures landing site from Sur-24 p4345 N68-38248

24 p4343 N68-38249

Soil mechanics surface sampler and analysis of samples from Surveyor 7 Tycho landing site 24 p4345 N68-38250

24 p4343 N6B-38251

reflectivity analysis and 7 data studies based on Surveyor 7 data and serveyor 7 data and 24 p4343 N68-38252

er surface at Surveyor 7

24 p4344 N68-38253 al cetting of Surveyor 7 Tycho landing site, ack types

24 p4344 N68-38254 king data analysis, and cation of probe and 24 p4344 N68-38255

24 p4265 N68-38256 ten by Surveyor 7 lune 24 p4344 N68-38257

SURVEYS

GEODETIC SURVEYS

Statistical appro-continental defense [ORNL-TM-1919] a of public opinion on 95 p0759 N68-14120 Maps and charts based or S. Naval Oceanographic Of [REPT.-67-52] tic surveys by U.

05 p0656 N68-14977 nuclear reactor site (EUR-3884.I) 09 p1335 N68-19014

Dielectric theory and electrical property survey for polymer materials [REPT.-67-C-257] 13 p.2089 N68-23880

Congressional survey of it on NASA program, approp strial executive opinion ions, and scientific and 14 p2377 N68-25425

Economic impact analyses input-output coefficient tables (NASA-CR-95093) survey procedures, and 15 p2580 N68-26753

16 p2751 N68-26966 Rocket and satelli (NASA-CR-88066) le of military flight crews 16 p2602 N68-26997

Survey on research funious in magnetic f [NP-TR-1640] 16 p2738 N68-28074

Aerial instrumental techniques for survey on [NASA-TT-F-11887] remote se

omma ray spectrum 24 p4205 N68-38290 Airborne surveying atmosphere, soils, and [ONI-TRANS-2634]

Survey on magnetofluid dy Austria, Germany, Sweden, Switzerland, and Netherlands [ARL-68-0062]

Materials, and fire control methods for enhanced priched atmosphere 09 p1288 N66-18746

11 m1625 NAR-21519 as for army aircraft ac-

Handbook of crashwo cident survival and escap [AVSER-66-18] 19 p3200 N68-31854 Mammalian cell and ma to ionizing radiations (BNL-12581) al survival after exposure

23 p3999 N68-36719 Servival following Air Force aircraft accidents from 1938 through 1963 [AD-674002] 24 p4198 N68-38470

SURVIVAL EQUIPMENT

pilot ejected over arctic regis [AMD-TR-68-1] 18 p3015 N68-30686 SUSCEPTIBLITY (MAGNETISM)
U MAGNETIC PERMEABILITY

SUSPENDENC [HANGING]
NT MAGNETIC SUSPENSION

Elastic expension apparatus for determining mo-ents of inertia by ground vibration tests 08 p1112 N66-17462 led anymu

09 p1441 N68-18649

OTEL SERVICE

SUB

NA NA

high

(RA

DR

R

C

E

D

C

func desi (RE

M

T

F

RE

E

T

N

H

F

C

0

N

RE

D

06 p0816 N68-15995

07 p0969 N68-16425

m for nickel iron tape cores, teretic magnetization curve, and

T

thyr

Statical analysis of elastic suspension systems with SWEEP ANGLE
U LEADING EDGE SWEEP SWIRLING Mathematical analysis and experimental results on shape and structure of swirling jet diffusion flames [TAE-87] extensional springs [NRC-10121] 21 p3787 N68-33841 SWEEP CIRCUITS SUSPENDING [MIXING] Flat plate laminar flow between fixed concentric cylinders Solid state plan position indicator resolved sweep rinding techniques and stu-ity after fatty acid addition Ferrofluids prepared by grind died for viscosity and stability and magnetic field application [NASA-CR-94540] RD-68-291 21 p3660 N68-34313 24 p4243 N68-37499 SWEEP FREQUENCY 13 p2012 N68-23349 SWIRLING WAKES
U TURBULENT WAKES Prediction techniques for thermal conductivity of to phase suspensions Pulsed, swept frequency topside ionospheric sounder for Alouette 2 [DRTE-1189] 03 p0417 N68-12129 SWITCHES 15 p2575 N68-26044 CAPACITANCE SWITCHES
CRYOTRONS
ELECTRIC RELAYS
ELECTRIC SWITCHES Synchronizer for delayed trigger circuit of oscil-loscope sweep to study long series of nanosecond pul-Nucleation rate related to crystal growth and suspen-sion density over wide range of supersaturation upernaturation 18 p3122 N68-29679 ses [IFVE-SEF-67-12-K] 11 p1700 N68-21451 Thermal energy produced by thermal cycling fer-rimagnetic suspension in magnetic fields [EUR-4039.E] 21 p3628 N68-34441 FLUID SWITCHING ELEMENTS NT SWITCHING CIRCUITS
NT THERMOSTATS
NT TRIGATRONS U LEADING EDGE SWEEP Rheological behavior of ellipsoid particles suspended in incompressible Newtonian fluids SWELLING High power, broadband, single pole 32-throw switch or use with 32-port L-band linear array antennas NEL-1468] 01 p0036 N68-10242 Swelling m sents of irradiated fuel spheres by 23 p4043 N68-36062 for use with 32-port L-band linear array american [NEL-1468] Ol p0036 N68-10242 Absolute pressure switch design and fabrication, and temperature and vibration test data [NASA-CR-61479] 06 p0815 N68-15551 Visual study of large-scale turbul turbulence effect on dis-[AERE-M-1977] 13 p2107 N68-23672 Swelling techniques app ed to composite binders 23 p4094 N68-36428 and propellant (AD-667250) 14 p2336 N68-25169 SUSPENSION SYSTEMS (VERICLES) Linear and circular translational case vibration ef-fects on indication accuracy of electrolytic level and Nonlinear conti n creep model for swelling of Dynamics of simple air-supported vehicles operating over irregular guideways [DSR-76] 10-4] 09 p1272 N68-19461 mercury switch gravity sense [DLR-FB-67-76] ceramic nuclear fuels [WAPD-TM-755] 07 p0995 N68-16251 09 p1272 N68-19461 18 p3121 N68-30805 SWEPT WINGS

NT ARROW WINGS

NT DELTA WINGS

NT SWEPTBACK WINGS Envelope, electrode, and trigger design for high volt-Computerized simulation of constant force spring age high current swit [NASA-CR-61519] [AMMRC-TR-68-07] 07 p0975 N68-17073 21 p3790 N68-34422 Development of gallium arsenide laser diode with sil-on phototransistor for optical isolation switch Pressure-flow-displ peripheral jet fluid su [DSR-761 [0-7] characteristics of Spanwise loading analysis for swept wings with trailing-edge flaps at subsonic speeds
[ARC-R&M-3487] 03 p0297 N68-12428 [NASA-CR-93668] 09 p1316 N68-19395 23 p4046 N68-36261 Electronic resettable fuse for spacecraft applications [NASA-TM-X-63160] 11 p1632 N68-21741 SUSPENSIONS Barium oxide dust suspended is cycle magnetohydrodynamic electri [AEEW-M-755] 02 ed in argon for closed Measurements of sidefo rce and yawing moment on wing-fuselage stores-on 45 deg swept wing model [ARC-CP-955] 04 p0432 N68-12913 Use of exploding foil switches in rapid bank theta ctrical generators 02 p0254 N68-11525 coll circuit [LGI-67/25] 18 p3141 N68-29714 Attenuation and dispersion of sound in condensing edium and flow of gas solid mixture downstream of irmal shock in nozzles Variable geometry wing planforms for transonic and supersonic aircraft [NASA-TT-F-11318] 05 p0605 N68-14265 Accuracy capabilities of calibrationable pressure switch (Calips/checkout system [NASA-TM-X-53729] 19 p3279 N68-31601 15 p2508 N68-26118 Stability and flight he ng qualities of swept wing, WITCHING
NT BEAM SWITCHING
NT MAGNETIC SWITCHING SWEAT [NASA-TT-F-10204] Discrete skin cooling effects on body temperatu 09 p1271 N68-19018 tion during mode and sweat production [AMRL-TR-66-188] ge effects on aerodynamic ins airniane model derate heat stress 22 p3811 N68-35393 Simulated wing dan characteristics of swept-wing airp [NASA-TM-X-1550] Switching of high current impulse generators with plane model 12 p1810 N68-22002 four electrode spark | | INR-823/XVIII/PP | SWEAT COOLING 02 p0192 N68-11444 Mass transfer cooling on porous flat plate in carbon dioxide and air streams [NASA-CR-90404] 02 p0283 N68-11504 Subcritical response and flutter of swept wing model [ARC-R&M-3497] 14 p2181 N68-24815 Performance of computer witched system in presence of n ter controlled optimal Aerodynamics of flow with swept compressor caucades at subsonic flow in wind funnel [K-TRANS-28] 16 p2585 N68-27975 11 p1677 N68-20855 Oxidation resistant alloys tested for suitability as anspiration cooled gas turbine blades Nuclear magnetic re-troelectric rochelle sa ce of domain switching in 08 pi185 N68-17591 [NASA-CR-930] [NASA-CR-94755] 14 p2331 N68-24995 Wings with leading edge flaps with and without baffles for M-1 engine 08 p1232 N68-18216 Film and transpirati [NASA-TM-X-1267] SWITCHING CIRCUITS
NT FLUID SWITCHING ELEMENTS [RAE-LIB-TRANS-1268] Thermal insulation materials for rocket nozzles and 17 p2805 N68-29445 Switching time, and input and output coefficients of gical elements considered in formation of combina-on systems - algorithm SWEPTBACK WINGS [NAL-TR-145] 10 p1541 N68-19566 NT ARROW WINGS NT DELTA WINGS Transpiration cooling of cylinder in crossflow 13 p2167 N68-23441 rree flight measurements of incremental drag on su-personic sweptback-wing aircraft due to engine (ARC-CP-960) 01 p0042 N68-10314 Statistics of switching time jitter for tunnel diode threshold crossing detector [NASA-CR-90306] 02 p0190 N68-11039 ed constricted arc plasma generators 31 15 p2533 N68-26695 [ARL-68-0023] stal study of new concepts Friction, heat and mass transfer related to intensity of coolant fluid injection into porous wall for sweat cooling of high temperature gases in turbulent bounda-Theoretical and experience high and for switching high power in pu [ECOM-00123-F] modulators 03 p0330 N68-12076 Pressure distribution measurements on harmonically excited sweptback wing with and without outboard ry layers (FTD-MT-66-109) Algebraic method f nacelles at low subsonic sp [RAE-LIB-TRANS-1223] 17 p2987 N68-29295 switching circuit prob [FTD-MT-66-92] Design and fabrication of high temperature, high frequency response, transpirationally cooled pressure sensor for combustion instabilities, and cryogenic pres-03 p0332 N68-12334 11 p1619 N68-21178 System for switching circuits between on line and off line switching computers at NASA communications network /NASCOM/ primary and remote switching Computer method for solving problems of sweptback ines and screw bridges with or without cut-outs and wings and screw bridges with or column supports 18 p3078 N68-30627 13 p2162 N68-23938 [NASA-TM-X-63059] Transpiration cooling system for reentry vehicles [NASA-CR-73246] 20 p3611 N68-33016 04 p0485 N68-13878 VASA-TM-X-03037; Josephson junction as switching device 05 p0636 N68-14461 Numerical analysis of unsteady nonlinear three imensional flow of sweptback wing in supersonic Human water losses by evaporative perspiration in ressure suits flight [SUDAAR-339] 15 p2381 N68-26104 Ferromagnetic materials with rectangular hysteresis loops for use in switching circuits 21 p3634 N68-33926 Flutter analysis and camber, and chordwise bending flutter on sweptback wings with ailerons in subsonic Approximate analysis of gaseous injection effect on evodynamics of transpiration cooled hypersonic blunt 05 p0638 N68-14528 Short circuit current switching device with explosive triggering for high voltage network flow [F971] 16 p2777 N68-27450 [DOUGLAS PAPER-4883] 06 p0813 N68-15045 21 m3618 N68-34046 Potential flow of boundary layer for swept back Matrix steering of display points in electroluminescent panels used in graphical display devices for information processors (REPT-256) 06 p0814 N68-15134 SWEATING (F-74) 22 p3854 N68-34853 PERSPIRATION Nonstationary three dimensional airfoils in incom-ressible flow, using rectangular and sweptback half-ting models. SWEDEN Neutron activation analysis of trace elements in marine and lacustrine deposits from Viskan Valley on Swedish west coast (AE-296) 02 p0207 N68-11622 Progress status on high po silicon switching transistor [NASA-CR-92534] wer, low saturation voltage

23 p3986 N68-37151

17 p2964 N68-28338

European-NASA cooperation on solar probe and Ju-

Switching mechanis hysteresis loops, anhys analog memory device [TR-EE67-20]

SWINGBY TECHNIQUE

NASA-TT-F-11810)

02 p0207 N68-11622 Seismological station arrays; seismic waves, and ex-plosion source detection REPT.-59;

NDEX Voice operated switching circuit for thin film per-aonal communications and telemetry system [NASA-CR-65938] 07 p0963 N68-16583 nes 8-33947 Notes for lectures on transistor techniques, low and high frequency amplification, and switching circuits [RHEL/R-133] 07 p0975 N68-16803 ncentric E-37400 Antimorallel pairs of thyristors as contactless ac [RAE-LIB-TRANS-1254] 07 p0976 N68-17083 Low frequency sub-audio triplexer for use with ther-red writing paper oscillograph machines [DRL-TR-68-2] 08 p1154 N68-17833 Rapid cutoff system for cyclotron beam [UCRL-17728] 08 pl 157 N68-17930 Current use of silicon controlled rectifiers in high power modulator switch suries [RADC-TR-67-625] 09 p1312 N68-18274 witch Energy diverters, and vacuum tube isolators for con-trol of microwave amplifier arrays [ECOM-2897] 09 p1313 N68-18346 -10242 on, and Design of digital distributed communication net-orks with implemented switching schemes P-3536] 09 p1304 N68-19090 -15551 tion of Computer program for major and minor threshold anctions of six variables for switching circuit logic design (REPT.-234) -16251 10 p1509 N68-19972 Multithreshold-threshold logical element design 11 p1675 N68-20575 h volt-17073 Minimization problems in design of gate type com-binational switching networks with sil-11 p1676 N68-20678 19395 Photodiode system for synchronized switching of pulsed laser 21741 12 p1884 N68-22131 theta stegrated circuit switch utilizing internal photon generation and detection techniques [NASA-CR-94321] 12 p1852 N68-22234 29714 Thresholds and characteristics of electric relay, com-prising tunnel diode and transistor, acting as switching circuit COMMITTE. 31601 (FTD-MT-67-05) 17 p2862 N68-29072 Fabrication of switching circuits for solid dielectric winductance electric switch s with 18 p3044 N68-29738 (REPT-12191 Electromagnetic switching properties of bistable magnetically permeable liquid bead with nondestructive memory for gas flow control [NASA-TM-X-1013] [8 p3048 N68-3050] 11444 ptimal 18 p3048 N68-30501 20855 Turn-off properties of three layer diodes and thyristors for high current circuits ing in 18 p3048 N68-30607 14995 Nonbinary logic circuit switching theory research [AFOSR-68-0817] 18 p3054 N68-30857 Adaptation of bang-bang switching system for con-trol of artificial arm 19 p3217 N68-31734 Pressurized switching unit designed to start and to crowbar turbulence heating experiment [IPP-4/52] 20 p3449 N68-32431 0314 dinde Mathematical model for switching circuits with mul-1039 tiple logic values (AD-671877) cepts 20 p3454 N68-32937 High power low saturation voltage silicon switching 2076 (NASA-CR-96287) 20 p3452 N68-33235 Special purpose machine for automatic synthesis of vitching networks 2334 d off switching networks (FTD-MT-24-318-67) 20 p3455 N68-33469 tions Ferrite latching switch and combiner with 33 circula-tors having low insertion loss [NASA-CR-96380] 20 p3453 N68-33524 3878 20 p3453 N68-33524 Feasibility of range gated filter and switchable band-pass for clutter control of moving target indicator unit [FSR-AD3-05-68.1] 21 p3667 N68-33819 4461 resis Circuit development for ferrite core data storage 4528 [BMWF-FB-W-68-29] 21 p3664 N68-34114 Optical scanning for switch driving signal with hotoconductive cells 5045 22 p3847 N68-35449 REPT.-2701 Feasibility of transformin high current resettable fuses [NASA-CR-86103] ng solid state switches into 134 22 p3848 N68-35634 nd dynamic properties of tage Switching mechan 995 REPT.-1631 22 p3848 N68-35696

Development of failure sensing switching circuitry for electrical power system reliability during extended

23 p3993 N68-36279

(NASA-CR-97128)

425

Electrical characteristics of capacitive coupling type coaxial switch for application in very high frequency band 23 p4032 N68-36965 SWITCHING FUNCTIONS
U BOOLEAN FUNCTIONS SWITCHING THEORY

Closed loop, manual, time optimal, hang bang con-trol of high order systems using concept of switching 06 p0784 N68-15928

Computer circuit research, hardware systems, soft-ware systems, numerical methods, computer arithmetic and artificial languages, switching theory, and logical design [COO-1469-0072] 09 p1306 N68-18256

Mathematical model of nonlinear, time invariant processes with switched two level inputs and finite memories 10 p1510 N68-20177

Nonbinary logic circuit switching theory research (AFOSR-68-08171 18 p3054 N68-30857 Special purpose machine for automatic synthesis of ritching networks [FTD-MT-24-318-67] 20 p3455 N68-33469 SWITZERLAND

Conference papers on Swiss national space program schuding scientific satellite applications 06 p0929 N68-15226

SYMBOLIC PROGRAMMING FORMAC computer programs for symbolic forma-on and solution applied to structural engineering LMSC-6-77-67-251 02 p0185 N68-11279

Programming language FLIP used as paradigm for design and implementation of pattern matching feature imide of LISP symbol manipulating language 03 p0324 N68-12043 101-921

Processing, and transmission of convolutional infor-ation codes 04 p0479 N68-13472

Mathematical processing of statistical data from law enforcement bodies - cybernetic devices for handwrit-ing analysis, image identification, and retrieval of legal information. [JPRS-43954] 05 p0759 N68-14381

d to define mathematical 05 p0759 N68-14384

Symbolic language, information selection criteria, computer storage facilities, searching, and printout for legal reference information service 05 p0760 N68-14385

Qualification program of concepts involving applica-tion of legal standards 05 p0760 N68-14386

Logical structure of evidence evaluated as quantita-ve measure of reliability of legal proof 03 p0760 N68-14391

ons to optimal guidance moving of polynomials 13 p2150 N68-23542 Applying calculus of variatic problems, and symbolic progras [NASA-CR-86053]

Computer program for symbol diagrams to obtain transfer function [NASA-TN-D-4617] olic reduction of block tions 14 p2227 N68-24967

Computer programs for digital computer visual tex-ire manipulation of complex photographic patterns TR-68-64] 17 p2860 N68-29373 [TR-68-64]

Block programming in computer operations, with emphasis on O/S-360 assembly code [P-3810] 19 p3247 N68-31362 SYMBOLS

Remembering and reproduction of coded information by human operators

02 p0169 N68-11240 Notation and nomenclature for equations of motion

04 p0433 N68-13058 Notation and nomenciature for systems of axes, at-titude angles, direction angles, and flight control systems for aircraft dynamics (RAE-TR-66200, PT. 2)

04 p0433 N68-13059 Scheme of notation and nomenclature for aircraft dynamics and aerodynam [RAE-TR-66200, PT. 1]

04 p0433 N68-13135 Mathematical simulation of letters in handwriting sar on of graphical differentiation 05 p0761 N68-14395

Unlimited mathematic, cartographic, and calli-graphic typography repertory considered for computer and cathode ray printer [NWL-TR-2101] 05 p0634 N68-14625 05 p0634 N68-14625

on language /BOL/ programming Symbol manipu (REPT.-242) 10 p1503 N68-19986

nd applications to com-algebraic manipulations 10 p1504 N66-20305 EOL symbols and syntax, as-piler writing and symbolic and al [REPT.-24]] Glossary of terms and abbreviation

(RAE-TR-67158) . 12 p1985 N68-22279

Recursion relation for 3-j symbols as scalar product or states with three different bosons INR-E2-3625) 12 p1938 N68-22800

Eliminating endmarker from affecting recognition power - aut [TM-738/040/00] arker from stack acceptor without power - automata theory 13 p2042 N68-23196 Symbols used for classifying chemical compounds by Wirwester coding

13 p2177 N68-24099 Computer program using Wiswesser symbols to re-ster chemical compounds

13 p2177 N68-24101 Theories on inductive interference research (RTB-154) 14 p2204 N68-24521

Stationical analysis of symbol usage on army maps for automated cartographic system

(AIR.GI-266-FR) 15 p.2469 N68-26610

Standardization of symbols representing targets on

TM-5-681 16 p2604 N68-27337

Computer program symbols construction for NPL graphical output system
[NPL-CCU-1] 21 µ3664 N68-34131

METRICAL BODIES
AXISYMMETRIC BODIES
BODIES OF REVOLUTION
CELESTIAL SPHERE
CONICAL BODIES
CYLINDRICAL BODIES
ELLIPSOIDS
FAIRINGS

FAIRINGS
PARABOLIC BODIES
PARABOLIC BODIES
POINCARE SPHERES
ROTATING CYLINDERS
ROTATING SPHERES
SLENDER CONES
SPHERES
STREAMLINED BODIES
TOPHINES

TORUSES

Finite difference method for fuel sloshing mode analysis on lined tanks of rotational symmetry
[FM-372-8] 05 p0730 N68-14998

ionlinear approximation for three dimensional lift-surfaces in transonic gas flow applied to symmetric by and thin wing for two and three dimensional cases

TR-471 07 p0934 N68-16547 transenic potential flow obtained by hod thod applied to non lifting symmetrical airfo

NLR-TR-T-136) 07 m0934 N68-16605 n for space group ele-

07 p0964 N68-16929 Subcritical flow pressure distributions calculated for symmetrical airfolis at zero angle of attack [ARC-CP-993] 18 p2994 N68-29855

Numerical computation method for inviscid hyper-sonic gas flow around smooth symmetric body 19 p3261 N68-30988

SYMMETRY NT GAUGE INVARIANCE

Free local fields involving in inventional relations between infinite multiplets with on upin and statistics in pact groupe 01 p0105 N68-10392 JINR-E2-3430 Properties and application theory of elementary particles (IC-67-36) of symmetry matrix in

01 p0111 N68-10630 in simple peripheral

01 p0114 N68-10835 Zero/four/ symmetry and Regge pole theory for mac-ions in which initial and final states in T channel can-ain equal mass particles (UCRL-17738) 02 p0243 N68-11303

Order of energy levels of sys [NASA-CR-90411] netric Hamiltoniano 02 p0229 N68-11619

SUBJECT INDEX ary-symmetry theory of 24 p4315 N68-37881 04 p0452 N68-13042 03 p0390 N68-12404 oltage 03 p0334 N68-12608 07 p0982 N68-16785 n in central region of 07 p1064 N68-17104 in synchrocyclotrons to in-12 p1855 N68-22437 12 p1940 N68-22871 16 p2719 N68-27157 17 p2863 N68-28574 17 p2869 N68-29210 p3279 N68-31733 cy and amplitude control high frequency oscillator 22 p3918 N68-35773 te station clocks 02 p0212 N68-11468 detector 03 p0342 N68-12028 03 p0321 N68-12121 04 p0476 N68-13161 by which maximum length, sequence is cross correlated 08 p1147 N68-17875 thronous signals 09 p1304 N68-18953 zation of hum 14 p2197 N68-24860 an response rate 16 p2596 N68-27188

SUBJ

synch (ESR

Sta circu [REF

VE

Sel modu unma [NAS

Tra

Op

SYNCH U S

SYNCH

Da

INAS

Ve

for pl

SYNCH

Syr

IFV

Ph

Fa

frequ

De

Sel

[NA

SYNCE

SYNCE

SYNCE

Br

optim system [NA:

Sy

FTI

Str

Ca

Te

Ele

ABYTO Value (RTS

ducti (RTS

SYNCE NT NT NT NT

data |

for point charge in plans symmetry of nonsimilar gas unimate solution for ical and spherical sym 02 p0201 N68-11694 matrix [IS-T-167] 03 p0360 N68-12529 Theoretical work in elem-crete symmetries, weak int metries analyses for charged [CERN-67-24, V. 1] ry particle physics - dis-tions, and higher sym-04 p0549 N68-13606 Formalism, and transform setries in elementary particle ions of discrete sym-04 p0549 N68-13607 Higher symmetries in weak particle interactions. 04 p0550 N68-13608 Four dimensional Ric in space with SU/3/Z-3 (DOUGLAS PAPER-4579) 05 p0706 N68-14127 Higher orbital states in framework of symmetry (FTF-67-101 05 p0717 N68-14718 Elementary particle physics lectures on symmetries and weak interactions, baryon and meson resonances, and proton intersecting storage rings [CERN-66-29, V. 3] 05 p0720 N68-14973 Broken O/8/ symmetry and mass relations for nuclei (H/230) 06 p0887 N68-16082 Relations between spectral functions of symmetric moor current and symmetric axial tensor current cou-TUEP-67-28) 07 p1039 N68-16203 Dispersion sum rules for form factors of weak baryon currents, asymptotic SU-3 symmetry at large momentum transfers, and Cabibbo angles [JBNR-P2-3555] Op p1387 N68-18523 SU-3 symmetry and chiral dynamics of pseudoscalar 09 p1388 N68-18576 Systematic search for non-relativistic systems with ynamical symmetries C-67-8] 10 p1560 N68-20421 (IC-67-8) Symmetric dual quadratic programs generalized by constraining variables to arbitrary sets of real numbers [RR-116] Mass relation among isospin singlets of 1 plus and 1 inus nonets obtained by Weinburgs sum rules based 12 p1919 N68-21990 to nuclear and elementa-es of omega baryon and Application of SU-3 theory to no rticle physics - dyn 12 p1924 N68-22270 Effects of atmospheric ext extinction, twilight, skylight, odiscal light and Milky Way on axis [NASA-TT-F-11532] 12 p1967 N68-22378 Analysis of structures wi fold symmetry 13 p2157 N68-23249 Algebraic relation of diverse fundamental particle in-(ISS-67/31) 13 p2119 N68-23774 Symmetry of elementary particle interactions with 14 p2320 N68-25556 tries and groups 15 p2520 N68-26458 (PUC-937-294) Groups, symme [PUC-937-304] 15 p2522 N68-26543 Eta meson and m SU/6/ symmetry (JINR-P2-3758) on scattering in broken 16 p2726 N68-27956 Symmetry and its violatic Wightman axiomatics of quant [ITF-67-32] tion within framework of n field theory 16 p2725 N68-27960 Symmetry of inte ion of Fourier tra through applicati (LYCEN-6784) unsformation 16 p2728 N68-28022 corrections to Coleman-16 p2601 N68-28138 Deformation of the stability and ation of completely lity analysis of coup tely symmetric clastic system oupled and uncoupled modes of equilibrium path [NASA-CR-95485] 17 p2981 N68-28844 nerving amplitudes in pole nd weak electromagnetic id SU/6/

17 p2931 N68-28910 electroproduction r of pions 17 p2936 N68-29211

high energy muons with a vicinity of proton accelera [UCRL-18117] 18 p3133 N68-30365 try group rep 19 p3322 N68-30999 Higher symmetries and mass spectrum of elementary articles using group theory 19 p3325 N68-31141 idality theorems for centrally 19 p3301 N68-31259 Lattice symmetry corrections to energy bands from spherical model using variational principles [FOA-4-C-4352-23] [9 p3355 N68-31555 Symmetry of helical ma face analyses by electron i [IAE-1259] c fields in magnetic surn or magnetic trap 19 p3317 N68-31634 Conference proceedings on nonlocal quantum field theory, Hilbert space, form factors, S matrix theory, and space-time functions [JINR-P2-3590] 19 p3336 N68-32107 SU/3/ multiplet structures for higher meson [RIFP-74] 20 p3544 N68-32786 Mass formulas and decay rates of boson 27-plet in unitary symmetry model [NP-17486] 20 p3546 N68-32979 Discrete symmetries an tromagnetic decays of had ptonic decays in elec-20 p3546 N68-33049 Degeneracy of harmonic tary groups, and mathem groups c oscillator, symmetry of u atical model for symplec 20 p3547 N68-33110 Finite energy sum rule d analyticity, Regge asymptotic b ale derived from unitarity, otic behavior, and resonance 20 p3549 N68-33251 Conference on SU/3/ related to particle coupling, ecay rate predictions, scattering amplitude, parity, and spin reactions [CONF-670725] 22 p3919 N68-34825 Approximate internal symmetian, set of operators, and str try, interaction Ham cture of SU/3/ sigebra 22 p3919 N68-34826 ns and decay rate predictions for 22 p3919 N68-34827 SU/3/ and strong decays of baryon resonances re-ted to systemization of baryon spectrum based on 22 p3920 N68-34828 Baryon exchange reactions, and other aspects of SU/3/ reacti [ORO-2504-12] scattering amplitudes, tion predictions 22 p3920 N68-34830 Dynamical exchange models of scattering process and SU/3/ symmetry for Regge residues 22 p3920 N68-34831 Total cross sections and elastic scattering near for-ward direction based on symmetry, Regge pole models, and Coulomb interference models Mathematical analysis of rising Regge trajectories and acattering cross section symmetry [TH/68/18] symmetry for U-spin and SU/3/ treated by ory and algebra of currents 22 p3938 N68-35976 Broken sys PM/68/1] etries and hydrogen atom/ 23 p4112 N68-36115 Multi-pion systems /sym Approximate symmetry predictions for hadron axial vector current, and implications of bootstrap principle for equal time commutators of hadron currents 23 p4115 N68-36308 Decay of 2-plus mesons and 5U/6/ symmetry [ITF-68-12] 23 p4122 N68-36863 Conference on quantum weak interactions, and high [CERN-68-23, V. 1] cs and field theory, her symmetries 24 p4307 N68-37534 ed to strong, weak, and elec-Unitary symmetry appi tromagnetic interactions 24 p4307 N68-37537 ires on baryon resonances dealing with hyperon ces, partial wave analyses, and SU/3/ applica-24 p4308 N68-37540 Synthesis of numuniformly spo ced antenna arrays 24 p4222 N68-37594 on free tests for symmetry 24 p4275 N68-37606 Running and distributi

Statistical model and unit multiple particle production (JINR-P2-3879) Commutation relations of field algebra used to describe particle states at rest [JINR-P2-3858] 24 p4317 N68-38002 SYMPATHETIC NERVOUS SYSTEM Structure and formation of peripheral reflex arcs arough linkage of intervertebral centripetal neurons and centrifugal neurons of peripheral sympathetic gan-FTD-HT-66-6851 U SIGNS AND SYMPTOMS SYNCHROCYCLOTRONS Devices for determining particles accelerated by of particles accele
ILYCEN-67131 Frequency modulated intensity for measuring inchrocyclotron accelerating voltage (NP-TR-1585) Uniformity of large area proton beams for biology research [NASA-TM-X-60860] Electric field distribu synchrocyclotros [JINR-P9-3497] Magnetic field variations in a crease vertical focusing of partic [ANL-TRANS-477] Electric fields in two dimensional model of synchro-cyclotron accelerating gap in presence of spatial charge [JINR-P9-3639] Positive and negative muon decay spectra in copper plate target System parameter optimization for large band high equency accelerator Development of polarized develeron source for synchrocyclotron, and polarization characteristics in CHARC elastic scattering [LYCEN-6802] 17 p2933 N68-29026 Equipment for short-lived isotope production in roton beam of synchrocyclotron and associated spectroscopic analysis (JINR-P6-3773) Design and performance of thermistor for measuring sternal proton current in synchrocyclotron [R-619] Synchrocyclotre through grid pulse bi (JINR-P9-3805) YNCHRONISM NT BIT SYNCHRONIZATION NT FREQUENCY SYNCHRONIZATION nization of rem Time synchronization [NASA-TM-X-63036] [R-367] Resynchronization [ESD-TR-67-547] Synchronization equip e access system for s nall ground stations small ground stations [NASA-CR-91405] Synchronization process near, and pseudorandom ith small sample of itself [R-67-16] Adaptive detection INASA-CR-699331 Psychophysical experiment in detection of auditory signals is and frequency stan-Synchronization of tir dards from Omega navig (NELC-1529) 18 p3112 N68-29716 visual observations for 19 p3369 N68-32007 observations of Echo I stric radius vectors of arstellite for cal 19 p3369 N68-32008 apheric density from rvations 19 p3274 N68-32009

and electromagnetic form t (JINR-P2-3774)

asuring -12608 biology -16785 ion of -17104 s to in--22437

NDEX

seary of

8-37881 used to

8-38002

lex arcs neuross rtic gan-

1-13042

ructure

-12404

22871 copper 27157 d high 28574

29026 on in 29210 suring 31733

e for

ator 35773 1468

2028 2121 nulti-3161 ngth, inted

stan-716 s for 1007 o I

9008

Lectures at ESRO su on for telemetry, ummer school on instrumenta-satellite localization, and 19 p3282 N68-32113 19 p3282 N68-32122 Statistical parameters of double-triple coincidence (REPT.-904/III/E) 19 p3258 N68-32173 VHF meteor trail forward scatter phase deviation ap-plied to time synchronization 21 p3660 N68-34329 Self-synchronizing, biorthogonal coded pulse code modulation telemetry system for communicating with unmanned spacecraft [NASA-TR-R-292] 23 p4018 N64-36333 ization, and analog to digital 23 p4019 N68-36351 Optimization of synchronization of coherent com-nunication systems 24 p4223 N68-37630 SYNCHRONIZATION U SYNCHRONISM

SYNCHRONIZED OSCILLATORS

Data handling system for 8 bit biorthogonal teleme-ter coded pulse code modulation with efficient synchronization [NASA-TM-X-63043] 03 p0323 N68-12543 Voltage controlled oscillator stability specifications for phase locked communication systems [ESD-TR-68-81] 15 p2429 N68-26668

Backward wave tubes for microwave applications employing delay circuits and synchronization [TRANS-2483] 22 p3847 N68-35324 SYNCHRONIZERS

Synchronizer for delayed trigger circuit of oscil-loscope sweep to study long series of nanosecond pulses HFVE-SEF-67-12-K) 11 p1700 N68-21451 Photodiode system for synchronized switching of pulsed laser 12 p1884 N68-22131

Family of error synchronizable codes based on Neu-mann error limiting codes [AFCRL-68-0092] 13 p2030 N68-24183 13 p2030 N68-24183

Antijam communication frequency synchronization technique based on 15 p2428 N68-26513

Design and performance of data adaptor for parallel data processor communication interface [AD-668384] 15 p2429 N68-26915 [AD-068384]
Self bit synchronizers for detection of anticorrelated binary systems of digital communication systems [NASA-CR-95890]
18 p3038 N68-30529

SYNCHRONOUS COMMUNICATION SATELLITES
U SYNCOM SATELLITES

SYNCHRONOUS DETECTORS
U CORRELATORS SYNCHRONOUS MOTORS

Breadboard models and interface requirements for ptimum performance and reliability of inverter motor [NASA-CR-90300] 02 p0161 N68-11106

Synchronous ceramic gyromotor fixed on aerodynamic bearings for inertial guidance in aircraft [FTD-MT-24-96-67] 05 p0664 N68-14701 Stray loss measurements for three phase induction

06 p0814 N68-15046 Calculations and measurements of load effects on magnetic noise of synchronous motors with integer slot winding 06 p0881 N68-15761

Transfer functions, digital computer program, and equations of state in studying dynamic stability of voltage regulated synchronous machine 18 p3051 N68-30034

Electromechanical transitional processes in asynchronous motors calculated by progressive intervals method [RTS-4582] 20 p.3447 N68-32248 Power output analysis for improved synchronous in-uction motor 20 p3450 N68-32563

SYNCHRONOUS SATELLITES

NT EARLY BIRD SATELLITES

NT SYNCOM SATELLITES

NT SYNCOM 3 SATELLITE

NT SYNCOM 3 SATELLITE

Preliminary systems design of hunar module relay using synchronous satellites as communication and tracking relays for manned spacecraft (NASA-CR-65784) 01 p0029 N68-10406

Automatic electronic method for tracking and accurately measuring polarization orientation angle of linearly polarized agants transmitted from spacecraft or other airborne vehicles [NASA-TM-X-55904] 02 p0180 N68-11266 02 p0180 N68-11266

Lunar module tracking experiment using synchronous relay network [NASA-CR-91071] 03 p0324 N68-12701

Equations derived for analyzing ground track of sun inchronous satellite and applied to Earth Resources [NASA-TM-X-63066] 04 p0577 N68-13557

Resonant satellite orbits used t variations in gravity field of earth [NASA-TM-X-63084] d to determine longitude 07 p1078 N68-16323

VASA-1 to ...

Design criteria for communication and ...

Levision satellites for underdeveloped nations ...

07 p1085 N68-16475

Infrared imaging of cloud cover in 10 to 12.6 micron band from synchronous earth satellite [TG-948] 07 p1017 N68-16491

Attitude control system for gravity-gradiest stabil-ized satellite in synchronous equatorial orbits 07 p1086 N68-16769 Position keeping of three axial controlled synchronous telecommunication satellite [NT-10/68/EN] 10 p1600 N68-20437 10 p1600 N68-20437

[NT-10/68/EN] 10 p1600 N68-20437 Simulation of attitude stabilization of Dodge spacecraft with time lag magnetic damping [APL-TG-949] 11 p1788 N68-20997 Combined solution for low degree longitude har-onics of gravity from twelve and twenty-four hour

[NASA-TM-X-63169] 12 p1964 N6s-21920 Mathematical analyses of suboptimal attitude taneuvering control for synchronous earth pointing

INASA-CR-94673) 14 p2341 N68-24422 Radiation damage shielding of solar cells on synchronous spacecraft [NASA-TM-X-63232] 15 p2389 N68-25736 15 p2389 N68-25736

Rice University ion detector aboard synchronous orbit Applications Technology Satellite /ATS-1/ [NASA-CR-95215] 16 p2752 N68-27385

User hardware, satellites, and ground stations for navigation and traffic control system for large aircraft, general aviation aircraft, and marine vessels [NASA-CR-86049] 19 p3306 N68-31277

User hardware configurations and requirements for navigation and air traffic control technique using satel-

NASA-CR-86051] 19 p3306 N68-31279 Ground stations, satellite equipment, and satellite design for navigation and air traffic control system consisting of two-orbit network with eight synchronous satellites in each orbit (NASA-CR-86052) 19 p3306 N68-31280

19 p3306 N68-31280 Central computing facility and distributed station sonitors for navigation satellite operational mode

20 p3526 N68-32732 Method for determining orbits of near equatorial, near synchronous satellites [TR-0158/3307-01/-19]

20 p3591 N68-33310 Design and performance of dual-spin advanced apacecraft attitude control system 20 p3598 N68-33542

Electric propulation for transferring payloads from parking orbits to synchronous orbits [HSD-TP-7091] 21 p3760 N68-34694

Synchronous satellite stationkeeping computer simu-[ESD-TR-68-87] 22 p3965 N68-35427 Laser aiming simulation models for synchronous satellite optical communication systems [NASA-CR-61975] 23 p4071 N68-36166

Design considerations of multiple laser communica-tion links between synchronous satellite and several ground stations [TR-0158/9230-02/-1]

Radio refraction and occultation techniques for at-mospheric density measurements between multiple satellites [NASA-CR-97115] 23 p4095 N66-36731 Basic outline of numerical orbit integration for synchronous satellite [ESRO-SM-73/ESOC/] 23 p4172 N68-36991

23 p4020 N68-36503

SYNCHROPHASOTRONS

Design and performance of multiple acceleration system resonator in synchrophasotron (ANL-TRANS-460) 12 y1835 N68-22444 Systems design and installation of powerful Soviet synchrophasotron for proton acceleration 14 p2225 N68-24603

SYNCHROTRON NOISE
U ELECTROMAGNETIC NOISE

SYNCHROTRON RADIATION Kson and pion fluxes expected in intermediate energy meson beam experiments in proton area at zero predient synchrotron

COC-119-3-6]

Synchrotron radiation intensity in inhomogeneous this charged ring

[JINR-PF-3415-2]

01 p0113 N68-10752

mentation and techniques for ultraviolet stellar spectrophotometry [NASA-CR-91378] 04 p0576 N68-13388

Matrix analysis of gradient perturbations in alternat-ing synchrotron (BNL-11818) 04 p0551 N68-13775 04 p0551 N68-13775 Mathematical model for ejection mechanism of ex-tragalactic radio sources [NASA-CR-91807] 06 p0914 N68-16023

06 p0914 N68-16025 Institute medium effect on synchrotron emission of intermediate energy electrons [NASA-TM-X-63089] 07 p1040 N68-16294

Absorption measurements of biamuth, copper, gold, aliver, and tin by 6 GeV synchrotron radiation [DESY-67/27] 07 p1041 N68-16325

High energy electrons and emission of galactic, om-nidirectional synchrotron radiation in radio frequency and X rays regions [NASA-CR-92705] 07 p1076 N68-16483

Synchrotron emission at he ectrons emitting from source elical motion of relativistic

[NASA-TT-F-521] 07 p1060 N68-16700 Polarization dependent transmittance, reflectance, and photoeffect of Al films using synchrotron radiation in utraviolet region.

[DESY-67/33] 12 p1889 N68-22636

Radio emission from two quasi-stellar synchrotron sources and theoretical thermal history of intergalactic hydrogen gas 17 p2964 N68-28348 Restoration of original synchrotron radiation formu-

[NASA-CR-95489] 17 p2930 N68-28824 Polarization measurement of extreme UV synchrotron radiation using reflecting polarimeter [DESY-68/12] 19 p3328 N68-31255

Amplification of synchrotron radiation by plasma [NASA-CR-96124] 19 p3341 N68-31633

Approximate formulus for calculating scattered radiation in accelerator halls (NP-TR-1663) 20 p3548 N68-33148 20 p3548 N68-33148

Effect of bulk motion on sys for ensemble of relativistic part [NASA-CR-96471] on on synchrotron radiation rate intic particles 20 p3551 N68-33525

Frequency shift measurements of coherent vertical betatron oscillations at injection as function of beam current in alternating gradient synchrotrons [BNL-11631] 01 p0101 N68-10082 Meter for indirectly me beam energy in synchrotron [CALT-68-139] suring internal electron 01 p0106 N68-10424 Effective transverse phase space dilution and bear ensity distribution in alternating gradient synchrotron BNL-11765) 03 p0392 N68-1249

(BNL-11765) High field pulsed superconducting magnets for BNL-11761) 03 p0385 N68-12546

Neutron detector with electron synchrotron used to measure cross sections for neutron production from fluorine up to 50 MeV (IS-1678) 03 p0395 N68-12626 03 p0395 N68-12626

Japanese nuclear research projects status reports [NP-16498] 03 p0399 N68-12805 Computer program to calculate betarion jacanesters to second order in case of any superperiod symmetric distribution of point quadrupoles in alternating gradient synchrotron [BNL-11760] 05 p0708 N68-14209

Medium energy synchrotron guide magnet configu-ation for acceleration of all charge to mass ratios from 05 p0642 N68-14333

SUB

5

D

T

fron

S

G

Sy

M ated Dec

M Nort [QR

Se pres

D

OT

N

0

Beam loss distribution and shielding experiments to evaluate radiation problems for proposed 200 GeV strong focusing proton synchrotron [UCRL-17797] 05 p0711 N68-14406 Injector systems for strong-focusing 200-BeV proton [UCRL-17798] 05 p0644 N68-14604 Accelerator improvements synchrotron (RNL-11766) 05 p0645 N68-14754 Numerical analysis of sextupo oles effect in alternating 05 p0718 N68-14757 ms of 200 GeV accelerator to 400 Energy expe GeV by adding supercond [UCRL-17862] ucting synchrotron 07 p0982 N68-16648 Magnet positional adju alignment of closed orbits [UCRL-17796] is in synchrotrons for 07 p0982 N68-16925 Characteristics of 21 proton synchrotrons, 12 electron synchrotrons, 6 linear accelerators, and 2 inochronous cyclotrons [ORNL-AlC-1] 09 p1323 N68-18560 09 p1323 N68-18560 Detection of neutrons produced in synchrotrons by 11 p1758 N68-21808 Summary data on research activities in area of instru-mentation, nuclear reactors, synchrotrons, radiation medicine and radiation detectors [BNL-50057] 12 p1931 N68-22598 Synchrotron frequency and stability limits in elec-tron synchrotron as function of number of acceleration 12 p1856 N68-22637 Telemanipulation for equipment maintenance in radioactive zones of proton synchrotron [BNL-TR:180] 12 p1856 N68-22735 Structural design and cost estimates for billion electron volt proton synchrotron [NP-17274] 14 p2236 N68-24988 Bleam transport system for linear accelerator and synchrotron [DESY-68/3] 14 p2237 N68-25145 Space charge electric field effects on synchrotron and betatron frequencies and particle losses [PPAD-637-D] 14 p2314 N68-25159 Four coupled loops for radio frequency control in beam loaded proton synchrotron [RHEL/R-158] 14 p2300 N68-25491 n and availability of tit titanium mill products 15 p2512 N68-25694 [CERN-68-12] Synchrotron measurement of atomic energy levels in reaction of gamma rays with liquid helium [LNF-68/6] 15 p2516 N68-26035 Bibliographies on beam transport and extraction for s, and synchrocyclo synchrotrons (NP-17329) 15 p2519 N68-26434 Effect of beam deflecting elements on closed orbit alculations for Alternating-Gradient Synchrotron (BNL-12375) 16 p2725 N68-27969 Nuclear and theoretical physics, computer programs and data handling, and cyclotrons - bibliographies [UCRL-17876] Space charges and particle bear [BNL-12356] ams and motion 16 p2730 N68-28102 Design and performs cumulation ring device [CERN-68-8] on storage and ac-16 p2640 N68-28217 Semiconductor devices for studying fusion in high energy proton beam at CERN proton synchrotron [P-885/IA, 2/PH] 18 p3138 N68-30780 Particle beam accumulation in storage rings by radio frequency technique assisted by computer program analysis [CERN-68-22] 20 p3538 N68-33106 e steepening delay line for appli-Nonlinear step pulse stee ation to proton synchroton cation to protos [CERN-68-25] 20 p3452 N68-33204 Shielding calculation for stray radiation from (ORNL-TR-1916) 21 p3745 N68-34659 Measurement of omnitron cryopumping and out-gaining by ultrahigh vacuum pulse counting mass filter [UCRL-17845] 22 p3853 N68-35915

24 p4320 N68-38193 SYNCOM SATELLITES
NT EARLY BIRD SATELLITES Electrical power systems of Surveyor, Syncom, Intel-sat 1, Intelsat 2, and applications technology satellites [SSD-70049R] 06 p0917 N68-16083 SYNCOM 2 SATELLITE Resonant gravity harr ics of synchronous satelli [NASA-TM-X-63041] 02 p0267 N68-11626 SYNCOM 3 SATELLITE Resonant gravity harmonics of synchronous satellites 02 p0267 N68-11626 INASA-TM-X-630411 SYNCOPE
U BLACKOUT (PHYSIOLOGY) SYNDROMES
U SIGNS AND SYMPTOMS SYNOPTIC MEASUREMENT Weekly synoptic analyses of data from meteorologi-tal rocket network [WB-3] 01 p0087 N68-10215 01 p0087 N68-10215 Synoptic color photographs of North Africa, South America, China, Formosa, and oceanic areas during Gemini 10 flight 05 p0659 N68-14157 Synoptic analysis of two Caribbean tropical disturbances [IERTM-NHRL-78] 07 p1018 N68-16728 Synoptic measurement of troposphere and lower strate [IERTM-NHRL-79] nt of wind structure in upper tratosphere of hurricanes 07 p1019 N68-16835 Alouette 1 topside sounder synoptic data for iono-18 p3070 N68-30745 Synoptic-aerological analyses of various type cold (DVL-737) 19 p3305 N68-32098 Vertical temperature correlations and applicability in characterizing temperature distributions in large physico-geographical regions and Northern Hemi-(M-7207) 20 n3470 N68-32668 SYNOPTIC METEOROLOGY Synoptic weather front effects on atmospheric sta-bility and stellar image observations [FTD-HT-66-604] 02 p0231 N68-11319 02 p0231 N68-11319 Mesoscale studies of instability patterns and winds in tropics (ECOM-00443-F) 02 p0232 N68-11518 Sub-synoptic network operations summary including evelopment of climatology and precipitation forecast aids (W-48) 03 p0365 N68-12599 Detecting and forecasting ng air pollution potential based on synoptic meteorol (WBTM-NMC-43) 04 p0532 N68-13033 Climatology data for southeast Asia including synoptic patterns for mossoonal influences on wind, rain, and clouds [RM-5418-PR] 04 p0533 N68-13397 Synoptic meteoro 1959 to 1966 [EUR-3569.1] servations at Ispra from 04 p0533 N68-13740 Synoptic color photography of earth cloud cover during Gemini 10 flight World weather summary, daily, and monthly meteorological charts of northern hemisphere for Au-gust 1967 05 p0659 N68-14158 06 p0868 N68-15017 Daily and monthly meteorological charts of orthern Hemisphere for period Jul. 1 - Sep. 30, 1966 06 p0868 N68-15018 natological and mesosynoptic patterns of clouds ecipitation and precipitation (SMRP-RP-67) 06 p0869 N68-15365 Synoptic procedures for snow forecasting in central United States [PB-175804] 07 p1016 N68-16177 Synoptic analysis of two Caribbean tropical disturbances [IERTM-NHRL-78] 07 p1018 N68-16728 Applications technology satellite cloud photography and related synoptic meteorological data in case history format for United States cloud cover patterns (PB-176102) 07 p1018 N68-16805

nship between circulation patterns and cloud erved from 21 Feb. to 6 Mar. 1966 by Essa 1 gical satellite Use of 18 GeV proton synchrotron-injector /booster/ for experiments on pencils of particles and with storage rings on antiprotons cover obse [SR-3] 07 p1019 N68-16808 Cirrus heights and synoptic patterns over central United States [PB-175991] 07 p1020 N68-16915 Reduction of synoptics and dynamics data on 5 to 10 lovember 1963 temporal occurrence, including radia-on measurements recorded by Tiros 7 satellite [PB-175996] 07 p1021 N68-17060 Circulation patterns and satellite-observed cloud over relationships over United States and Mexico 7-16 April 1966 [PB-176276] 07 p1021 N68-17185 Articles on arctic ice pheno and meteorological charts for o emisphere during September 1 phenomena, and summaries s for Germany and Northern 967 08 p1195 N68-17343 Daily and mean ground and 850-mb meteorological charts of Northern Hemisphere for October 1967 08 p1195 N68-17344 Articles on worldwide weather situations, and sum-aries and meteorological charts for Germany and orthern Hemisphere during October 1967 08 p1195 N68-17345 Synoptic meteorology, weather forecasting, cloud tysics, storms, and atmospheric circulation 08 p1197 N68-17599 Synoptic meteorological weather charts for ground level, 300 millibarn, and 500 millibarn levels of at-mosphere over Northern Hemisphere during August, 08 p1198 N68-18030 Synoptic seasons for monsoons in east China, and characteristic temperature and precipitation distribu-09 p1369 N68-18792 Secondary bibliography on climate of Equador [WB/BC-24] 09 p1370 N68-19454 Bibliography on climatology {WB/BC-11} in Belgium Congo 09 p1370 N68-19455 Statistical analysis on noctilu-with synoptic meteorological a-tions in Siberia [NASA-TT-F-11525] noctifucent cloud occurrence logical and ionospheric condi-10 p1551 N68-19753 Project ECCRO - synoptic experiment in tropics [IERTM-NHRL-80] 10 p1553 N68-20519 Synoptic and topographic effects on precipitation requency predictions for United States of America WB-51 11 p1734 N68-20956 WB-5] Literature survey of Soviet bloc research in meteorology 11 p1734 N68-21278 Synoptic models for weather forecasting in Tokyo, [AD-666260] 11 p1735 N68-21436 Synoptic feature geography, storm tracks, and com-posite map of recurring synoptic features relevant to weather forecasting for Tokyo, Japan [AD-666096] Il p1736 N68-21748 Physical numerical model for predicting synoptic scale low cloudiness 12 p1900 N68-22259 World weather summary and daily 850 mb and ground level charts of Northern Hemisphere for November 1967 12 p1900 N68-22576 Duily and monthly mean 50-mb charts of Northern lemisphere for last quarter of 1966 12 p1901 N68-23018 Radar examination of development, movement and structure of hailstorms 13 p2099 N68-23743 Extreme daily rainfall amou [AD-667551] ts in South Vietnam 13 p2100 N68-23795 Spring and sumi Base in Korea (AD-667532) mer sea stratus studies at Kunsan Air 13 p2102 N68-24037 Extraction of digital hemispherical temperature and humidity data fields from U.S. Fleet Numerical Facility and conversion to National Meteorological Center grid 13 p2103 N68-24252 Abstracts of meteorological research studies in [EMM-67-167] 13 p2103 N68-24323 Effect of synoptic analysis errors on predictions nade with barotropic vorticity equation written in 14 p2284 N68-25077 Synoptic meteorological data and daily charts of round, 500 mb, and 300 mb levels for Germany, cen-

Efficiency of bres

synchrotron target [DESY-68/24]

g production on internal

alculations of protection for basic 1000 GeV acrator, 18 GeV proton synchrotron injector, and ar accelerator injector against ionizing radiation 24 p4320 N68-38192

23 p4133 N68-37195

DEX

cloud

6808

entral

6915

to 10

7060

7-16

7185

aries

7343

gical

7344

and

1345

7599

und at-

1030

1792

454

455

753

519

tion

956

278

tyo,

436

748

otic

259

576

em

118

and

FAR

195

Air

137

end lity rid

152

in

23

77

10

al Europe, and Northern Hemisphere during 14 p2284 N68-25127 optic meteorological data and daily charts of d, 500 mb, and 300 mb levels for Germany, cen-Europe, and Northern Hemisphere during 14 p2284 N68-25128 Daily and monthly mean 100 mb and 50 mb level charts of Northern Hemisphere during April, May, and June 1967 [QR-2] 14 p2284 N68-25129 World weather review and daily and monthly mean charts of ground and 850 mb levels of Northern Hemi-sphere during December 1967 14 p2284 N68-25130 Potential and kinetic energy transfer of synoptic 14 p2284 N68-25315 Analysis of synoptic meteoretilucent clouds over western Sib [NASA-TT-F-11524] ogical maps for noc-16 p2701 N68-28065 Thunderstorm rotation about vertical axis caused by ertical shear in low level wind inflow and correlation with severe weather occurrence [ERLTM-NSSL-38] 17 p2908 N68-29061 Scientific definition of FR-2 French meteorology attellite - report to tenth meeting of Committee on Space Research 18 p3168 N68-29644 Vertical thickness and structure of cloud cover in frontal zones over Ukraine during various synoptic T-R-5611 19 n3303 N68-31160 ric circulation response to solar response 91 19 p3273 N68-31876 [ECOM-5189] Synoptic-aerological analyses of various type cold [DVL-737] 19 p3305 N68-32098 ological weather charts 19 p3305 N68-32170 Gulf of Bothnia and Baltic Sea conditions effect on weather and climate of northern Europe, especially Finland, in autumn and winter 20 p3468 N68-32463 Mean monthly air temperature anomalies over Northern Hemisphere over extended time periods [M-7368] 20 p3520 N68-32600 noptic-statistical analysis and forecast method for re rain situations in central Europe 20 p3524 N68-33256 Meteorological satellite photography and data evaluated for European weather situation during Nov. and Dec. 1966 21 p3716 N68-33988 eorological surface and 850 mb charts of rm Hemisphere for first quarter 1968 21 p3718 N68-34383 [QR-1] an weather situation during Sept. and Oct. 21 p3719 N68-34517 urbances in large-scale processes during natural ic seasons as means of forecasting weather 10] 22 p3904 N68-35255 IM-74101 22 p3908 N68-35995 recasting by synoptic ogical review 22 p3908 N68-35996 Background circulation, synoptic processes, and hemispheric influences that determine weather forecasts in polar regions during October and [M-7408] Atmospheric motions deduced from geomagnetic grintions associated with solar flares - extent to which mistory of solar flare current systems provide data to nonopheric winds 23 p4054 N68-36306 d monthly Northern Hemisphere 10- mil-tic weather charts - Apr.-Jun. 1967 23 p4093 N68-36407 ibar synopt (QTSR-2) g and effect on synoptic meteorology (WBTM-WR-30) 23 p4095 N68-36802

Optimal processing of Nimbus 2 data for observation of ocean surface temperature patterns and synoptic

23 p4096 N68-36931

(NASA-CR-97280)

Meteorological statistics tubulated from data ob-tained at 26 weather stations in Greenland between 1961 and 1965 23 p4096 N68-36951 November 1966 synops one in Belgium logical observe-23 p4096 N68-37093 ribution of tropospheric nd resulting ground level 24 p4282 N68-38147 SYNTAX NT WORDS [LANGUAGE] ntactic analysis program for IBM 7040 and IBM 7044 computers [RM-5452-PR] 03 p0326 N68-12459 Language programming for IBM 360 computer to improve readability of programs [CS-53] 10 p1504 N68-20390 10 p1504 N68-20390 Transformational grammer syntax, phrate structure generator, lexical ins and simple, problem oriented progra for IBM 360/67 [CS-84] er syntax, directed random lexical insertion algorithm, ed programming language 11 p1668 N68-21117 Syntax directed FORTRAN statement checker [NYO-1480-85] 13 p2034 N68-23340 Syntax and sen liac 4 language (ILLIAC-4-158) cations for high level II-13 p2037 N68-24261 Coding chemical structures by system using set of graphs and systactic analysis - completeness, uniqueness, and ambiguity of system 15 p2420 N68-26861 LISP 2 language and processor for IBM0S/360 com-TM-3417/001/00] 17 p2859 N68-28823 Syntax and semantics of LESP 2 for IBM \$/360 com-TM-3417/200/001 17 p2859 N68-28826 ng replaceable tables to Compiler system design using apecify source language syntax [MAC-TR-42] 17 p2859 N68-29176 Definition of word clusters for language analysis and digitized picture processing [TR-68-68] 19 p3248 N68-31453 Problem solving procedures for efficient syntactic (SR-11 19 n3250 N68-31830 SYNTHESIS Synthesis, and characterization of hydroxy terminated polybutadienes for propellants [ERDE-6/R/66] 04 p0465 N68-12926 Use of xenon diffuoride for synthesis of labeled 07 p0959 N68-16926 ANL-TRANS-538] Synthesis of three new alpha-methyl substituted bia/epoxyethyl/derivatives of phenyl ether [D1-82-0612] 09 p1292 N68-18423 Preparation and crystal structure of selected rare earth intermetallic compounds with Group 5 and Group 6 elements 09 p1293 N68-18519 Technical feasibility of preparing chromium metal by thermal decomposition of bisbenzene chromium [BM-RI-7112] 10 p1480 N68-19576 Synthesis of selected organo 11 p1649 N68-21047 High pressure, high tempera ture synthesis of boron 13 p2022 N68-24120 borohydride salts for 14 p2217 N68-25141 Hydriodic acid reduction methods for determining uantity of ethylene oxide in oxyethylated products uring synthesis under industrial and laboratory condi-[RTS-4267] 20 p3421 N68-32670 Synthesis and properti of alkaromatic chlorocar-21 p3655 N68-34766 [ARL-68-0107] Formation and reactions of p-ferrocemebenzal (FTD-HT-67-222) 22 p3819 N68-34834 Synthetic approaches to preparing novel aromatic olecules as precursors for organic ions of unusual sta-22 p3824 N68-35384 Anhydrous hydrazine synthesis [CEA-R-3379] 22 p3830 N68-35805 Synthesis and pyrolysis of aliphatic hydramoses for thermal batteries (HDL-TR-1400) 24 p4201 N68-38221

SYNTHESIZERS
U CHEMICAL REACTORS SYNTHETIC ARRAYS thesis procedures for two dimensional, periodic y, and non-binary arrays 07 p0966 N68-16983 lobe and power gain optimization and array 18 p3032 N68-29571 Side-looking radar with synthetic antennas, and methods of obtaining higher resolution 20 p3482 N68-33403 SYNTHETIC FIRERS NT DACRON (TRADEMARK) Gaseous environment effects on static fatigue of nylon, and of polystyrene filaments [ERDE-7/R/66] 04 p0525 N68-13108 Polyamide fiber material tested for use as protective clothing in industrial hazardous thermal environment [LD-17-47] 09 p1287 N68-18477 Molecular structure change in flame proofed polyacry/konitrile fibers during carbonization [RAE-LIB-TRANS-1273] 12 p1893 N66-22018 Annotated bibliography of works published 1959-46 on applications of plastics, composite materials and synthetic fibers [TDCK-30062] 13 p2090 N68-23980 Ultraviolet light effect polymeric fibers and films [FTD-HTT-23-822-67] ct on strength of strength 20 p3511 N68-33100 (FTD-HT-23-822-67)
SYNTHETIC BESING
NT ACRYLIC RESINS
NT ADDITION RESINS
NT FOXY RESINS
NT POLYAMIDE RESINS
NT POLYAMIDE RESINS
NT POLYAMIDE RESINS
NT POLYETTER RESINS
NT POLYETTER RESINS
NT POLYMETHYL METHACRYLATE
NT THERMOSETING RESINS
NT WINTL COPOLYMERS incompatible to Elastomechanical equilibrium and essential parame-ters for unidirectional composites and reinforced synthetic resins with high resistance [ONERA-TP-468] 05 p0680 N68-14477 Preparation, and evaluation of polyimide sulfone resim, graphite-dilica reinforced polyamide resim, and resin resistance to FLOX- methane, and fluorime hydrogen fixed [NASA-CR-72022] tentials of synthetic and Problems, properties, and potentials of synthetic and composite materials in nuclear technology [SGAE-CH-50/1968] 11 p1742 N68-21335 Lamellar structure and melting behavior of polyes-22 p3893 N68-34885 SYNTHETIC RUBBERS

NT CHLOROPRENE RESINS

NT ELASTOMERS

NT VITON competitic issuese synthesis, strain rate in deforma f elastomers, polymerization and structure of nit abber, crystallinity in polybutadienes, and implication rather binders 03 p0312 N68-12316 Shear modulus determined for polyurethane rubber containing bimodal mixture of coarse and fine sodiam chloride particles [ONR-TR-7] 04 p0326 N68-13899 Torsion tests to determine effect of filler content on use transition temperature and glassy modulus of with the second of the second 08 p1189 N68-17312 on studied in unfilled Pure homogeneous de natural and butyl rubben [COA-NOTE-MAT-16] 20 p3509 N68-32362 Viscoelastic behavior of styrene-butudiene rubber, nder finite uniaxial and equal biaxial deformations, or nonisothermal cases for nonisotherma [AA&ES-68-2] 21 p3708 N68-33982 SYSTEM FAILURES Experimental, and theoretical analyses of beam breakup effect in linear accelerator [SLAC-PUB-350] 04 p0491 N68-13755 reliability and failure rain actors, mission duration, or maintainability of manne Effects of hardware reskills, environmental fact resupply potential on a successful on long duration (NASA-CR-73151)

07 p1086 N68-16905

SUB.

Sy form

tions cont [R-3

Sy of lin

0

Sy

Sy

IUC

Ev

CS

Co

Sy

ECC

Sy

(NA

ecte

Syr

On

Syr

(NAS

Co

Sys

14 p2263 N68-24529

Systems performance, lunar photography, and unch operations of Lunar Orbiter 3 photographic

[NASA-CR-1069] 14 p2350 N68-24738

Sy

Human response analysis in combined trajectory control task, system-failures task, and motor response SYSTEMIZATION
U SYSTEMS ENGINEERING nary of Voyager spacecraft systems analysis and engineering tasks [NASA-CR-61660] 09 p1433 N68-19095 SYSTEMS ANALYSIS Systems analysis and engineering, operational sup-port and mission-dependent equipment, and spacecraft definition for Voyager Mars project [NASA-CR-93564] 09 p1433 N68-19096 [NASA-TN-D-4356] 08 p1136 N68-18014 Interactive computer graphics system, called raphic Rocket, to aid in aerospace vehicle systems Predictive maintenance for components and aircraft [AD-664371] analysis [P-3660] 09 p1270 N68-18697 01 p0034 N68-10270 Voyager spacecraft configuration, systems and trajectory analyses, and system integration interfaces [NASA-CR-93550] 09 p1434 N68-19101 Effects of oversized, or slotted holes on slip behavior Preliminary evaluation of Apollo 4 spacecraft mission performance [NASA NEWS RELEASE-67-294] 02 p0270 N68-11047 of bolted joints [REPT.-318.3] 10 p1601 N68-19514 Bibliography on redundancy in complex systems, critical analysis of design techniques, and system and component reliability [REPT.-67-C-397] 11 p1706 N68-21225 Systems analysis and tradeoff data on electrical obsystems for recommended Voyager spacecraft con-Automatic data processing techniques for construc-tion and revision of task analysis diagrams during final systems development 09 p1436 N68-19156 Systems analysis and preliminary requirements for mission dependent and operational support equipment for Voyager Mars spacecraft (RASA-CR-93536) 09 pl305 N68-19159 [SRM-68-8] Redundancy effects of reserve elements on system mubility 02 p0185 N68-11306 Computer program for inversion of systems analysis applied to magnet design [UCRL-17436] 03 p0385 N68-12643 12 p1852 N68-22143 Reliability, performance, failures and cost estimates ir power module for use in air traffic control centers RD-67-62] 13 p1994 N68-23242 Parametric environment related functional analysis oding system for combining cybernetics, operations Systems analysis program for low enrichment fuel reprocessing, nuclear reactor component and engineer-ing research, and bromine pentafluoride for producing uranium hexafluoride coding system for combining cybernetics, operations research, and systems analysis in problem solving 09 p1453 N68-19345 Robustness of reliability predictions for series retents with identical components, assuming exponental failure distribution 03 p0380 N68-12699 Systems analysis of steam cooled fast breeder reactor Systems design analysis of helically-wound magnetic tape and mechanical tape transport [NASA-CR-91447] 04 p0481 N68-12917 [NASA-CR-94355] 13 p2097 N68-24204 (KFK-6361 09 p1379 N68-19432 Pilot dynamic response to sudden flight control Digital computer analysis of systems with nonlinear 15 p2402 N68-26690 Systems design and guidance and control analyses of thrust vector control systems for large, solid propellant launch vehicles [NASA-CR-1087] Graph theory for determining communication net-ork survivability 10 p1545 N68-19684 Signal processing techniques for airborne range and orbit determination system, and direction finding IR-3591 [NASA-CR-66506] 04 p0564 N68-13152 15 p2429 N68-26716 Systems analysis technique based on redefined proper efficiency concept and theory of vector op-Sampling and probability theory for estimating number of system failures in telephone networks [MTR-575] 16 p2618 N68-27008 (NASA-CR-61668) 10 p1496 N68-19826 Systems analysis, structural design, and performance rediction for advanced multipurpose large launch [RM-5454-PR] 04 p0529 N68-13264 Commercial pilot reaction to warning system for failure in instrument landing systems [SRDS-RD-68-9] 16 p2588 N68-27567 Aeronautical engineering articles on Soviet studies ertaining to systems analyses, flight control chniques, shell theory, and turbine operation and [NASA-CR-73154] 10 p1599 N68-20046 Adaptive control systems design for time variable Flight simulation study to investigate pilot and system responses to control and system failures during automatic instrument approach to landing [SRDS-RD-68-11] 17 p2829 N68-28559 (FTD-HT-66-260) 04 p0568 N68-13841 [TR-41] 10 p1510 N68-20130 Nuclear physics, als science, propulsion, Basic design concepts for programming languages [CS-65] 10 p1504 N68-20342 nd systems analysis 06 p0930 N68-15564 Postflight analysis data on Nimbus I solar array drive [NASA-CR-92558] Probabilistic measures of system function deviation due to random variations or inherent system paramemotor failure [NASA-CR-95482] Development of mission requirement profile for subsystem components from overall system profile [NASA-SP-6503] 06 p0911 N68-15683 17 p2815 N68-28825 Problems of classifying failures of machines and [AFOSR-68-0327] 10 p1549 N68-20456 machine components [NASA-TM-X-60998] 17 p2894 N68-28912 Thermal analysis, theory of operation, and operating instructions for isothermal heat flux sensing unit [NASA-CR-61510] 07 p0995 N68-16162 Systems analysis of TEPPS computer program for establishing performance standards of corrective maintenance and operator tasks [AD-665699] 11 p1639 N68-20753 Component reliability data applied to estimation of idealized system reliability [ORNL-TM-2200] 18 p3081 N68-30161 m reliability 07 p1015 N68-16756 Mathematical model for system relia [FTD-HT-23-501-67] 07 pt 11 p1639 N68-20753 Systems analysis and operations research for developing environmental criteria and simulation methods for testing weapons and weapon systems Reliability schemes in digital systems with asymmet-Microwave research - electromagnetic wave propagation, electronic ocupment, field theory, laser optics, plasma physics, semiconducting film, informa-tion theory, and computer control [PIBMRI-842.3.2-67] rical failure modes [NASA-CR-95886] 18 p3041 N68-30368 weapon systems 11 p1808 N68-21505 Functional cyclograms for repair and maintenance of Redundancy effects and self adaptive control for in-creased reliability of telemetry systems [FTD-MT-24-149-67] 12 p1852 N68-22142 digital computers [FTD-HT-23-756-67] 19 p3246 N68-31309 07 p0978 N68-16927 Linear programming and maximizing reliability of stems composed of components subject to failure NAVSO-P-1278] 19 p3257 N68-31997 Construction of observers in multivariable plant con-Redundancy effects of reserve elements on system reliability [NAVSO-P-1278] 07 p0978 N68-16970 12 p1852 N68-22143 Feedback system for optimal bang-bang control of ochastic system with noise Electron radiation induced dielectric breakdowns in Self corrective error detection code for interference control of communication channel capacitor meteoroid detection system
[NASA-TN-D-4738] 20 p3479 N68-33277 07 p0978 N68-16972 12 p1852 N68-22144 [NA3A-10-12-13]
Dynamic behavior of steam cooled fast power reactor with respect to stability, transients due to moderate perturbations at operating points, and accidents [AE-321] 21 p3723 N68-34107 Approximation method for multiple dimensional Structural, electrical, and systems analyses for single-07 p0978 N68-16973 panel oriented solar array [NASA-CR-94318] 12 p1819 N68-22231 Computational evaluation of predicted performance by matrix methods Structural, electrical, and systems analyses on non-tracking, deployed, truncated, conical solar array [NASA-CR-94320] 12 p1819 N68-22232 Method for computing lower confidence limits on system reliability using component failure data with 07 p0979 N68-16994 Methods of evaluating capabilities of civil defense communication systems to meet operational requirements during and after nuclear attack [CAL-VP-2269-H-5] 08 p1147 N68-17859 unequal sampling [NPS-55WO/BG8061A] Lyapunov control system synthesis of highly reso-21 p3699 N68-34631 Development of failure sensing switching circuitry for electrical power system reliability during extended 08 p1147 N68-17859 [NASA-CR-94421] 12 p1854 N68-22774 System dynamics and control analysis of tungsten water moderated nuclear rocket [NASA-TM-X-1426] 08 p1207 N68-18252 Structural design, systems and subsystems require-tents, entry probe configurations, and transfer trajec-tries for flyby/entry probe system for 1972 Venus [NASA-CR-97128] 23 p3993 N68-36279 Computer program that calculates failure probability analysis and combined subsystem reliability, and develops reliability mathematical model for use in mis-SNAP 23A post-test analysis plan [MMM-3824-0002, V. 1] [NASA-CR-94406] 12 p1969 N68-22994 Systems analysis of photopolarimeter for measuring stensity and polarization of light emerging from earth 09 p1375 N68-18568 [DOUGLAS PAPER-4757] Generalization of sliding duplication in branched 23 p4067 N68-36386 atmosphere [NASA-CR-65952] - 13 p2059 N68-23527 Statistical characteristics of number of cycles of cor-et work of automatic machine during failure TD-MT-24-180-67] 23 p4069 N68-36769 09 p1361 N68-18583 Systems analysis and flight performance of Atlas Centaur launch vehicle with Surveyor I lunar probe [NASA-TN-D-4580] 13 p2156 N68-24338 rect work of automatic # [FTD-MT-24-180-67] Performance analysis of electric power, data link, signal processing, and flight control systems of Surveyor I spacecraft [NASA-CR-93491] 09 p1429 N68-18655 Reliability analyses and failure probabilities of S-4B stage automatic pilots and hydraulic thrust vector control system configurations, and compatibility with ac-Systems analysis of electrical grounding system for lightning protection of STADAN [NASA-CR-94682] 14 p2234 N68-24516 09 p1429 N68-18655 Performance analysis of propulsion system retrorocket, altitude radar, radar altimeter, and television system of Surveyor I spacecraft [NASA-CR-98032] 23 p3995 N68-37242 Stochastic analyses for model systems with repaira-

09 p1430 N68-18656

09 p1422 N68-18943

nts common to mann ng environments, syste and guidance and navig

[NASA-CR-93494]

[NASA-CR-73187]

Technological requirement lanetary missions, including naracteristics, aerobraking, a

SYSTEM LIFE U RELIABILITY

Probability of fail-free operation of constant redundancy system provided output parameters remain within tolerance limits [FTD-HT-23-998-67] 24 p4236 N68-38137

SUBJECT INDEX ned Orbital Research Laboratory resistojet control system analysis (NASA-CR-66601) 14 p2194 N68-25447 Systems analysis of antenna tracking servo systems and adaptive techniques for improving accuracy 15 p2422 N68-25786 Methods and analyses for flight evaluation of control systems for multistage launch vehicles [NASA-CR-95059] 15 p2498 N68-23930 hicles 15 p2498 N68-25930 Systems analyses, experiment designs, and per-ermance data on Applications Technology Satellite NASA-TM-X-61130) 15 n2563 N68-25934 Algorithmic method of generating sensitivity func-ons for analysis of single input, linear, time invariant 15 p2439 N68-25993 Systems analysis, recognition algorithm, and design of limited speech recognition system [NASA-CR-86058] 15 p2431 N68-26062 Operational utility evaluation of direct readout in-nared data based on data from Nimbus satellites TR-199] 15 p2496 N68-26105 15 p2496 N68-26105 Systems analysis and performance tests of radar per-rmance analyzer 15 p2425 N68-26173 Systems analysis for solving electromagnetic inter-ference and noise problems associated with electronic [UCRL-18111] 15 p2427 N68-26399 Sequencing control methods to relate detectable srallelism in computer programs to machine organiza-[ECOM-02463-6] 15 p2433 N68-26527 Shared subroutines in small computer multipro-15 p2434 N68-26611

EX

095

096

101

ical

186

for

159

ysis

145

132

584

and ing

126

30

142

56

53 for

05

42

ım

43

се

44

31

32

94

27

38

or

16

19

Linear systems analysis applied to transient and im-pulse response approximations in electromagnetic scat-tering problems [OSURF-2415-1] 15 p2511 N68-26631 15 p2511 N68-26631 Evaluation and comparison of programming lan-puage PL/I to FORTRAN, COBOL, and JOVIAL [CS-6813-R0106] 16 p2627 N68-26989

Computer time sharing evaluation, and its costs per-formance, speed, and related user attitudes [AFOSR-68-0795] 16 p2627 N68-27005 Systems analysis and design of electromagnetic inter-ference measuring instrument [ECOM-02328-F] 16 p2659 N68-27039

Systems analysis of supersonic fluid amplifier [AD-668682] 16 p2592 N68-27133 Systems analysis related to technology utilization and

spinoff from aerospace research (NASA-CR-85204) 16 p2800 N68-27912 Study, cost, and systems analysis of present and projected liquid hydrogen production [NASA-CR-73226] 16 p2615 N68-28227 16 p2615 N68-28227

Fully-manual and augmented-manual control stems for Saturn 5 booster studied by emperically seed mathematical models for pilot. NASA-CR-1079] 17 p2975 N68-28426 based mathematical [NASA-CR-1079]

System optimization of nuclear magnetic resonance 17 p2883 N68-28684 Organizing centralized system for automation of ex-

JPRS-457721 17 p2858 N68-28810 tems analysis, design criteria, and performance rements for automatic throttle control ttle control 17 p2806 N68-28853

Systems feasibility analysis of voice broadcasting to home radio receivers from communication satellites [NASA-CR-95491] 17 p2850 N68-28877

Systems analysis and performance test data on dual radiometer assembly for measuring far infrared wavelength bands of earths horizon radiance profile [NASA-CR-1086] 17 p2884 No8-28965

Control system design and analysis, and survey of case histories involving spacecraft dynamic interaction [NASA-CR-86070] 17 p2977 N68-29296

General description and development program for Black Arrow satellite Isunching vehicle 17 p2978 N68-29356

Systems analysis and performance of deep space ommunication equipment, and tracking and naviga-on studies on Earth-Mars fryby mission. 2012, Nas. 2012. communication equipment, a tion studies on Earth-Mars fly [NASA-CR-95572] mission 17 p2855 N68-29522 Systems analyses of space erectable structure concepts for Apollo Applications Program
[NASA-CR-91559] 17 p2983 N68-29537 Research data on syst control, spacecraft propu solid and liquid propellant [NASA-CR-95582] tems analysis, guidance and ultion, aerodynamic facilities ts, and telecommunication 17 p2974 N68-29544

System design analysis to establish feasibility of using ectro-optical celestial acanning sensor on IMP accoraft for determination of spacecraft attitude by star measurements [NASA-CR-95808]

18 p3111 N68-29707 Analysis and synthesis of discrete time systems with polic duration and amplitude modulation of control signals

18 p3049 N68-29798 Statistical detection theory applied to adaptive signal design and processing for active soner system 18 p3034 N68-29860

Principles, characteristics, and technology development status of conversion systems for converting reactor heat into space electric power [NASA-TM-X-52472] 18 p3113 N68-29921

Research projects on space flight trajectory and aerospace systems analyses [NASA-CR-95806] 18 p3163 N68-29949

Coupling cyclic code and probability functions as highly reliable error correcting device for digital data (MTP-75) 18 p3035 N68-30119 Design of nonlinear control systems using state varia-ble feedback

18 p3052 N68-30157 Stability analysis of OAO attitude control system in coarse pointing mode -- 18 n3171 N68-30193

Multiple purpose inverter design based on phase demodulated inverter circuit selected from state-of-the-art assessment of ten inverter circuits [NASA-CR-92200] 18 p3005 N66-30318 System reliability approximations using modular

(ORC-67-42) Linear systems analysis to identify dynamic characteristics of human operator based on input-output data [NASA-CR-86067] 18 p3017 N68-30845

Systems analysis, design, and operating charac-ristics of strapdown gyroscopes for dynamic environ-

[NASA-CR-86082] 19 p3306 N68-31070 Equivalent gain function and stochastic analysis for collinear sampled data control system 19 p3255 N68-31089

Evaluation technique to measure performance of strapdown guidance systems designed for unmanned interplanetary missions [NASA-CR-46086] 19 p3306 N68-31090

19 p3306 N68-31090 SNAP-8 systems design or saior components compri riteria, and assessment of rising power conversion ajor comp [NASA-TM-X-52464] 19 p3309 N68-31164

Voyager spacecraft termin al guidance system analy-NASA-CR-619091 19 p3372 N68-31201

Measurement calibration and system design analysis for measuring pressure differentials in rotating reference frame 19 p3276 N68-31214

Systems analyses of satelli round station networks for navi of techniques, and tracking ite constellation and igation and traffic con-accuracy and error [NASA-CR-86050] 19 p3306 N68-31278

nmunication over slowly re fading channels 19 p3239 N68-31417 Demodulators for analog co time varying, frequency select [NASA-CR-95951]

n analysis or leave agnetic tage recorder 19 p3252 N68-31461 1 factors by Design schematics and system rol unit used on endless loop ma NASA-CR-95952]

Application of systems analysis to social factors by technical writers [NASA-CR-96132] 19 p3388 N68-31519

Mission and subsystem parametric analyses to evaluate direct and orbital entry modes for soft landing capsules on Mars [NASA-CR-66639] 19 p3366 N68-31831 19 a3366 N68-31831 Parametric data, systems analyses, and space capsule sign concepts - direct versus orbital entry for Mars

(NASA-CR-66660) 19 p3366 N68-31832 Entry and terminal phase performance analyses of configurations for direct versus orbital entry for Mars

missions [NASA-CR-66662] 19 p3367 N68-31834 Subsystems analyses and parametric data on configurations for direct versus orbital entry for Mars missions [NASA-CR-66664] 19 p3367 N68-31836 Complex systems subjected to hierarchical control structure with imposed universal criterion of optimality

INASA-TT-F-114121 19 p3258 N68-32049 Conceptual design analysis of hydrogen oxygen fuel ell system with reactant supernaturated observelyte [NASA-CR-96143] 19 p3207 N68-32106

electronic state of deped ibration spectra 20 p3563 N68-32412 Systems analysis of four types of fluidic active in-tegrated circuits for automatic temperature control

[D6-58372TN] 20 p3402 N68-32595

Parameter analysis of electric power distribution an onditioning systems of Rankine type space sucles WAED-67-45E1 20 p3402 N68-32748

Systems analysis to determine probability of supplying random number of denunds with units from fixed supply having random failure rate [RM-3302-PR] 20 p3517 N66-33275

Graphical and analytical techniques for calculating regions of absolute stability of linear systems [NASA-CR-96360] 20 p3455 N68-33554

Criteria for degree of observab 21 p3672 N68-33974 Technology requirements and spacecraft design stu-es for atmosphere braking to orbit about Mars and

Venus [NASA-CR-1131] 21 p3766 N68-34086

Performance tests and systems analysis of SNAP 2 reactor in operational environments [NAA-SR-[2186] 21 p3726 N68-34578 21 p3726 N68-34578 Analysis and design of model following control system by state space techniques [NASA-TM-X-61189] 21 p3675 N68-3477

21 p3675 N68-34777

Dynamic programming approach for optimal control multidimensional stochastic dynamical system 22 p3850 N68-34819

straint theory and analysis for determining

22 p3897 N68-34878 Systems analysis of performance of M-ary orthogonal and M-ary PAM feedback communication systems

22 p3832 N68-35009

Research methodology for studying problems of allysis, design, and control in complex service systems

[WMSI WORKING PAPER-139] 22 p3882 N68-35265

applied to mathematical sear stochastic processes 22 p3901 N68-35472 Systems analysis logic modeling of dynamic noulin [NASA-CR-1168]

Spacecraft contamination analysis for possible 1972 Mari [NASA-CR-97071]

Postflight analysis of J-2 engine premature shutdown due to fuel system failure resulting in engine damage. [NASA-CR-61992] 22 p3935 N68-33862 Consolidation, standardization, and qualification of computer program routines associated with computer-sized design and analysis of circuits and systems [NASA-CR-97122] 23 p4025 N68-36438

Thermionic power generation systems analysis for spacecraft power supply application UCRL-70816] 23 p3994 N68-36908

Mathematical models for analyses of linear time in-riant multiple systems 23 p4038 N68-36979

Mission support, advanced engineering, operations and systems analysis, and technical facilities programs related to Deep Seace Network [NASA-CR-97346] 24 p4224 N68-37714

Primary zinc air battery with thick associas for high energy density and minimum costs [ECOM-0432-1] 24 p4200 N68-38364

Critical behavior of systems undergoing discourse phase transitions and polymer chain configure AD-674642) 24 p4333 N68-38106

SYSTEMS ENGINEERING

Specieralt thermostatic fin thermal control system design analysis using Fortran computer program [NASA-CR-89989] 01 p0147 N68-10081 Biotelemetry systems for ecological studies, data nalyses problems, and technological developments in NASA-CR-900661 01 p0015 N68-10356

seering developments in nuclear reactor and [ANL-7290] 01 p0090 N68-10440 Overview on status of various electrical engineering lated research studies related researce [AD-659540] 01 p0045 N68-10749 Mission analysis and systems engineering of Jupiter orbiting vehicle for exploration [NASA-CR-61180, V. 1] 01 p0140 N68-10887 Technical feasibility of boiling water reactor nuclear steam supply system MWt [GECR-5155] 01 p0096 N68-10896 Feasibility of nondestructive testing in space en-tronment - proposed flight hardware for prototype andestructive test unit nondestructive test u [NASA-CR-90044] 01 p0071 N68-10958 Design study of electrical com 0.25 to 10.0 megawatt space pow 15AN-679-31 nponent technology for 01 p0006 N68-10967 [SAN-679-3] Handbook for design of control systems using analog 02 p0161 N68-11082 Voyager spacecraft thermal insulation system evelopment and testing [NASA-CR-90337] 02 p0274 N68-11264 ng magnetic fields generated by Techniques for limitin spacecraft systems and s [NASA-TM-X-55790] s and si 02 p0265 N68-11295 System engineering considerations in spacecraft (NASA-CR-90423) 02 p0275 N68-11434 Program control methods for reliability of Apollo spacecraft systems [NASA-TM-X-60662] 02 p0217 N68-11527 Subsystem conceptual design for manned optical technology extension system - Apollo spacecraft [NASA-CR-90529] 02 p0241 N68-11863 Digital computer system for processing mass spectrometer output data
[NASA-CR-90754] 02 p0214 N68-11869 02 p0214 N68-11869 Systems engineering and analyses, ground support ment, test facilities, and management of NERVA development progra [NASA-CR-91051] 03 p0368 N68-11960 Engineering and design data on thermoelectric con-erter for SNAP-23A, and project management plans verter for SNAP-23A [MMM-3824-0009] 03 p0369 N68-12058 Space programs supporting research and develop-ent in systems, guidance and control, engineering sechanics, propulsion, and telecommunications mechanics, propulsic [NASA-CR-91047] 03 p0414 N68-12306 Integrated space maintainability criteria develop-ment technique [AFAPL-TR-67-93] 03 p0368 N68-12534 or projects, and reactor en-03 p0382 N68-12750 04 p0505 N68-12822 04 p0505 N68-12823

ANL-7279) Systems design and flight test data on chirp digital radiosonde system Prototype data recording system design for ESSA 3 flat plate radiometers ESSA 3 flat plate radiometers for measuring global distribution of reflected solar and long wave radiation leaving earth 04 p0505 N68-12824 Engineering design criteria for 30 watts per pound rollup solar array [NASA-CR-91445] 04 p0447 N68-12939 Two reactivity meters for fast reactors [TRG-1526/D/] 04 p0538 N68-13051 Systems engineering data on IMP magnetometer ex-eriment to measure magnetic field in interplanetary [NASA-CR-73161] 04 p0508 N68-13143 Systems design of K-band electron density probe [NASA-CR-91382] 04 p0508 N68-13208 Reference design of mist jet propulsion systems in aptured air bubble vessels 04 p0565 N68-13391 Operating manu-tive ion accelerator [NOLTR-67-102] al for 2.5 MeV Van de Graaff posi-04 p0490 N68-13446 ounding rocket vehicle configuration determinated design problems related to selection of exist cle design for new applications. 04 p0583 N68-13583 Selected articles on turbocompressor and com-nation chamber burner improvements and flow calcu-tions in turbogenerator long blade compressor stage FTD-HT-66-364] 04 p0567 N68-13733

Gas turbine combustion chamber burner design im-Radial axial flow turbocompressor modifications to improve efficiency System for switching circuits between on line and off line switching computers at NASA communications network /NASCOM/ primary and remote switching [NASA-TM-X-63059] Design and operation of bubble chamber with super-onducting magnet containing hydrogen, deuterium, or (SLAC-TRANS-72) Design concepts for p [NASA-CR-91730] o5 p0607 N68-14185 Design of large hydrogen b net coil for testing superconde Technological problems of support systems (NASA-TM-X-60799) Design criteria for graphic display systems [TID-24087] 05 p0662 N68-14416 Theory, and design analyses for continuous, and dis-[FTD-MT-63-516] Design of central data system for advanced deep solar probe managemen [NASA-TM-X-60801] Systems planning for new and extended computer [DLR-MITT.-67-20] Preliminary design criteria for fast fuel element test-[ORNL-TR-1786] Design concepts in graphic displays, and col-bology, and typography selection for maps and o Critical design areas in map di data retrieval displays to flight crew Product development and ments of military aircraft map-Orbiting primate spa ocumentation on system ecraft project planning and s design and engineering, experiment design, test [NASA-CR-66511] Effectiveness of aircraft design in correlation with ircraft systems and subsystems with emphasis on fan in (USAAVLABS-TR-67-53) Gemini spacecraft docking system development, esign concepts for maneuvering docked vehicle, and Gemini space-design concepts for maneuvering docked venoce, docking and undocking flight experience 05 p0744 N68-14945 sent of Defense mi Systems design of trans port systems for Apollo prima [NASA-CR-926] Preliminary systems desig for 30 watts per pound solar [NASA-CR-92579]

04 p0567 N68-13734

04 p0567 N68-13736

04 p0485 N68-13878

05 p0641 N68-14050

ubble chamber with mag-

aerospace integrated life

05 p0614 N68-14335

05 p0639 N68-14634

05 p0631 N68-14643

05 p0634 N68-14762

05 p0696 N68-14764

05 p0688 N68-14836

system design require-display devices 05 p0690 N68-14852

and manufacturing 05 p0744 N68-14892

05 p0606 N68-14939

on support for Gemini

05 p0646 N68-14955

06 p0903 N68-15070

OF, symfor maps and charts 05 p0634 N68-14830

ing strips 05 p0642 N68-14288

pineering, and life sup-orbital experiment 06 p0777 N68-15306 d engineering drawings 06 p0770 N68-15864 anual control displays 06 p0779 N68-15902 Systems analysis theory for ma der functions in design for drive system 06 p0784 N68-15931 Application of human tra tem, and components of abus satellite 07 p0994 N68-16117 Calibration, system, s microwave radiomet [NASA-CR-92670] Design and perform ance testing of large scale mixed stric inlet at transonic and super-[NASA-TM-X-1507] 07 p1074 N68-17028 Design and flight pe sounding rocket [NASA-TM-X-1518] ace studies of Wasp 07 p1087 N68-17094 Basic principles of co ting self adjusting and [FTD-MT-65-433] 07 p0980 N68-17160 Development engin on test loop, and spe ering for Rankine system corro-imens preparation for tantalum INASA-CR-723521 07 p0941 N68-17194

SUBJECT INDEX Nimbus satellite stabilization and control subsystems 08 p1199 N68-17417 Portable, light weight, hand cranked direct current REPT.-21 08 p1119 N68-17565 Communications, electronics, telemetry, commu-nd control, and systems engineering for advan-INASA-CR-932041 08 p1262 N68-17621 Preliminary systems design of Autogenetically Con-olled Cesium /or colloid/ Electro-Nuclear Thrust system /ACCENT/ [NASA-CR-93255] 08 p1231 N68-17669 Schematics and systems de radar with automatic data plot sign for circular scar tting and digital comp [JPRS-44520] 08 p1149 N68-18020 Design, and development of simulator for space cabin at t of close Osphere control OS p1137 N68-18072 [MR-1285] tal tests of fast cycling 08 p1158 N68-18149 rectinical specificatio hydrogen bubble chamber gram cations for large European unber magnet development pro-08 pl159 N68-18156 Design concepts for Mirabelle hydrogen bubble namber magnet and optical systems 08 p1159 N68-18160 Size induced engineering problems of large hydrogen bubble chamber 08 p1159 N68-18161 Design criteria, operating principles, and pressure gradient problems of large hydrogen hubble chamber 08 p1159 N68-18163 Systems design, feedback control, maneuverability and performance analysis of dual reaction wheel con-trol of spacecraft pointing [TR-0158/3307-01/-2] 09 p1417 N68-18258 Design, and develops nent of satellite data reduction AFCRL-67-05611 09 p1302 N68-18396 Systems engineering approach used to improve pro-perties and cost of high-strength fasteners [TR-0158/3250-10/-2] 09 p1346 N68-18429 Mathematical prediction model for technological systems [AD-664165] 09 p1453 N68-18629 Performance and systems et of potential manned interplane [NASA-CR-73188] ms engineering requirements ry missions 09 p1421 N68-18851 Effect of phase detector characteristics on phase lock loop design parar [NASA-CR-69972] 09 p1320 N68-18961 Design criteria for Rankine magnetohydrodynamic generators in space appl NASA-TM-X-52191 09 p1276 N68-19019 Comparative evaluation of centralized versus decen-ralized computer system for digital data processing on Voyager spacecraft (NASA-CR-93555) 09 p1311 N68-19092

SUL

ter;

D

IRA

N/

[NA

find tion [NA

D

(AF

S

D

accu catio [NA

De diele of ca [TR-

De

De

[NA

system of sion [NAS

Mo

NAS

for A

Summary of Voyager spacecraft systems analysis and [NASA-CR-61660] 09 p1433 N68-19095 Systems analysis and engi-ort and mission-dependent eering, operational sup-quipment, and spacecraft definition for Voyag (NASA-CR-93564) ject 09 p1433 N68-19096 eering, science payload, sipment, contamination scepts for Voyager Mars nce data auti trol, and photo

09 p1433 N68-19098 for Voyager 1973 mission 09 p1434 N68-19100 Systems enginera spacecraft configura [NASA-CR-61661] seline design and func-ager spacecraft guidance sequencer, and power su onal requirements of and control, computer systems, and electrical [NASA-CR-93539] 09 p1434 N68-19103 Systems engineering Voyager spacecraft conf apportunities - 1973-1979 [NASA-CR-61662] data and recommended 09 p1435 N68-19151

spacecraft [NASA-CR-93561]

Systems engineering, structural design, and per-ormance data on recommended Voyager spacecraft 09 p1435 N68-19152

SUBJECT INDEX Systems engineering and performance data on elec-ical subsystems for recommended Voyager spacecraft configuration [NASA-CR-93549] Design alternatives and growth potential of recom-ended and upgraded Voyager spacecraft configura-NASA-CR-935601 Engineering analysis of sh and plume heating in spacecraft configuration [NASA-CR-93525] Systems engineering systems for optimum pl during 1973 Voyager mi [NASA-CR-94669] System synthesis and parametric module design criteria based on technological requirements common to manned interplane [NASA-CR-73192] Subsystem design criteria for integrated manned inurplanetary spacecraft concept [NASA-CR-66564] Optimal sensitivity design techniques to design feed-back control system for large, flexible booster [NASA-CR-93527] 09 p1321 N68-19267 Mission planning data for advanced interplanetary space flight Design of random signals for digital communication 10 p1495 N68-19741 Design concepts for optimal ra [RM-5475-PR] Systems and reliability en Pressure transducer cal [NASA-TM-X-53678] [NASA-CR-93781] tion system (NASA-CR-61669) Design of self bala Systems engineeris transminsion system [MTR-434] practices for liquid [NAA-SR-12585]

09 p1436 N68-19155

09 p1436 N68-19158

ud, temperature control, ecommended Voyager

09 p1437 N68-19161

lysis of photoimaging raphic coverage of Mars

09 p1344 N68-19162

09 p1425 N68-19223

09 p1277 N68-19247

10 p1590 N68-19615

10 p1496 N68-19872

eering for automatic

EX

1417

Tent

565

621

Con-

669

020

ato-

1072

ling

149

156

bble

160

gen

161

163

lity.

258

396

pro-

429

ical

629

ents

851

961

010

en-

092

095

096

ad, tion

098

ary

100

of

103

ded

151

152

10 p1530 N68-20044 control systems design 10 p1547 N68-20051 Design modifications for ground station direction ading receiver of airborne range and orbit determina-10 p1498 N68-20107 ment systems with feedback con [AFCRL-67-0586] we power meas rol mechanism 10 p1499 N68-20128 ing plan for national range data 10 p1499 N68-20182 Effects of surface Mach nur and specific heat ratio on geom soaic impulse turbine blade number range of 1.5 to 5.0 [NASA-TN-D-4422] abers, inlet flow angle etric features of super-sections over Mach 10 p1460 N68-20276 Deep space network tracking and radio navigation accuracy analysis, high-rate telemetry, and communications and facility engineering [NASA-CR-93821] 10 p1501 N68-20335 Life cycle design stages, systems levels, tasks in aintenance, and maintainability factors in systems en-10 p1617 N68-20521 Design and operation of automatic, low frequency electric measurement system with automatic plotting 11 p1695 N68-20645 ent progress of engineering standards and liquid metal systems and components (585) 11 p1738 N68-20878 Design feasibility of integrating small magnetic 11 p1667 N68-20973 Guide manual for aiding designers in selection of uct, tubing, and gasketing materials for space vehicles and missiles (NASA-CR-93927) 11 p1704 N68-20978 Mechanical construction and performance of elec-odynamic vibration isolator 11 p1795 N68-21103 Systems engineering and constraints, cost estimates, and program schedule for Venus flyby/entry probe mis-[NASA-CR-94234] 12 p1964 N68-21888 Moisture lockup, and methods of pinpointing ources of contamination in gas bearing gyro
NASA-CR-94240] 12 p1871 N68-21911 (NASA-CR-94240) Mathematical model for optimizing design criteria for Apollo man/spacecraft system and incorporating extensive physical and digital simulation of basic crew 12 p1855 N68-22151 [NASA-CR-66599] Systems engineering and analysis, structural analysis, and performance tests on two panel oriented solar [NASA-CR-94319] 12 p1819 N68-22233

Systems approach for extramination control technique [NASA-CR-94357] lishing cohesive con-12 p1823 N68-22442 applicable in prediction of low de in rocket propellant tanks 12 p1959 N68-22463 ation, evaluation, and ee axis, spacecraft at-Design, developmelivery of electroth 12 p1962 N68-22586 [NASA-CR-72362] Overall systems de (BNWL-500) nt flux test facility 12 p1856 N68-22597 tronic circuit design 12 p1853 N68-22661 (UCRL-70706) Systems design microminiaturized ro [SC-RR-67-656A] operating principles of 12 p1882 N68-22687 SNAP 23A project systems engineering as component testing, and [WANL-3800-9] alysis 12 p1908 N68-22714 Systems engineering, materials and component test-ng, and safety analysis for SNAP 21A power supply for scientetring oceanographic and meteorological busy [WANL-3800-4] 12 p1908 N68-22718 Engineering analysis for evaluating moving bed and ediator hydrogen-oxygen fuel cell conceptual designs 12 p1821 N68-22889 INASA-CR-944071 Panoramic cobalt 60 is operational data [CEA-R-3302] tion facility design and 12 p1857 N68-22988 Design and operation ty of solar observatory [TR-0158/9220-02/-5] on of triaxial magnetometer facili-13 p2046 N68-23047 Design, fabrication, and testi ode phase shifter ng of ring hybrid S band 13 p2038 N68-23052 Reliability optimi ries parallel system [ORC-67-40] on with limited resources for se-13 p2091 N68-23190 fety criteria for radionuclide t reactor 13 p2106 N68-23368 Operation and design safety containment in fast flux test re [BNWL-607] Optimal control syst occases with time delays design for dynamic 13 p2043 N68-23381 Design of guidance at utilization of information [NASA-CR-997] ol systems for optimu 13 p2043 N68-23438 Design and operation of grou on Luna 13 [NASA-CR-94587] neter-penetrometer 13 p2067 N68-23459 Design requirements for r manned earth orbital space sta [NASA-CR-94549] ts for reactor power system of 13 p2106 N68-23470 Design and synthesis mehicle systems dology applied to space vehicle systems (REPT.-67-C-229) 13 p2150 N68-23576 Integrating two-stage ra model of day-night radion (NASA-CR-94603) cooler into breadboard 13 p2068 N68-23609 Flying spot digitizer uring bubble chamber CERN-68-4 13 p2035 N68-23617

Techniques for measuri

design, data reduction met [AGARDOGRAPH-121]

Correction codes for processing use [FTD-HT-23-609-67]

Design plan, experi for Apollo application [NASA-CR-61759]

Design and test per solid propellant app apogee rocket motor (NASA-CR-94620)

Design and devel

system reliabilit [RM-5346-PR]

(ESD-TR-68-11)

Evaluation and ope sharing computer system [AD-666730]

BMWF-FB-W-68-071

Parametric reliability grazilhood procedures to

namic stability deriva-sizing balance system

and instrumentation 13 p2069 N68-23768

13 p2028 N68-23800

nd payload integration

13 p2156 N68-23888

of igniter system for technology satellite

13 p2145 N68-24000

iteria for large reusable rt system for 1980s 13 p2153 N68-24092

13 p2077 N68-24206

13 p2046 N68-24222

management of time

13 p2037 N68-24225

Time optimal control for class of common random

data transmission and

in for hunching of four ing rockets 14 p2349 N68-24368 Engineering support is Black Brant 2 scientific so (ERB-715) Safety and ope [CEAL-1038] 14 p2234 N68-24598 m of powerful Soviet 14 p2235 N68-24605 n of Soviet cyclotron for 14 p2235 N68-24606 ng dynamic charac-14 p2264 N68-24705 Design criteria for ge of lunar and planetary sample processors [NASA-CR-94767] ng engineering prototypes ampiers and mechanica 14 p2264 N68-24771 Physiological and environing of full pressure suits tal problems affecting 14 u2205 N68-24882 Design and performanter with neutron chopper [NI3S-R-515] 14 p2257 N68-24920 NASA-CR-94739] 14 p2223 N68-25184 Thermodynami [DED-2-MCB-1] 14 p2338 N68-25373 d error detection in linear CEA-R-33351 14 p2296 N68-25423 Subsystem, system, and studies for regenerative life vironmental control [NASA-TM-X-60421] al spacecraft integration support systems and co-14 p2207 N68-25521 Design of frequency modulated data acquisition stem for multichannel recording of wideband infor-ation from Saturn S-4B vibration test on test 14 p2368 N68-25574 qualification testing for Ge [NASA-CR-1106] i project 14 n2352 N68-25577 nce program research projects on systems analysis engineering, telecommunicatiom, guidance and (NASA-CR-94676) 14 p2349 N68-25601 Fidelity criteria for ev-gorithms, and design data calon system for future manne [NASA-CR-65498] 15 p2422 N68-25802 Neutron active analyses of standa [NBS-TN-428] in facility design, and materials 15 p2499 N68-25871 Review of dynamic flight control design [AFFDL-TR-67-[47] 15 p2440 N68-26249 Mariner Mars 1964 a INASA-CR-950961 15 p2426 N68-26254 coherest system to meet of post-Apollo missions 15 p2432 N68-26292 Systems design of pro data processing requi [NASA-CR-86057] Analyses and design of active and distributive alterating current networks nating current (TR-400-180) 15 e2441 N68-26469 Internal acceleration for increased operation eculeration optimied of automatic o Systems [FTD-MT-67-59] 15 m2441 N68-26492 Calculated current dist patterns for synthesis of as [FTD-MT-24-113-67] 15 p2429 N68-26682 Design practices and pac-tion of high voltage breakdo components aging methods for preven on in spacecraft electronic 15 p2447 N68-26906 ata adaptor for parallel [AD-668384] 15 m2429 N68-26915 diation shield 16 p2733 N68-26973 NASA-CR-61640 Development of 2i [ECOM-02082-1] le battery 16 p2591 N68-27001 Systems engineeri Stanford two-mile lie [SLAC-80] pment development of accelerator 16 p2636 N68-27032 pment of acoustic flow ring turbulent flow over vehicle surface durin reentry 16 p2639 N64-27064

Solid state laser radar tri [WRE-TN-PAD-146]

SUB

D

(NA

D

D

VARK

air v

D

stati (BN

F

Man

(NA

C

Di

[AM

Mari [NA

Su crite [NA

Lo

De

(NAS

De work [HDi

Sys

IKA

De tunne instri (AA

ual for developing com-TM-3596) 16 p2628 N68-27100 Design and performers [FTD-65-372] of roller contact bearings 16 p2666 N68-27113 M-460 computer and 340 scope display puckage ith subroutines for machine editing [AFCRL-68-0146] 16 p2628 N68-27125 Approximation model for predicting multimodal crest statistics and system reliability for impulse noise 16 p2714 N68-27338 [AFML-TR-68-30] System concept and preliminary design for new Hydrographic Survey and Charting System /HY-SURCH/ 16 p2655 N68-27571 Systems engineering data and design specifications or Biosatellite active primate simulator for Biosatellite active primate s [NASA-CR-95217] 16 p2638 N68-27694 Design specifications for radioactive sources, X ray nits, and betafrons 16 p2723 N68-27699 Feasibility of NASA literature application to highway safety and transportation engineering [NASA-CR-93223] 16 p2799 N68-27724 Design concepts and development programs for ex-andable manned space structures 16 p2783 N68-27919 Design, fabrication, and reliability prediction of 16 p2773 N68-27927 Feasibility development of self-deploying elec-tromagnetic energy focusing reflector for space or transportable ground based operations 16 p2625 N68-27929 Optimum design of spacecraft power supply systems sing fuel cells, and characteristics of energy conver-on methods 17 p2813 N68-28738 sign techniques for solar generators based on all-photovoltaic cells 17 p2814 N68-28740 Complete functional description of high flux isotope reactors with reactor design, safety, fuel, control, and reactivity data included [ORNL-3572, REV. 2, V. 1A] 17 p2930 N68-28796 Synthesis and optimization ical elements based on use of [FTD-HT-67-74] of diagrams with real log-name algorithms 17 p2864 N68-28903 Pioneer 6 space p control system design ([NASA-CR-86071] stabilized orientation 17 p2977 N68-29274 Systems analysis and engis Venus 67, Mariner 4, Marine neering data on Mariner er Mars 69, and Surveyor missions technology 17 p2977 N68-29308 NASA-CR-95711] Systems engineering app of techniques 17 p2991 N68-29349 development data on spacecraft design and cs systems, and chemical earch and advanced clear electric propo NASA-CR-95761] 17 p2972 N68-29415 of an aircraft integrated Systems engineering st data systems /Acids/ [USAAVCOM-TR-68-1] 18 p3044 N68-29670 Technique for converti card read for use in digital [AFRRI-TN67-4] each into punched oter systems 18 p3039 N68-29684 Synthesis and systems outlivariable systems eering of optimum linear 18 p3102 N68-29875 Systems design of high-castering fast, intermedial uitivity radiometer for and slow neutron and FTD-HT-23-856-67] 18 p3073 N68-29889 Random search in op tiparameter automatic-op [FTD-HT-67-363] on problems for mulion systems 18 p3050 N68-29940 Laboratory methodolo plication to Apollo progra [NASA-TM-X-1599]

[TR-4/29/] Systems eng [ANL-7392] (AD-671 28) (TR-3) signal analysis with ap-18 p3041 N68-30240 ide crystals as optical 18 p3041 N68-30275 ne into periodic one, 18 p3041 N68-30280 age, retrieval, and dis-rd reactions

Radio frequency interference and noise of parantenna as function of elevation and azimuth ang [SRDE-67004] 18 p3037 N68-20 p3492 N68-32447 m and azimuth angles 18 p3037 N68-30442 Stellar image fluc totoelectric tracki r calculations for Redesign and co of laser Raman spec-20 p3436 N68-32499 RTS-4527] 18 p3085 N68-30548 Models, analysis, ar liability and availabilit [PIBMRI-1365-67] ns for system reelopment of M-1 injec-20 p3485 N68-32524 tor hydrogen oxygen engi [NASA-TN-D-4730] 18 p3158 N68-30604 Design and evaluat delay line content-addr [C-68-5] glass computer storage memory system 20 p3442 N68-32599 Operating characteristics of a stem used to remove accumulate utomatic blowback ed powders from sin-Design of terminals i tionary operational en-tission system 20 p3593 N68-32728 18 p3118 N68-30693 TER-1331 n of camera system for DODGE Electronic designation Design evaluation of filaments for heating cyl [NASA-TM-X-1630] electron bombards 18 p3079 N68-30820 thermionic converters 20 p3531 N68-32968 Human factors and mans role in man machine stems applied to allocative decision making AD-671[28] 19 p3215 N68-31149 Maximum speed wind to el for reentry m Surface diffusion and los ters examined to increase tu [NASA-TM-X-52445] g effectiveness parame-ne blade loading 19 p3193 N68-31260 [NASA-TT-F-11886] 20 p3456 N68-33024 Recuperator for c ton cycle solar energy space power system (NASA-CR-1150) 20 p3403 N68-33062 Engineering design of tra measurement of very low fre [NASA-CR-61922] e system for phase Systems and test sesearch human cer s for developing space incering prototype for rbital onboard experi ncy signals 19 p3238 N68-31296 Design, fabrication, and te orbit determination model has [NASA-CR-61899] ts of airborne range and Apollo Applicati [NASA-CR-66650] 20 p3411 N68-33297 19 p3238 N68-31326 Feasibility of usin chaiques for long di ver contial cables Engineering design d of airborne range and o [NASA-CR-61900] vehicle-borne subsystems se code modula telephone transmis 19 p3238 N68-31327 20 p3440 N68-33353 Engineering design co orbit determination trequipment for vehicle an [NASA-CR-61901] epts for airborne range and sponder station, and test transponder checkout tical parameters to meet system requiren [TR-0158-S3960-30/1] onder checkout 19 p3238 N68-31328 sealed nickel cadmium be 20 p3517 N68-33364 Electrochemical pe continuous cycling of a [NASA-CR-9601] Mass spectrometer for high temperature inert gas analysis of cover gases in liquid metal cooled nuclear tel cadmium hatteries 19 p3204 N68-31473 specified sonic boom Design of bodies to [LA-DC-8999] 20 p3480 N68-33368 A-DC-8997)
Systems design of digital data correlator
20 p3446 N68-33489 signatures [NASA-TN-D-4704] 19 p3194 N68-31484 Hardware design and computer programs for spaceborne multiprocessor computer system [NASA-CR-1158] 19 p3248 N68-31499 ic analysis and design for bull-in-tube satellite 20 p3596 N68-33534 Parametric design data on canned ac induction mo-tors for space nuclear electric power systems [SAN-679-5] 19 p3205 N68-31544 Design of spin axis and velocity control system for 20 p3597 N68-33538 Design and construction at for flux variation in a [NIM-177] Application of optimal control uses, and whice attitude control systems 21 p3670 N68-33650 activation analysis 19 p3259 N68-31607 [NASA-CR-61939] Digital reading systems for telem (FTD-MT-66-68) 19 emetry equipment 19 p3241 N68-31614 Statical method of minimal design for nonlinear olume functionals extended by variational calculus 21 p3711 N68-33702 Design and constructi Error propagation and tolerance analysis in en-gineering design and stress analysis problems 21 p3783 N68-33788 [ANL-TRANS-588] 19 p3311 N68-31636 Defense and space oriented ble to future transportation need [PB-178270] nologies transfera-19 p3389 N68-31723 New methods for design of adaptive flight control Description of constraint portion of nonlinear op-mization program developed for solving engineering enign and economic problems 21 p3722 N68-33904 [NASA-CR-1152] Method for determinitrol of linear processes ng minimal response time con-19 p3301 N68-31752 21 p3672 N68-33955 by application of shift re-Synthesis of digital systems Design and evaluation of sensing and limiting circuit [NASA-CR-61927] tion of motor inverter with current AFOSR-68-1300 19 p3257 N68-31823 21 p3667 N68-34012 ous research projects in 4 solid state physics 19 p3250 N68-31892 Summary inform ment index redundancy lity of systems 21 p3673 N68-34151 Radial logic and improvachemes for increasing reliab [RAE-TR-67306] ESD-TR-68-83] d test of prototype Design, country Engineering estin curved shell panels [NASA-CR-89185] supersonic flutter of NASA-CR-666701 19 p3286 N68-31984 21 p3789 N68-34201 Electrochemical syst en to recover water from Onboard oxygen ge ground support equips and submarine use (NASA-CR-96543) ation equipment with minimal it and applicable to spacecraft [NASA-CR-66652] 19 p3233 N68-31991 Design and functi acromodule n of magnetic tape system 21 p3639 N68-34262 Analytical data for electric power system com-onents in advanced high temperature potassium Ran-19 p3251 N68-32079 SNAP-19/Nimbus B in [NASA-TM-X-63300] 19 p3374 N68-32087 kine nuclear space p [CONF-680802-1] 21 p3726 N68-34481 Computer aided designed facility to aid designers in Multipurpose single tion feasibility study [NASA-TM-X-61237] nch vehicle configura-NASA-CR-96154) 19 p3251 N68-32102 21 p3780 N68-34587 Matching measuring minimum disturbance wh [NASA-TM-X-61244] nents to systems for rument is connected 21 p3694 N68-34671 (FTD-HT-23-765-67) try equipment 20 #3434 N68-32353 Automatic collection data in digital form [AFCRL-68-0259] d processing of geomagnetic Engineering feasibility study on structural dynamics, nienna electrical properties, and systems of kilometer 20 p3467 N68-32390 Investigations of TE sub 01 m amulucer for millimeter wavel ode circular waveguide wave orbiting telesco [NASA-CR-96629] 21 p3775 N68-34806 20 p3448 N68-32404 Diagonal variances and off-diagonal covariances of tates considered in new techniques in suboptimal near filtering Historical flow data and Air Traffic Control current 22 p3850 N68-34884 20 p3455 N68-32426

Properties of pot

data storage modia [NASA-CR-86075]

Conversion of seq with savings in logics [NASA-CR-95880]

d reactions 18 p3133 N68-30325

22 p3816 N68-35102

22 p3851 N68-35136

dation optical commu

22 p3834 N68-35174

22 p3943 N68-35392

22 p3954 N68-35407

22 p3853 N68-35586

22 p3910 N68-35693

22 p3806 N68-35744

22 p3852 N68-35785

22 p3966 N68-35815

e fan/shaft engines for ad-

DEX

12447

na for

2499

m re-

12524

orage

2599

al en-

2728

3024

sergy

3062

pace e for peri-

3297

3353

eters

3364

gas

3368

1489

ellite

3534

i for

3538

n of

650

1702

1788

itrol

904

955

rent

012

всу

151

of

201

262

481

ura-

587

for

671

ics,

106

of mai

(BNWL-613) (JPRS-46561) (JINR-P13-3812)

SUBJECT INDEX Process development of system for digital computer recessing of psychophysiological data to obtain high rest tolerance personnel stress tolerance perso [NASA-CR-1122] Ground circuit design Design of pulse position mode nication system (NASA-TN-D-4814) Designs and performance tests of three phase alter-uting current plasmatrons intended for obtaining low [FTD-MT-24-235-67] Design study of convertil vanced rotary wing aircraft [EDR-5640] Design, development, and testing of open circuit hot ir wind tunnel for studying evaporation of hydrocar-(DLR-MITT, 48-14) Design, construction, and tests of all-pneumatic free gyroscope with wide angle gas bearing supports [NASA-CR-66675] 22 p3878 N68-35590 Design, construction, and test data on ruggedized flight feasibility model of mass spectrometer based on monopole principle for use on Saturn launch vehicles [NASA-CR-61961] 22 p3878 N68-35635 Neutron irradiation of samples under high hydro-Flight control system design data and helicopter mulation data for V/STOL aircraft advanced avionic technology [NASA-CR-86102] Mathematical modeling and control of large complex Design parameters for orbiting topside sounder for Mars and Venus, and comparisons with earth orbiting occultation experiment. occultation experime [NASA-CR-97087] [NASA-CR-61980] works [HDL-TM-68-18]

IAASU-2821

Calculating spectrometer error due to input signal actuations, and optimal solution to designing simple 22 p3880 N68-35886 Design requirements for mechanical and electrical components of radar land mass transparency system [AMRL-TR-68-8] 22 p3839 N68-35941 Design and performance characteristics of Mars hard lander capsule point designs, and criteria and mission constraints for capsules 1 and 2 [NASA-CR-666/78-3] 22 p3967 N68-35984 Analytical design data for capsules 3 and 4 in the Mars hard lander study system [NASA-CR-66678-6] 22 p3967 N68-35985 Engineering design of Mars hard lander capsules 5 and 6 and illustrations for increasing payload size [NASA-CR-66678-7] 22 p3967 N68-35986 Supporting data for mission planning and design criteris of Mars hard landing system [NASA-CR-66678-8] 22 p3968 N68-35987 Low order feedback control design for linear mul-23 p4034 N68-36087 Design, equipment specifications, and operating characteristics for cross wire resistance microwelding 23 p4066 N68-36095 Design of active 90 degree phase difference net-23 p4018 N68-36156 Synthesis of random variable from power spectrum for application to onboard and inflight alignment of carrier aircraft inertial navigation system platforms [FSR-AD6-04-68-1] 23 p4106 N68-36198 NOVA computer system for reactor physics studies [KAPL-P-3431] 23 p4100 N68-36231 Design and construction of Mach 3 blowdown wind meel for supersonic mixing studies, and wind tunnel 23 p4039 N68-36258 Summarization of Soviet conference papers on serry of invariance and its application to automatic (FTD-HT-23-893-67) 23 p4035 N68-36291 Flux-gate magnetometer /design concept/ 23 p4061 N68-36303 Synthesizing system with variable structure in presence of interference of random stationary process that acts on logic-forming unit of system - cybernetics 23 p4036 N66-36377 Worst case disturbance approach to design disturbed control system, using min-max solution 23 p4036 N68-36449

Systems design of digital computer real-time control satem, and interface hardware for early launch laser racking system [NASA-CR-61981] 23 p4019 N68-36453 Design, construction, and instantan-latevision projector [NAVTRADEVCEN-693-2, V. 1] 23 p4061 N68-36517 Engineering specifications for wide angle television display system [NAVTRADEVCEN-695-2, V. 2] 23 p4062 N68-36531 Summary data on various science and engineering activities of Environmental Science Services Adminis-23 p4095 N68-36563 Design of 30 watts/pound solar array [NASA-CR-97205] 23 p3994 N68-36618 Assembly and subsystem testing for Mariner Mars pacecraft model and advanced planetary mission [NASA-CR-97215] 23 p4168 N68-36632 Evaluations of system reliability formation concerning reliability [FTD-HT-67-463] ity with incomplete in-23 p4068 N68-36666 Optical radar system de predicting reflected radiat [SC-DR-67-115] and range formulas for rom aerosol clouds 23 p4073 N68-36762

Aerodynamic analysis of high speed ground trans-portation system [TRW-0618-6026-R000] 23 p3985 N68-36764 Economic, political, and system and structural design studies of earth resource satellite observation 23 p4177 N68-37117 Multivariable control systems for industrial applica-(NASA-TT-F-435) 23 p4039 N68-37293

Analytical work during de-applied to reliability of power [EV-65-O] sign and tests of hardware supply systems 23 p3996 N68-37358 Design and operation of compatition puter controlled reactor [BNWL-SA-1832] 23 p4105 N68-37366

rvatory, La Silla, bulletin ent and meteorological ob-European Southern Obs describing facility develops servations 23 p4042 N68-3737?

Development history and design modifications for at-titude control subsystem of OGO [NASA-CR-86107] 23 p4178 N68-37394 23 p4178 N68-37394 Shadow equation for satellite of major planets in solar system, lunar orbit, and sumerical app expansion ite, consistent ephemeri m, correction process fo oproximation of Hermit

23 p4174 N68-37398 Digital generation of acceleration voltage for mass spectrometer, and development of low power, non-destructive readout, plated-wire memory 23 p4066 N68-37414

Science utility of automated roving vehicles
23 p4174 N68-37421 Experimental design optimization using statistical 24 p4273 N68-37436

Analytical conceptual designs on electrical power system components in advanced high temperature, potassium, Rankine nuclear space power systems for 0.25 to 10.0 megawatt range. [SAN-679-8] 24 p4198 N68-37438 nance characteristics of agnetic shock tube for Systems design and performation control electron electron electron electron plasma flow pheromagnetic plasma flow pheromagnetic plasma flow pheromagnetic plasma flow plasma f

24 p4322 N68-37443 Optimum linear adapt systems with large parame [NASA-CR-97312] ve design of dominant type 24 p4224 N68-37727 Design concepts and operating principles of low al-titude and high frequency radio altimeters, and inter-cept and sighting radar (JPRS-4626) 24 p4290 N68-37730 24 p4290 N68-37730

Design concepts and operating principles of low al-titude RV-2 radio altimeters, and high frequency radio Intercept and sighting radar /RF-1/ 24 p4290 N68-37732 24 p4290 N68-37731

Design, manufactur of programmable pre-signal conditioner cture, and type qualification testing premodulation filters for NRZ pulse [NASA-CR-92346] 24 p4225 N68-37833 Development and testing of improved five Ah silver zinc cell designed with rigid-type inorganic separator [NASA-CR-72445] 24 p4200 N68-37834

Discharge chamber performance optimization for mercury bombardment ion thrusters [NASA-CR-72440] 24 p4336 N68-37845 Soviet textbook on financial designing aircraft in [PTD-HT-67-(89] nental methods of planning ry plants and shope 24 p4338 N68-38025 System design and logical design of serial digital omputer using glass delay lines as memory CC-68-23] 24 p4232 N68-38117 Design and fabrication of sonic analyses capable of determing mechanical condition of propulsion system of UH-1 helicopter (C-3030) 24 p4258 N68-38131 Motion analysis of tri-[WHOI-REF-68-42] buoyant structure 24 p4254 N68-38358 ECOM-01288-F1 24 p4237 N68-38485 U SNAP

T white a state of Studies and tests on post buckling behavior of T shaped aluminum columns [REPT-05154-3-T] 04 p0588 N68-13256 Improved fusion welded to re connections for vacuum [LA-DC-8978] 04 p0517 N68-13875 T TAIL SURFACES Subsonic and transonic flutter and flow studies of T tail of large multijet cargo airplane [NASA-TN-D-4316] 07 p0936 N68-17055 Sideslip angle effects on static stability characteristics of T tail transport configuration [NASA-TM-X-1665] 23 p3983 N68-36112 T-J3 AIRCRAFT In-flight simulation with variable stability aircraft
08 p1112 N68-17464 Mathematical models of human pilot performance in roll tracking task derived from flight simulator and T 33 aircraft situations (NASA-CR-97017) 22 p3817 N68-35348 T-53 ENGINE Electrophoretic process for coating T-33 engine air diffuser, exhaust diffuser, and combustion chamber housing with SERMETEL W 03 p0347 N68-12499 03 p0347 N68-12499 Electrophoretic process for conting air diffuser, en-sust diffuser, and combustion chamber housing of T-53 engine (VL-2488-2-0) 05 p0670 N68-14990 Electrophoretic deposition chamber hose ifffuser of T-53 engine [VL-2488-5-0] on of Sermetel coating on ing, air diffuser, and exhaust 20 p3490 N68-33155 ABLES [DATA]
NT CONVERSION TABLES
NT MATHEMATICAL TABLES

Cosmic noise, telluric currents, and geomagnetic ac-tivity for Alaska, April-June 1967 - Tables and charts [NASA-CR-89792] 01 p0054 N68-10032 ties during Interna-Counic ray and neutron intensional Quiet Sun Year 01 p0130 N68-10063 Surface climatic data tabulations for Antarctic sta-

01 p0086 N68-10064 Vehicle aspect, attitude, and motion data for Astrobee 1500 Flight 16.05 US - calibration data and curves for radar beacon, antenna, pressure, and tem-NASA-TM-X-63009) 01 p0137 N68-10141

Satellite mean orbi ts data tables 01 p0134 N68-10278 Handbook on methodology for calculating ther-monynamic properties of individual substances and constants necessary to calculate tables [FTD-HT-66-251, V. 1, PT. 1] 01 p0149 N64-10297

Alouette I satellite ionospher ic date 01 p0057 N68-10382 uette I satellite ionosp

ic data 01 p0057 N68-10383 Tables of solar radio flux data recorded at 10,790, 2,700, and 960 Mc/s (5R-009) 01 p0130 N68-10426

SUBJE

Tabs

AECI

1966 [IER-1

materi

AFC

Tab for ise

with a

Pres POPS

lite gr bles/ [R-68

(REF

Che

and or

Pok

Tab

strum facilit [AD-

Octo

tial, a

Tal

Ho

De netiss Work

Jag

Tal

Ta field

[AD

Du

Ta

(REI

[AN

Cen

Elec

Wor

Tabulated data for interpreting photographs from Lunar Orbiter III [NASA-CR-66484] 01 p0139 N68-10537 01 p0139 N68-10537 Lunar Orbiter I p aphic supporting data tables and evalu [NASA-CR-66481] oter program 01 p0135 N68-10564 Matrix element quantum mechan (JINR-P4-3405) or two-center problem of 01 p0111 N68-10635 Computer met problems and res [UCRL-17608] tion of diffusion 01 p0085 N68-10657 Solar radio flux d [SR-10] stinct events tables 01 p0131 N68-10672 (ORNL-TR-(666) 01 p0114 N68-10840 Geomagnetic field January-March 1966 [AD-639407] ty tables for Bangkok, 01 p0061 N68-10844 hies hased on data col-01 p0088 N68-10991 Techniques and eq ling graphic data [SCR-351] 02 p0184 N68-11276 cording to task, torque capacity, type, design, as [NASA-CR-90346] 02 p0217 N68-11487 Tables of array funct pressed in closed form limite Z transforms are for excitation function derived from known of [ITSA-36] 02 p0183 N68-11897 coils with rectangular Field ratio table for (ORNL-3972) t density 03 p0389 N68-12329 on data tabulated for otons, neutrons, and pi otoms, neutrons, and pi 0 to 400 MeV 03 p0314 N68-12507 mesons in energy ra [ORNL-3884] Table look up pe for computer programing chi-square propabili-INAA-SR-MEMO-12235] 03 p0361 N68-12581 gram in Washington Continuous air mo D.C. for data on air p [PS-173987] 04 p0598 N68-12854 Basic safety standards for rad ution protection 04 p0460 N68-12873 spheric data fr s in India for August 1966 - tables [KRC-A135, PT. 1] 04 p0498 N68-12987 ny 1967 - tables 04 p0475 N68-12988 Satellite tracking data for M rom 1957 to 1966 04 p0581 N68-13137 Table of satellite (RAE-TR-67039) Tabulated data sounding for Octob [REPT.-256-F] echoes for ionospheric 04 p0499 N68-13177 Launcher settings ver 150 leunchers - tables [ECOM-5152, SUP. B] ick settings for Asrobee 04 p0582 N68-13283 Uncorrected and be Canadian cosmic ray a [AECL-2785] corrected results from 04 p0570 N68-13319 Tabulation of p n periods as amplitud CERN-67-291 04 p0548 N68-13411 Gas dynamic f sted for several values [DLR-FB-66-82] 04 p0496 N68-13645 Synoptic meta 1959 to 1966 [EUR-3569.1] one at lapra from 04 p0533 N68-13740 vertical echo soundings lonospheric da at Dapango Togo 04 p0504 N68-13821 bervations, 1966 05 p0649 N68-13951 [A.15] up 4B, 5B, and 6B BM-IC-8360 05 p0673 N68-14109 trial sources of electromagnetic es [JPRS-43874] 05 p0732 N68-14266 des for quantizing Output probab envelope detecto (SC-R-67-1185) 05 p0639 N68-14316

rrical table of Lo nel functions with two imaginary argument [NASA-CR-917291 Wing surface pr 05 p0684 N68-14501 tunnel tests of propelli INASA-TM-X-15271 Tables of magnetic a trical parameters of fer-Flight vibration data of A 05 p0637 N68-14526 bility constants of or-[NASA-TM-X-63128] ganic metal-ion (UCRL-50200) Photodissociation cross and deuterium 27 vibrations 05 p0625 N68-14552 Line spectra for 1.9 and 6.3 micron water vapor Atmospheric rocket a ternational Geophysical [NASA-TT-F-11422] 05 p0627 N68-14662 Satellite tracking data for 31 August 1967, tables [NASA-TM-X-60794] 05 p0743 N68-14679 X ray wavelength st r problem of quar Tables of terms for tw Reevaluation of X ray a 05 p0717 N68-14719 [SC-T-67-0953] mical proper-Frequency tab ties of copper and selected of NBS-MONOGRAPH-1011 05 p0677 N68-14721 southern No (REPT.-90) speed fields in Pacific Contour charts of so phic data 05 p0653 N68-14781 (AD-665015) ters for sirfields in Tables of me Far East (AD-662426) uble sampling 05 p0686 N68-14930 (BRL-R-1382) Soviet statemic rays symptotic directions of Atmospheric traj 06 p0902 N68-15064 attering amplitude an niaphere for nose-on is cidence [TN-1967-54] 06 p0883 N68-15111 molecular force coeff (AEDC-TR-67-258) Tabulated data for a servation during April Convective heat treated circular tubes v 06 p0797 N68-15186 Catalog listing of artificia period Jan. 1963 to Nov. 1963 [NASA-CR-92585] ites position for [NASA-TM-X-1554] 06 p0909 N68-15424 Flight track maps as raft environment, Tables of molecular vit [NSRDS-NBS-11, PT. 2] meteorological flights [NASA-TM-X-63132] 06 p0795 N68-15992 Tables and curves for fin ata for photographs of Orbiter 3 [NASA-CR-66530] 07 p1085 N68-16225 [WAPD-TM-670] Discussion and da of revised JPL lunar Tabulated beam tributions required slot and axial dipole [NELC-1522] (NASA-CR-92993) 07 p1079 N68-16470 during Oct. 1967 07 p1086 N68-16553 Optical satell (ROE-STS-66) Direct and inverse tabl
[EDS-2] red on top surface Wind and temper: eteorological soundi rvations - June 1967 Vacuum and hydrog 07 p1095 N68-16628 Tables of profiles on me distion in H alpha line for n Data tables and related com absorption observed at Kiruna and September 1966 ing solar prominence 07 p1076 N68-16636 Tables of hourly ata for October 196 ionospheric parametric I from Woomers, South l'abulated data on polar : na for July - September 19 Australia |CPD-1966/10/W/L 07 p0992 N68-16800 vember 1966 from Ionospheric data Woomers, Australia [CPD-1966/11/W/] 07 p0992 N68-16899 pure metals from zero to 273 de [NASA-CR-94169] oper motion stars 07 p1000 N68-17048 Cross sections for elastic and inelastic scattering of protons from Ti-48, V-51, Cr-52 Cr-52, Fe-54, Fe-56, Co-59, Ni-60, Ni-62, Ni-64, Cu-63, Cu-65, Zn-64, and Zn-68 (ORNL-4182) 07 p1054 N68-17111 Tables of values to di transfer, and laminar boun ters for reentry vehicles [RM-5089-ARPA] es of geomagnetic ele-ories between 1941 and 08 p1166 N68-17339 elated results of dron cal radiosonde at Ber Calculation tables quantity operators of (ANL-TRANS-563) 08 pl 195 N68-17346 Tabulated physical collected from Cohoresearch vessel Brown [RLO-1725-91, V. 1] e soundings during 08 p1197 N68-17686 Tabulated physical, flected within Colum les of space vel research vessel Brows (RLO-1725-92, V. 2) 1967 [RAE-TR-67059] 08 p1245 N68-17909 IBM 7074 comput solution tables for su [NASA-CR-94531] ket sounding data for 08 pl 198 N68-18194 es and graphs detailing tests of structural or and salety of spherical prestressed concrete

09 p1442 N68-18755 from large scale wind short takeoff aircraft 09 p1271 N68-19065 hee 1500 rocket vehicle 09 p1437 N68-19210 on data for hydrogen 19 9 pl399 N66-19479 in U.S.S.R. during In-10 p1519 N68-19571 d reference values 10 p1567 N68-19821 energy levels 10 p1567 N68-19822 characteristic wind and to from light vessels in 10 p1521 N68-19888 ie earthquake data 10 p1522 N68-19989 cal quality con 10 p1534 N68-20101 413 precision-reduced 10 p1552 N68-20185 ry for determining 10 p1456 N68-20226 ata for water flow in ing heat fluxes and flow 10 p1614 N68-20338 d data on CV-990 air-10 p1553 N68-20520 ing effective cadmium irical filters with finite 11 p1699 N68-21449 litude, and phase dis-her type narrow axial lation patterns 11 p1663 N68-21551 mma distribution 11 p1733 N68-21809 easurement data from 11 p1736 N68-21827 eputations for polar cap between February 1965 11 p1695 N68-21830 12 p1864 N68-21866 12 p1952 N68-21868 spheric condition data - December 1966 12 p1864 N68-21871 rephere condition data ine 1966 12 p1864 N68-21872 ne skin friction, heat yer thickness parame-12 p1858 N68-21996 a elements of atc 12 p1935 N68-22729 il, and biological data r effluent area during cruises 12 p1869 N68-22827 al, and biological data or effluent area during 12 p1870 N68-22856 for computation of in 13 p2150 N68-23429 and intensity tables for intomic carbon monoxide Theoretical line positions ibratice-rotation hands of d (NASA-TM-X-63183) 13 p2012 N68-23466

Intranuclear caucade ca GeV protons and 1 GeV minum, and lead tabulated (NASA-CR-91811)

tions of 0.75, 1, and 2 trons on oxygen, alu-

05 p0713 N68-14473

TRG-1204/R/, PT. 2)

68-18755 cale wind incraft 68-19065 68-19210

8-19822 8-19EEE

inta 8-19989 control 8-20101 reduced -20185

-20226 flow in

-20520 dmium finite

21449 e dis-21551

from de ob-21827 1963

condi-11866 on 16

1871 data 1872

1996 omic 2729

data 1827

944 f in-429

for

rogen 19 68-19479 luring In-8-19571 E-19821

of free

-20338 90 air-

21809

21830

1868 data

heat ame-

Tabular presentation of cosmonitored by stations in Canada [AECL-3064] mic ray neutron data 13 p2067 N68-23552

World Data Center A tables on gravitation, tsunami, ismology, longitude, latitude, and meteorology data 13 p2060 N68-23618

Worldwide radio noise m rements - March-May [ER-18] 13 p2061 N68-23698

Electromagnetic shielding effectiveness of building materials - tables and charts [RADC-TR-67-446] 13 p2109 N68-23786 Supplementary cosmic ray tables to IQSY manual [AFCRL-68-0030] 13 p2147 N68-23799

Tabulated state variables and thermodynamic values for isentropic discharge phenomena of water, starting with saturation 13 p2172 N68-24136 (DLR-FB-68-11)

Precipitation and Off-Path Scattered Interference (POPSI/Project studies of microwave radio and satel-lite ground transmission in same frequency bands /ta-bles/

[R-6801, ANNEX A] 13 p2031 N68-24302 Magnetic declination and intensity values taken at Kanoya, Japan, during 1962 - tables and graphs [REPT.-51] 13 p2065 N68-24335

Chemical, physical, a hanical data for Ce 14 [ORNL-4185] 14 p2209 N68-24383

Polar cap absorption events observed at Swedish geophysical station during 1965 and 1966 14 p2244 N68-24453 Tabular and graphical statistical data on peak day in-strument flight rules departures from ensouse air traffic facilities operated by Federal Aviation Agency (AD-667604) 14 p2183 N68-24460

Statistics on activities of scheduled air taxi operators

14 p2183 N68-24484 Tabulated data on temperature, salinity, geopoten-tial, and acoustic velocity of North Atlantic Ocean [CG-373-9] 14 p2245 N68-24525

Hourly ionospheric data for April 1967 recorded at Salisbury, South Australia - tables [WRE-CPD-1967/4/S] 14 p2246 N68-24549

Data on airglow, suroras, cosmic radiation, geomagnetism, ionosphere, and solar activity data collected at World Data Center A between July 1, 1957, and December 31, 1967 - catalog

14 p2246 N68-24569 Japanese geomagnetic observation data for 1963 14 p2246 N68-24592

Tabulations for calibrating spectrometer used with

(INSI-106) 14 p2254 N68-24646

Data tables on sunspot groups and solar phenomena 14 p2339 N68-24695 Tabulated data from workdwide stations on magnetifield intensity, cosmic radiation, solar activities, an ioncopheric soundings in 1967
[AD-67807]
[4 p2247 N68-2483

14 p2247 N68-24833 Duta tables for calculating flow fields of satellite

plasma interactions i NASA-CR-947921 14 p2247 N68-24916 Tables and graphs for variations in wind velocity and direction near Paris [REPT.-56] 14 p2285 N68-25470

Tabulated data on ionospheric characteristics - March-April 1966, Garchy

14 p2252 N68-25474 Tabulated data on ionospheric characteristics - May-June 1966, Garchy

14 p2252 N68-25475 heric characteristics - July -

14 p2252 N68-25476 Comparison of spacecraft vibration data from flight and ground test measurements

14 p2362 N68-25484 Wind and temperature measurement data from meteorological sounding rockets, and radioscode ob-servations - July 1967

14 p2286 N68-25593 Half life measurements for decay curve calculation of first and second order components of chemical spe-(ANL-7400) 15 p2404 N68-25700

ermodynamic data Compendium of shock way (UCRL-50108, V. 1, SUP. 1)

15 p2506 N68-25705 Catalog of rocket and satellite duta from World Data Center A for period January 1966 to December 1967 15 p2564 N68-26240 Geomagnetic observation data from Asia [AD-667957] 15 p2460 N68-26288 Tables of comparative equ ets for accelerati

15 p2402 N68-26501 Data tables for tests of thirty eight feel smemblies in Halden Boiling Water Reactor /HBWR/ [HPR-81] 15 p2503 M68-26505

isotopes for fast and Nuclear data for plutus thermal neutrons [IA-1152] 15 p2522 N68-26545

Economic impact analyses survey procedures, and input-output coefficient tables [NASA-CR-95093] 15 p2580 N68-26753 15 p2580 N68-26753

Input-output coefficients for 86 final demand sectors in Philadelphia region [NASA-CR-95092] 15 p2381 N88-26754 ic forms in central normal

Distributions of quadr density functions - tables [AFOSR-68-0849] 15 p2495 N68-26767 [AFOSR-68-049]
Criticality data tables for unmoderated and moderated transism and photonism cores [AHSB/S/-HANDBOOK-5, PT. 1]
15 p2504 N68-26793

Aerological radiosonde data evaluation for various atmospheric heights, tropopause, and freezing levels in 1967 measurements.

16 p2701 N68-27266

Duily curves of ionospheric electron content in lunar radio echoes [AD-668663] 16 p2652 N68-27335 16 p2652 N68-27335

Wind and temperature measurement data from seteorological sounding rockets, and radiosonde ob-rvations - August 1967 16 p2701 N68-27677

Tables summarizing blood chemistries, hemodynamic responses, fluid and mineral balances, urine components, and other data obtained on males subjected to bed rest and tilt tokerance tests (NASA-CR-92178, PT. 2) 16 p2598 N68-27784

Lunar data atlas with graphs and tables of ionospher-Faraday rotation and electron content versus time AD-668718] 16 p2656 N68-27868 (AD-668718)

neding performance and a salt reactor Neutron data effer power cost estimates [ORNL-TM-2157] salt reactor 16 p2705 N68-28048 Fluid dynamic data for design of liquid metal lubricated tilting-pad journal bearings in laminar and curbulent flow regimes (NYO-3383-7, V. 1) 16 p2671 N68-28077

Tabulated data of Q values for three particle reac-ons on nuclei hydrogen-2 isotope to calcium-48

(RMWF-FRK-67-91) 16 p2730 N68-28118 Curie levels and Roentgen rates for neutron ir-

O Data from radar range and Doppler observations of Vanus at inferior conjunction [NASA-CR-95374] 16 p2770 N68-28254 16 p2770 N68-28254

Tabulated performance data of full-scale rotary wings at high advance ratios and advancing tip Mach numbers based on wind tunnel tests [NASA-TN-D-4632] 16 p2586 N68-28268 16 p2586 N68-28268

June 1965 tracking data for Soviet artificial satellites in Polyot, Elektron, Cosmos, and Molniya series

May 1965 tracking data for Soviet artificial satellites in Cosmos, Polyot, and Elektron series

May 1965 tracking data for Soviet artificial antellites in Cosmos, Polyot, and Elektron series 17 p2966 N68-28569

February and March 1965 tracking data for Soviet artifical earth satellites in Cosmos, Polyot, Elektron, and Voskhod series 17 p2967 N68-28593 oviet artificial satell

April 1965 tracking data for Scin Cosmos, Polyot, and Elektron series 17 p2967 N68-28594 Feburary and March 1967 tracking data for Soviet artificial earth satellites in Cosmos, Polyot, Elektron, and Voskhod series

17 p2967 N68-28645 Cinethoodolite satellite observations made at Earlyburn during Apr. 1963 to Mar. 1966 - tables /data/ (ROE-STS-71) 17 p2849 N66-28657

Soviet artificial satellites ad Protos series 17 p2968 N68-28674

August 1965 tracking data for Soviet artificial satel-lites in Polyet, Elektron, and Cosmos series

inta from GHOST bulloon Upper atmospheric wine PR flight over Southern H NCAR-TN-34, V. 10]

Upper atmospheric wind data from GHOST balloon Jul Hight over Southern Hemisphere - tables NCAR-TN-34, V. 3] 17 p2908 N68-28907

Soviet research on ap (JPRS-45706) ngy and medicine 17 a2821 N68-28916 al cross sections of elastic leuteron scattering and for real part of proton-on ISLAC-TRANS-801

Trajectory map, and position and wind data tables on obal horizontal sounding balloon flight over Southern Hemisphere [NCAR-TN-34, V. 9]

17 p2908 N68-38961 ng replaceable tables to Compiler system desi-pecify source language of MAC-TR-421 17 p2859 N68-29176

Balloon data of bar-lor Southern Hemisph NCAR-TN-34, V. 7) flow in upper atmosphere 17 p2908 N68-29300 ic flow in upper atmosphere

Balloon data of burel for Southern Hemisphe [NCAR-TN-34, V. 5] w in upper atmosphere Balloon data of baro for Southern Hemisphe (NCAR-TN-34, V. 8)

17 p2909 N68-29302 w in upper atmosphere for Southern Hemisph (NCAR-TN-34, V. I) 17 p2909 N68-29303 Balloon data of barot or Southern Hemispher NCAR-TN-34, V. [1] ow in upper atmosphere

17 p2909 N68-29304 Balloon data of baro or Southern Hemisphe NCAR-TN-34, V. 4) ow in upper atmosphere 17 p2909 N6E-29305 w in upper atmosphere

Balloon data of barotrop for Southern Hemisphere [NCAR-TN-34, V. 8] 17 p2909 N68-29306 Wind and temperature reteorological sounding rock stious - September 1967 ensurement data from

17 p2909 N68-29398 August 1965 tracking data for Soviet critificial satel-es in Polyot, Elektron, and Common series 17 p2973 N68-29442

September 1965 tracking data for Soviet artificial stellites in Polyot, Elektron, Cosmos, and Proton so

17 p2973 N66-29443 metric tracking data on Soviet Cosmos series REPT.-1051 17 p2973 N68-29501 Probability tables for ivariate normal density fu termining integral of in for arbitrary elliptical

ICAL-XM-2464-G-1, V. 1) 17 p2907 N68-29541

Probability tables permitting determination of in-tegral of bivariate Gaussian density function over ar-bitrary elliptical region [CAL-XM-2464-G-1, V. 2] 17 p2907 N68-29542

Tabulated dat December 1967 [ROE-STS-72] 18 p3169 N68-29656 Tables and maps of precip

18 p3109 N68-30075 Hartree-Fock wave for atoms and tone [ARL-68-0026] action tables for astrophysical 18 p3131 N68-30173 pic thin, flat, and elastic

Vibrational spectra of in AE-2165) 18 p3179 N68-30292 ity data for selected Australian airports -18 p3110 N66-30293

Graphical and tabular data on optimizing constant deviation magnetic spectrograph [BARC-320] 18 p3077 N68-30434 bles and graphs of data on soutron cross sections classic scattering in deuterium 18 p3136 N66-30622

ate on Persona Carel Zone and vicinity - Septemb (AD-609394) 18 p3110 N68-30667

ler synoptic data for in 18 p3070 N48-30745

SUB.

TACA #

(FA

Eval syste (RD-

Co

(SRD

TACTE

TACTIO

TACTE

App on hw

TAGGEN U M

TAIL AS

body-v

Stab aerody sonic a [NASA

Tech

cept us support testing [R-717

U AVI U B-3 U F-1

U FD U MIR U SC-

TAILORIP U DES

TAILS [AS

TAKEOFF NT VE

Takeo

Bird st

SRDS-B

Error aircraft to

sonic tra pitch atti ARC-R

Tabulated data on worldwide unmanned and manned spacecraft launchings for period 1957-1967 19 p3372 N68-30903 Thermal conductivity data for metallic elements and paseous fluids [NSRDS-NBS-16, PT. 2] 19 p3384 N68-31346 Current speed, temperature, and salinity measured by Danish light vessels and coastal stations 19 p3271 N68-31514 Tables of mass abo coefficients for use in X ray spectroscopic analysis [AAEC/TM-454] 19 p3229 N68-31704 Systematic proced table of finite group [NASA-TN-D-4763] re for constructing character 19 p3301 N68-31961 Ritz method for solving problems on transvers-brations on plane elastic plates, and tables on coeffi cients of elasticity [NASA-TT-F-11576] 19 p3382 N68-31982 iplet tables for silicon Atomic energy levels at (NSRDS-NBS-3, SEC. 2) 19 p3336 N68-32068 Ionospheric data obta echo sounding for May 1968 [REPT.-263-F] ed at Freiburg by vertical 20 p3467 N68-32417 lonospheric data obtained echo sounding for June 1968 [REPT.-264-F] d at Freiburg by vertical 20 p3467 N68-32418 materials at low temperatures evaluation of austrelio and pearlitic steels, aluminum and copper allows tronzes, and brasses 20 p3498 N68-32674 Meteorological rocket so mesosphere, 1966 - tables [NASA-TR-R-288] dings in stratosphere and 20 p3524 N68-33036 Solar radio burst data recorded during Jul. - Sep. 1967 [SR-014] 20 p3582 N68-33223 Analytical representation of nucleon and pion emision spectra from nucleon-nucleus collisions in energy range 750-2009 MeV [NASA-CR-96371] 20 p3550 N68-33376 erty data tables for CHNOPS combustion and formation for ological interest 20 p3432 N68-33427 Thermodynamic proper compounds and heats of co organic compounds of biol [NASA-CR-96468] Declination, horizontal as nal variations, monthly mea 1967 from magnetic recordis [REPT.-9] tal and vertical intensities, diur-means, and K and C indices for at Finnish observatory 21 p3684 N68-33933 Wave velocity and direction tables computed from seismic array time lag data [BARC-309] 21 p3685 N68-33980 Physical properties of a ounds - data manual m ceramic com-TRG-1601/R/] 21 p3649 N68-34000 Tabulated data on measure sea surface and air tempera type, and wind speed in India ents of global radiation, res, cloud amount and n Ocean 21 p3717 N68-34257 lated data on explosive-plastics compatibility TEC-331 21 p3757 N68-34451 [PLASTEC-33] n on proton-proton collisions 21 p3744 N68-34635 Selected values of chem-ties of first thirty four elem-[NBS-TN-270] ical thermodynamic proper-21 p3655 N68-34724 Auroral electrojet activity index for 1962 based on agnetograms from auroral zone observatories magnetograms [UAG-R-197] 22 p3864 N68-34810 Auroral electrojet activity inder magnetograms from auroral zone o [UAG-R-200] index for 1963 based on e observatories 22 p3865 N68-34811 Auroral electrojet activity index for 1964 based on agreetograms from auroral zone observatories [UAG-R-198] 22 p3865 N68-34812 Auroral electrojet activity index for July to December 1957 based on magnetograms from auroral une observatories [UAG-R-194] 22 p3867 N68-35040 Auroral electrojet activity index for 1938 based on magnetograms from auroral zone observatories [UAG-R-192] 22 p3867 N68-35041 Auroral electrojet activity index for 1939 hased on magnetograms from surveial zone observatories [UAG-R-195] 22 p3867 N68-35042 Auroral electrojet activity index for 1960 based on magnetograms from auroral zone observatories [UAG-R-199] 22 p3867 N68-35043

Tubles summarizing corrected data of meteorologic observations made by 1959 Belgian expedition to An-tarctica Tabulated photon cross sections from 0.001 to 100 MeV for elements 1 through 100 [LA-3753] 22 p3929 N68-35414 Tables of energy and ang-target bremsstrahlung in meta [NASA-TN-D-4755] Two theta value tables from X ray analysis of gypsum [JUL-530-CA] Eigenvalves of dynamic spin Hamiltonian for ivalent iron ion in titanium dioxide host crystals - ta-INASA-TM-X-633591 Neutron scattering cross sections of oriented polyethyler [N-1151] Geophysics and space data bulletin featuring erospace environmental conditions and solar energy [AD-672978] T value limitation tables of probability distribution in human behavior [AMRL-TR-67-161] Handbook of technical data on operating charac-turistics and performance of Mariner 5 [NASA-CR-97200] 23 p4176 N68-36560 Review of solubility, p polymer diluent systems [NASA-CR-97218] Dose distributions near isotropic point and plane beta sources in air and water for 37 nuclides calculated from monoenergetic electron dose distributions - tables [AECL-2793] Time and latitude observationabulated for April-June 1966 Time and latitude observation tabulated for July-September 19 Time and latitude observation bulated for October-Decemb Tabular data on ionospheric observations from Meteorological statistics tabulated from data ob-tained at 26 weather stations in Greenland between 1961 and 1965 Tables of spectrum line numbers for stellar photo-Sunshine and solar energy received on ground in Uc-cle, Belgium Geomagnetic observations at Dourbes /Belgium/ in 1967 May 1968 monthly bulletin of ionospheric observa-tions performed at Dourbes in Belgium 23 p4057 N68-37090 May 1968 bulletin of climatological observations in November 1966 synoptic meteorological observa-tions in Belgium Star tables for satellite attitude of [RAE-TR-68048] 23 meteorological sounding rockets, and radiononde ob-servations - January 1968 June 1968 monthly bulletin of ionospheric concernations performed at Dourbes, Belgium 23 p4058 N68-37144 Geomagnetic measurements to cal Observatory for 1960 - tables [GR-41] Tabulated solar as (RRC-A155, PT. 2) Tabulated data on median characteristics of iono-sphere over Ahmedabad, India - April 1968 23 p4058 N68-37275 Tabulated data on median characteristics of iono-sphere over Ahmedabad, India - May 1968 23 p4059 N68-37276

Tabulated data on median characteristics of iono-ohere over Ahmedabad, India - June 1968 23 p4059 N68-37277 22 p3904 N68-35256 Tabulated data on median characteristics of iono-shere over Ahmedabad, India - August 1968 23 p4059 N68-37278 Tables of shock wave drag parameter as function of each number and local shock angle for body in superar distributions of thick 22 p3930 N68-35535 [ISAS-427, V. 33, NO. 9] 23 p3987 N68-37331 Magnetic effects from normal magnetograms, pulsa-tions pi and pc, K indices, and magnetic storms during August 1968 at Port Moresby, Australia - tables 22 p3918 N68-35636 usfralia - tables 23 p4059 N68-37346 Catalog of proper motion stars for regions through G225 - tables and photographs 23 p4173 N68-37347 22 p3951 N68-35639 rthquake phases from Australian 22 p3932 N68-35680 seismograph stati 23 p4358 N68-37348 liminary earthquake phases from Australian ograph stations for September 2 through 9, 1968 -22 p3872 N68-35704 23 p4358 N68-37349 22 p3814 N68-35857 Preliminary earthquake phases from Australian eismograph stations for September 9 through 15, 1968 tables 23 p4358 N68-37350 Tables on three hourly indices of geomagnetic activi-ty, October 1967 through March 1968 - Magnetic Ob-servatory, Alibag, india eability, and diffusivity in 23 p4083 N68-36640 23 p4060 N68-37383 Performance data on ingradient resistance and voltage characteristics of SNAP 27 n- and p-type therage characteristic legs moclectric legs [MMM-8406-1757, V. 1, PT. 2] 24 p4293 N68-37481 23 p3999 N68-36760 and radio time signals erties, quality control, variance on of test specimens of SNAP n 23 p4056 N68-36843 and p-type thermoelastic legs [MMM-8406-1757, V. 1, PT. 1] and radio time signals 23 p4057 N68-36844 24 p4293 N68-37527 ns and radio time signals er 1966 23 p4057 N68-36845 Climatological data tables from Chicago area -January 1, 1950 to December 31, 1964 [ANL-7084] 24 p4279 N68-37587 Expected value tables of order statistics from first symptotic distribution to extremum values for sam-23 p4057 N68-36916 24 p4275 N68-37647 Calculation tables for lower confidence limits of reli-able life under Weibull distribution 24 p4275 N68-37648 23 p4096 N68-36951 Preliminary earthquake phase from Australian seismograph stations for 14-21 October 1968 - tables 24 p4250 N68-37788 23 p4172 N68-37057 Minima of eclipsing variable stars-tables 24 p4342 N68-37917 23 p4057 N68-37063 lonospheric data from 8 stations in India for January 1967 - tables [RRC-A140] 24 p4251 N68-37966 23 p4057 N68-37064 Tables and graphs of solar phenomena observed by Rome, Italy, observatory during Sept. 1968 24 p4339 N68-38007 data for materials 24 p4355 N68-38210 Tabulated thermo [AFML-TR-68-98] 23 p4096 N68-37091 parameters 24 p4278 N68-38274 [AROD-4721-13-M] Simulation studies of Kolmo distributions with unknown para [AROD-4721-11-M] ogorov-Smirnov test on 23 p4096 N68-37093 meters 24 p4278 N68-38275 Thermal fission yields of several isotopes from Pu 19 and effective capture-to-fission ratio for Pu 239 N-1189] 24 p4298 N68-38444 23 p4172 N68-37113 239 and effi [IN-1189] Electron-electron interaction energies in terms of relativistic one-electron orbitals - tables [LA-3899] 24 p4322 N68-38465 23 p4096 N68-37119 Fast fission yields and long lived fission products for uranium 235 from EBR-1 - tables [IN-1207] 24 p4298 N68-38468 s from Thule Geophysi-TABULATING
U TABULATION PROCESSES 23 p4058 N68-37219 TABULATION PROCESSES ical data from vertical Tabulations of trajectory data for one way trips from Earth to Saturn, Pluto, Uranus, and Neptune vis Ju-23 p4058 N68-37272 piter swingby [NASA-CR-61186] 05 p0737 N68-14508

[FTD-HT-23-916-67]

Auroral electrojet activity index for 1961 based on magnetograms from auroral zone observatories [UAG-R-196] 22 p3867 N68-35044

X

0

0

78

31

11

47

49

50

83

ce

27

87

47

di-

48

ine

88

117

ыту

3.84

by

107

110

274

on

275

Pu

144

of

465

468

508 om-

075

.

Heating equipment for clearing snow and ice deposits from Tacan monitor antenna faceplates [FAA-RD-67-6] 01 p0046 N68-10347 Control, display, and recording console for Signal valuation Airborne Laboratory flight impection

[RD-67-22] 07 p1021 N68-16243 Computer program for error analysis and per-formance of Vortac in ice and snow environment (SRDS-RD-68-3) 11 p1737 N68-20757

Flight tests for false echoes received by Tacam distance measuring equipment [SRDS-RD-68-8] 17 p2912 N68-29417

TACTICAL AIR NAVIGATION U TACAN

TACTICS

Lightweight portable shelters for Tactical Air Com-and bare base /remote site/ applications 16 p2786 N68-27943

TACTILE DISCRIMINATION

Apparatus for measuring localized vibration effects on human tactile sense 16 p2599 N68-27815

TAGGING U MARKING

TAIL ASSEMBLIES

Bonded-type elast helicopter tail rotor [BHC-572-099-004] neric thrust bearing for UH-1 04 p0443 N68-13285

Tail assembly design requirements and effects of body-wing configurations for transonic fighter aircraft 11 p1621 N68-21636

sonic speeds [NASA-TM-X-1620] 18 p2995 N68-29952

Technical feasibility of new helicopter tail rotor con-ppt utilizing monolithic spar of directed glass fibers apported in epoxy matrix - design, fabrication, and (R-717) 24 p4198 N68-38279

TAIL SURFACES
NT T TAIL SURFACES

Approximation method for analyzing shape of shock read of conical tail section of blunt body of revolution

18 p2997 N68-30229

TAILLESS AIRCRAFT
U AVRO 707 AIRCRAFT
U B- 58 AIRCRAFT
U F- 106 AIRCRAFT

FD 2 AIRCRAFT MIRAGE 3 AIRCRAFT

SC- 1 AIRCRAFT

TAILORING U DESIGN

TAILS (ASSEMBLIES)
U TAIL ASSEMBLIES

TAKEOFF

VERTICAL TAKEOFF

Takeoff behavior calculation sonic transport design constrapitch attitude time history [ARC-R&M-3493] ms of slender wing super-ained to follow specified 03 p0301 N68-12447

Bird strike hazard control during aircraft takeoff and (SRDS-RD-67-52) 04 p0440 N68-13103 Error analysis for circraft takeoff and land olite measurements on

(DLR-FB-67-55) 06 p0846 N68-15656 ents during takeoff climbout opera-

Noise measurements tions of jet transports [NASA-TM-X-60863] 07 p0935 N68-16521 Bivariate frequency distributions of pressure altitude ad temperature and effects on required runway ngths and allowable takeoff weights

II p1619 N68-21046 off tests on jet tr gircraft including use of

Scat takeoff director [ARC-R&M-3508] 14 p2184 N68-24790 Takeoff and lane noise levels (INC/C3/P3) 14 p2187 N68-25362

Glider flight path at takeoff a [NASA-TT-F-[1759] ing tow winch 18 p3003 N68-30398

Computer program calculation of ship-borne cataput launched aircraft flight path [ARC-CP-977] 19 p3198 N68-31204

Measured noise intensity levels and serodynamic performance data on flyover noise during DC-9-30 takeoff and landing [DAC-33753] 20 p3399 N68-32221 20 p3399 N68-32221

Eighthill method for calculat noise propagation during takenff [DAC-33481] ting turbojet aircraft 20 p3400 N68-32226

ulating jet aircraft noise atween noise intensity in se during takeoff and rela-levels and aircraft design 20 p3400 N68-32227 [DAC-33359] water takeoff and land-

23 p3990 N68-36486 Low level wind and to craft operations at airpor ure information for sir-

24 p4286 N68-38396

Noise reduction during takeoff and landing of Tu-124 aircraft [NASA-TT-F-11557] 16 p2590 N68-28020 16 p2590 N68-28020 reial aircraft accident during

(PB-177339-4) 19 p3199 N68-31740

Noise intensity levels under flight path of DC-8 with IT3C-6 turbofas engine during takeoff, and selection of runway lengths and engine power reduction [SM-23641, REV.] 20 p3400 N68-32229

TAKEOFF SYSTEMS

U AIRCRAFT LAUNCHING DEVICES

TALC

Hot pressing characteristics of talc components [JEN-190-DME/I-18] 18 p3098 N68-29755

TALKING U WORDS [LANGUAGE]

TANDEM BOTOR HELICOPTERS NT CH- 47 HELICOPTER

Instrumentation and recording system for aerodynamic loads and load effects on rotor and finelage of flying tandem helicopter [D8-0382-1] 19 p3196 N68-31858 Airload mes ts and helicopter rotor blade

[D8-0382-5] 21 p3620 N68-33647

Evaluation of aerodynamic flight load measurements on rotary wings of tandem rotor helicopter [D8-0382-4] 21 p3621 N68-33648 Analog to digital data reduction of in-flight aerodynamic measurements on tundem rotors [D8-0382-3] 21 p3625 N68-34041

TANGENTS

Tangential radiography methods for measuring wall thickness and individual layer thickness in multilayered structures having apherical, cylindrical, and related accountries. Y-DA-15831 05 p0666 N68-14097

TANK GEOMETRY

Development of water tank random channel simulator for directional antennas

07 p0966 N68-16980

Analytical and experimental investigation of propel-nt distribution during outflow of spherical tanks for saible space vehicle application 1444 To 14281 22 m3857 N68-35104 lant distribution duri possible space vehicle NASA-TN-D-4828) 22 p3857 N68-35104

TANKS (CONTAINERS)
NT CYLINDRICAL TANKS
NT FUEL TANKS
NT PROPELLANT TANKS
NT SPHERICAL TANKS
NT STORAGE TANKS
NT WING TANKS

rature control of electroplating tank by heat

13 p2171 N68-23907 Pressure test analysis for large multiple cell tank with sectioned skin [NASA-CR-61221] 14 p2359 N68-25222

14 p2359 N68-25222 Scaling and similarity study of liquids discharged from containers through orifices and tubes [NASA-CR-61964] 22 p3858 N68-35229

TANTALUM

Corrosion products of oxygen doped tantahum ex-posed to potassium at 1800 deg F [NASA-TN-D-4213] 02 p0222 N68-11511

Activation method used to measure cross sections producing isomeric state of Ta 180 in neutron reactions with energies from 12.2 to 17.9 MeV [INR-795/JPL] 03 p0395 N68-12627

Formation, and growth me layers on tantalum, and tantalus [LA-DC-8803] osurements of carbide tungsten alloys 05 p0676 N68-14543

Behavior of stainless steel, I 5 and tantalum in hydrogen-SC-CR-67-2656] as steel, Hastelloy C. Haynes alloy 05 g0628 N68-1490

Elastic and inelastic fast neutron scattering from tan-talum, rhenium, and platinum [ANL-7363] 08 p1212 N66-17400

and tentalish 08 p1186 N62-17860 malloyed tentalism, Ta-Diffesion bo [RAI-383]

Creep replace properties of 10 percent W, and T-111 alloy [ORNL-TM-1994] 09 p1353 N68-18874

(IS-T-113) 11 p1650 N68-21068 tics of oxygen solution I sodium environment 11 p1651 N68-21119 (ANL-7335)

etallic joints tested to sand joint 12 p1881 N68-21898 Tantallum-etainless ste determine overall strengt [NASA-TM-X-1540]

um at temperatures exiffusion of uranis ing 2600 deg C 12 p1886 N68-21960

a data for testalus in 1.Oc-10 to 15.0 MeV (AHSR/S/-R-141) 12 p1889 N68-22616

ining of sustenitic stain-obium or tantalum 13 p2073 N68-23439 on oxidation behavior of less steel with inner [NASA-CR-72353]

Effects of silicide o niobium and tantalis (NASA-CR-94582) 13 p2082 N68-234

ed metal surfaces from 13 p2018 N68-23838

Oxidation and reduction talum pentoxide and det univity and Hall effect entaken metal and tan eation of electrical re-

15 p2415 N68-26395

Work functions and electron emission measurements during surface innization of indian and audism on tan-talic filament [FTD-MT-67-58] 15 p2417 N68-26579 15 p2417 N68-26579

contings of iridium on and tunesten 17 p2900 N68-28635 High temperature tantalum, niobium, m [NASA-CR-95569]

Reduction of tantalum pentachloride by hydrogen, actrolytic refining of zirconium, and rolling metals in (JPRS-45912) 18 p3091 N68-30307

tion of tests l surface 18 p3091 N68-30306

[NASA-TN-D-4725] 18 p3093 N68-30504 or point defect model calcu-idenum, tungeten, and tan

BNL-11594] 18 p3155 N68-30552 Development and testing of lum-stainless steel murcury i double containment to beiler for SNAP 8 ages

NASA-TM-X-52452) 19 p3309 N68-31043

Spectrographs
f tantalum 182
(BNL-TR-215) 20 p3548 N68-33150

NASA-TN-D-48041 22 p3950 N68-35356 did solutions of curbon,

nitrogen, and oxyge (ORNL-TR-1942) TANTALUM ALLOYS

Creep behavior of T-111 alloy tubing under biaxial stress and stress effects on corrosion behavior of T-111 alloy with potamium 02 p0223 N68-11650 m base alloys for use

in advanced space po (NASA-CR-72316) 04 p0521 N68-13625 Grain size and are creep properties of di-base alloys (NASA-CR-72306) emperature effects on strengthened tunishen

04 p0522 N69-13630 environment at elevated term Molybdenum base all creep tested in vacuum

NASA-CR-723191 04 p0522 N68-13631

temperate of carbide 05 p0676 NGS-14543 Formation, and growt layers on tantalum, and to [LA-DC-8803]

FORTRAN computer program for calculating two dimensional target missile trajectories [TR-10-60-001] 09 p1419 N68-18696

produce

CONF-

Safety

Mathe

hydroger DESY-

dicting u

get displi USAMI

Succes of effect

ments us (USC-13

groups o

Crater

Life c

Huma

axis com

tory task

of respon

Task o

on leade [TR-58]

Manag complex [PIBEE6

TASK SEC

U CON

NT AL

Auton

tion and

(SRM-6)

Huma ontrol t

INASA-

Relati

Comp AD-66

Accel

response human o INASA-

Flight requirem

NASA-

Body I

Solution for trutte

pairs of I

TAXIING

Simula visual ta: (CRAE-

Four three dis

TAUTOM

(TR-9)

INASA-

TASK COL

TARGETS NT JIN NT RA

TANTALUM OXIDES Protective coating parameters for improving oxida-on resistance and reliability of silicide coating systems Magnitude of electrical potential-temperature curve stermined for tantalum, niobium, and magnesium for tantalum alloys [NASA-CR-72358] 10 p1538 N68-19623 High temperature properties of niobium and tan-talum alloys [BM-RI-7] 16] 10 p1540 N68-20212 (NASA-TN-D-4240) OI p0075 N68-10498 Photoelectric and electron microscopic processes for revealing inhomogeneities in anodic tantalum oxide 10 p1540 N68-20212 Creep tests of molybdenum base TZC, TZM alloys ottalum base T-111 and Astar 811C in vacuum en-[BMWF-FB-W-67-06] 06 p0893 N68-15241 Oxidation and reduction of tantalum metal and tan-fum pentoxide and determination of electrical re-stivity and Hall effect 13 p2082 N68-23642 NASA-CR-723911 Fabrication of T-111 Rankine system corrosion test loop using tantalum alloy capsules filled with alkali 15 p2415 N68-26395 Single crystals of beta-TA205 grown from molten INASA-CR-72383) 13 p2170 N68-23724 Potassium phosphate TR-0158/3250-10/-151 Creep behavior of to vacuum for extended time [NASA-TN-D-4603] m alloys in ultrahigh 23 p4082 N68-36404 13 p2085 N68-24111 U DATA PROCESSING
U MAGNETIC TAPES lity tests of niobi-Turbogenerator ma um and tantalum alloys ([NASA-TM-X-59596] ing potassium 14 p2272 N68-25150 TAPE RECORDERS refractory metal coatings Radar data analysis for high-speed magnetic tape data recording in spacecraft tracking [NASA-TM-X-63003] 01 p0027 N68-10068 sonic cruise vehicles 14 p2273 N68-25345 for leading edge regions [NASA-TM-X-60249] Tungsten and molybder fied and vacuum sintered tys for protection from on m alloy silicide shurry ap-Radar and associated high speed magnetic tape data [NASA-TM-X-63008] loys for protection for [NASA-CR-87765] 01 p0028 N68-10248 15 p2479 N68-25722 Systems design analysis of helically-wound magnetic upe and mechanical tape transport NASA-CR-91447] 04 p0481 N68-12917 Vapor deposition of alumin talum tungsten hafnium alloy [Al-ABC-12643] exide coatings on tan-[NASA-CR-91447] 20 p3535 N68-33490 Magnetic tape link op nary data recording [NASA-CR-91669] imization for split phase bi-Heat deformation of tanta alloy single crystals 22 p3888 N68-35089 05 p0662 N68-14400 Activation energy and strate of nichium and tantalus [NASA-CR-97276] m dependence of creep use alloys 23 p4080 N68-37153 te life tests of polyester film tape recorder belts CR-92519] 06 p0850 N68-15504 [NASA-CR-92519] Experimental test model of spaceborne magnetic tape recorder using iso-elastic drive system and electron beam welded housing [NASA-CR-92530] 06 p0847 N68-15807 TANTALUM CARRIDES Microstructure and che compacts of tantalum car [NASA-CR-90036] istry of hot premed powder nd chemis n carbide 01 p0067 N68-10078 Tradeoff design study in spacecraft tape recorder Thermal conductivity and ele-seism, hafnium, niobium, an and electrical resistance of zir-um, and tantalum carbides at 06 p0848 N68-16100 [NASA-CR-92539] sampled data control systems of to tape recorder versus control ligh temperatur Complex interacting sa uadruplex color video 01 p0152 N68-10777 Mechanical behavior of to lum carbide and mag-14 p2233 N68-25083 nesium oxide polycrysta [NASA-CR-90511] 02 p0225 N68-11625 Method and equipment for data on magnetic video tape [NOLTR-68-13] ent for recording ultrasonic test High temperature properties of Hf, Ta, U, and Zr arbides for fuel and structural applications 06 p0854 N68-15359 15 p2468 N68-26497 ing magnetic tape record-round equipment 17 p2886 N68-29189 In-flight data acquisition using and data preprocessed by g modynamic properties of hot de-graphite and niobium carnical and thermo ed tantalum carbi inde-graphite compo erational experience with airborne and ground etic tape PCM system used in flight tests of air-16 p2678 N68-27399 High temperature creep tests of niobium carbide-carbon composites, and evaluation of additives for tan-tulum carbide-carbon composites [NASA-CR-95222] 16 p2680 N68-27531 17 p2853 N68-29190 Magnetic tape flight load recorders for control of air-craft structural integrity 17 p2886 N68-29192 fation of recovery and recrystallization of m by finely dispersed particles of tantalum car-Airfoil device for recovery of accident data tape from crash landed aircraft [ARL/MET-64] 16 p2684 N68-28121 17 p2809 N68-29198 High temperature reactions of tantalum carbide and angaten with titanium, zirconium, and hafnium Tape recording and playback of reduced bandwidth devision transmission signals 18 p3035 N68-29885 19 p3223 N68-31200 WRE-CPD-1411 ms analysis of servo con-nagnetic tage recorder 19 µ3252 N68-31461 Design schematics and syst Fully dense AU, Ta/C alloy fabrication by powder metallurgy techniques (BMI-1840) 21 p3706 N68-34654 trol unit used on endless loop m [NASA-CR-95952] Course on magnetic tape recorders and playback of magnetic tapes used for ground based storage of telemetry data Characterization and manufa-raphite, niubium carbide, and to facturing of composite tantalum carbide powgraphite, ni ders [LA-3894] 21 p3690 N68-34132 22 p3892 N68-35908 OSO recording head and tape studies [NASA-CR-96890] 22 p3875 N68-35144 High quality single crystal hazirconium carbide preparation a [AFML-TR-67-137, PT. 2] Equipment and techniques for magnetic tape storage of antenna radiation patterns followed by compu-24 p4267 N68-37929 (EP-93-O) TANTALUM COMPOUNDS 23 p4030 N68-37373 Carbonyl chloride for tantalum recovery from tan-talum chloride reactions with calcium oxide and calci-um fluoride [15-1799] 16 p2613 N68-28082

TAPER U TAPERING

TAPERING

16 p2613 N68-28082

on of tantalum pen-

d surface 18 p3091 N68-30308

22 p3889 N68-35095

16 p2744 N68-27453

of niobium tantalom

TAPERED WINGS U SWEPT WINGS

Optimum taperis subjected to flexura [RAE-TR-46365]

TARE [DATA REDUCTION]
U DATA REDUCTION

TARGET ACQUISITION

ing for eccentrically loaded wire ties rai rotation

11 p1796 N68-21283

ollo spacecraft acquisi-

01 p0032 N68-10894

TARGET THICKNESS

Tables of energy and angular distributions of thick target bremastrahlung in metals [NASA-TN-D-4755] 22 p3930 N68-35535

Stereotelevision versus nonstereotelevision effectiveness for target acquisition in extraterrestrial environment with poor signal to noise ratio [NASA-CR-61594] 99 p1289 N68-18903 Search problems involving moving targets solved by using Markov decision models [NASA-CR-94611] 13 p2095 N68-23927 Multiple target monopulse radar with and without 19 p3239 N68-31345 Design parameters for developing phased array equisition and tracking radar for onboard experiment in Apollo spacecraft (NASA-CR-92249) 21 p3659 N68-34242 Predicting visual search times for target identifica-[AR-3] TARGET DRONE AIRCRAFT U JINDIVIK TARGET AIRCRAFT TARGET PENETRATION
U TERMINAL BALLISTICS TARGET RECOGNITION Ruk: I necessity and the second of targets in clutter and star signature analysis of composite targets 04 p0478 N68-13263 radar signature a (RM-5434-PR) Proposed visual contrast measurements during Gemini 10 flight 05 p0659 N68-14155 Effect of increased target information and aircraft velocity on side looking-radar operator performance in target identification [AMRL-TR-66-149] 05 p0630 N68-14444 Aeronautical charting and data display problems, and human performance studies of target recognition with side-looking radar 05 p0689 N68-14837 Simulator test of team method for reporting target locations in low altitude air reconnaissance [TR-751-12] 08 p1135 N68-17587 Visual factors affecting precision of coordinate mea-surements in aerotriangulation [AD-663821] 09 p1339 N68-18328 Visual detection range graphs for target recognition against night horizon sky [R67ELS-24] 13 p2005 N68-23471 13 p2005 N68-23471 Target detection on side-looking radar with temporary image motion delay [AMRL-TR-67-23] 13 p2030 N68-24090 Standardization of symbols representing targets on [TM-5-68] 16 p2604 N68-27337 Sum and difference radar patterns by single directional antenna for aircraft recognition and interrogation (RADC-TR-68-140) 18 p3033 N68-29774 Statistical decision theory applied to radar antenna processing for surface target detection in cluster [P68-35] 18 p3037 N68-30375 Airborne reflectometer measure ground object spectral characteristics eter measurement data and 20 p3481 N68-33397 Electroluminescent devices for digital data diaplay 20 p3482 N68-33410 Technique for visibility calculations of aerial observer sighting and target recognition ranges (SIO-REF.-68-13) 21 p3693 N68-34523 Dynamic visual target detection and recognition from low altitude aircraft 21 p3644 N68-34542 Simulated task loading effects on side looking radar target recognition 22 p3817 N68-35942 Effect of auxiliary magnification display on side looking radar target recognition [AMRL-TR-67-[34] 22 p3818 N68-35945 Remote sensing technology of multiband color photography for earth resources applications [NASA-CR-92360] 24 p4258 N68-38166 TARGET SIMULATORS Design requirements for mechanical and electrical components of radar land mass transparency system [AMRL-TR-68-8] 22 p3839 N68-35941

(BM-RI-7189)

TANTALUM NITRIDES

(AFAL-TR-47-345)

Thin films of tast specified by reactive up

Tantalum yield from reduc chloride by hydrogen on heate

X

13

5

pectrometric measurement of bremsstraklung fuced by thick gold-tungsten target during electron CONF-680706-11 22 p3935 N68-35838 TARGETS
NT JINDIVIK TARGET AIRCRAFT
NT RADAR TARGETS Safety problems related to handling of liquid (DESY-67/44) 12 p1932 N68-22640 Mathematical progra icting upper and lower svironment of target el rmulations for pre-or critical blast load ind systems 14 p2366 N68-25543 rement of Pulfrich tar-ncy differences 18 p3012 N68-30741 USAMRL-773] ethod for computation dar correlation experi-Successive approximation me of effective solid angle in angu ments using gas target (USC-136-138) 19 p3318 N68-31952 Position judgment accuracies of three perceiver oups of stationary targets of Ames trapezoid illusion 22 p3815 N68-35053 Crater characteristics pro oduced in metal targets by ities of 0.5 to 10 km/s 22 p3974 N68-35737 iron microparticles at vel [NASA-TT-F-11890] TASK COMPLEXITY pillometric experiments to measure work capacity ask complexity 06 p0783 N68-15924 Life cycle design stages, systems levels, tasks in saintenance, and maintainability factors in systems en-10 p1617 N68-20521 Human information processing rates on one and two axis compsensatory tracking tasks with secondary audi-(NASA-TM-X-61085) 13 p2004 N68-23328 as influenced by degree discrete tracking task 16 p2603 N68-27160 Information processing of response difficulty studi [NASA-TM-X-59802] VASA- random relation and member compatibility errors in small groups in leader-member relations in small groups 21 p3627 N68-34342 [TR-58] Mana ent planning and optimal time allocation in complex tasks [PIBEE68-0008] 23 p4004 N68-37224 TASK SEQUENCERS
U CONTROL EQUIPMENT
U SEQUENTIAL CONTROL TASKS NT AUDITORY TASKS NT VISUAL TASKS Automatic data processing on and revision of task analy techniques for construc-lysis diagrams during final (SRM-68-8) 02 p0185 N68-11306

Human response analysis in combined trajectory ntrol task, system-failures task, and motor response [NASA-TN-D-4356] 08 pl136 N68-18014 nt from others on task elationship of prior agr fidence and conformity 10 p1476 N68-20061 TR-9| Computer program for behaving antisubmarine warfare system [AD-668968] oral tasks of personnel 16 p2603 N68-27325 Acceleration stress effects on his exponses, control task performan human physiological ance, and associated

human operator charact [NASA-TM-X-59083] 16 p2605 N68-27534 Flight management operational problems and task quirements for low visibility approach and landing of supersonic transports (NASA-CR-73243) 19 p3201 N68-32047

Body temperature effects on manual performance [AM-68-13] 21 p3646 N68-34809 TAUTOMERS

Solutions of time-dependent differential equations for tsutomeric interconversion in A-T and G-C base pairs of DNA [UCRL-50412] 24 p4205 N68-38367 24 p4205 N68-38367 TAXHNG

on for studying problems of visual taxi guidance in low visib (CRAE-TR-67170) 12 p1902 N68-21987 Four forms of dynamic taxi design procedures for three dimensional character of runway/taxiway surface (FAA-ADS-68-11) 23 p4040 NAB-36479

TAXONOMY

06 p0778 N68-15540 ation of qualitative [RR-1[8] 10 p1547 N68-20249

TAYLOR INSTABILITY Two dimensional Taylor inst bility of inviscid fluids 23 p4043 N68-36042 Driving mechanism of strongly developed Taylor

23 p4046 N68-36263

TAYLOR SERIES
NT MACLAURIN SERIES

Method for improving mean orbital elements VINTI spheroidal satellite theory without use of obvational data [NASA-TM-X-63028] 02 p0265 N68-11280

tial differential equations Taylor series solution of pa saufied as Cauchy problem 21 p3712 N68-33972

Taylor distribution function used to space wide band sear array antenna elements 22 p3834 N68-35197 TEACHING U EDUCATION

TEACHING MACHINES

Introduction to JOHNNIAC Open Shop System /JOSS/ time sharing, special purpose computer designed for monexperienced users and professions RM-5220-PRI

02 p0183 N68-11056 Optimal learn es and self-teaching for au-[JPRS-43722] 04 p0485 N68-13803 ibility of cor isted flight controller

INASA-CR-9171 04 p0485 N68-13897 Training algorit ttern recognition machines

06 p0819 N68-15583 Digital storage plasma device for computerized (R-377 21 p3750 N68-34397

ng of transceiver train-21 p3666 N68-34622 s of various methods of

FTD-MT-24-363-67] 24 p4231 N68-37977

nce and behavior in team training experi 18 p3013 N68-29694

Team environment sim ychology in drop in hu tion and reinforcement (AIR-E1-5/68-TR) 18 p3013 N68-29695

hanical aspects of dynamic tear test of high per-nce structures to determine fracture toughness, intensity, and tear energy 07 p1090 N68-16504

Magnetohydrodynamic stabi sinst collisionless tearing of cu rrent layers 17 p2948 N68-28703

ce of carbo on black-filled and unfilled elastomer and strain crystal-20 p3509 N68-32530

Multiple rupture points in textile fabrics 20 p3602 N68-32931

TECHNETIUM

Chemical and physical properties of technetium (EUR-3641.D) 03 p0318 N68-12759 seta decay of techn

11 p1750 N68-20756 properties of rhenium, notals, and related alloys reviewed in terms of avails [NASA-TM-X-61073] 13 p2081 N68-23247

d tensile strength of tung-Fabrication technique sten-technetium alloys ar [NASA-CR-97099] 22 p3893 N68-36001 TECHNICAL WRITING

Techniques for describing programming languages (SP-2016-000001) 12 p1846 N68-22717

Application of systechnical writers [NASA-CR-96132] ns analysis to social factors by 19 p3388 N68-31519 TECHNIQUES U METHODOLOGY TECHNOLOGIES

NT BIOTECHNOLOGY

NT MILITARY TECHNOLOGY

Properties and technolo tive krypton isotopes [NP-TK-1563] 01 p0021 N68-10437 Computer search ser related technology to in [NASA-CR-89992] sier of aerospace 01 p0155 N68-10670 Long-term planning of a tific-technical development [JPRS-43352] economic and scien-01 p0155 N68-10773 cts on social, political, ace proceedings 03 p0429 N68-12081 Science and tech

and economic sectors - o [NASA-CR-91046] Impact of modern scie technology on society 03 p0429 N68-12082 Social significance, and psychological and physiological effects of technological advances

03 p0429 N68-12085 Survey on technology utilization of aerospace research output (AGARD, 544) 03 p0416 N68-12715

Soviet scientific and to d utilization of science logical progress in 1966. moroved national econo-[NASA-CR-92570] 06 p0930 N68-15774

theology assessment into proceed and engineering into proceed the control of the cedure for integrating ublic policy and legisla-emional committee On p0931 Nes-16020 Long term impact of t D on govern

private sectors relati NASA-CR-93355) 08 p1263 N68-18130 Technical feasibility satellites in practical of [NASA-CR-91251] and benefits of using

08 p1263 N68-18135 odel for technolo ematical pre-(AD-664165) 09 p1453 N68-18629

and visual briefs from ASA programs to i universities 39 p1453 N68-18667 rring technology from NASA program on t

NASA-CR-934821 09 p1453 N68-18732 NASA university pro and development of Stan [NASA-CR-93480] for technology transfer, nterest Profiles (SIP/ 09 p1453 N68-18733

11 p1807 N68-20871

nic growth a for planning advanced REPT.-67SD2571 14 p2376 N68-24494 Impact of serospa public systems [NASA-CR-84729] technological inputs on

14 n2378 Neg-25638 risted to conventional and //TOL/flight modes, web-

NASA-TNEX-6 16 p2588 N68-27472

Systems analysis re spinoff from sercens [NASA-CR-85204] 16 p2800 N62-27912 Application of super pace research, rad rs in nuclear reac FTD-MT-67-201 18 p3156 N68-30836

9-178271) 19 p3389 N44-31703

Defense and space to future transpor B-178270) 19 p3389 N68-31723 [PB-176923] nd transport 19 p3389 N68-31889

on nuclear cham ical pro 23 p4010 N68-36633 COO-1167-31

Review of recent for opments in h IFTD-HT-67-2161 23 p4072 N68-36680 Man and technology (FTD-MT-24-328-67)

24 p4209 N68-39479

FTD-M

Fixed

AFCRL

tram - fi

Соп

noise state

Freque

bit timing tive binar [NASA-C

INASA-C

/NASCOI [NASA-T

System line switch network

centers [NASA-1

Data li

AERE-R

Market

INASA-C

Performany mo

Performand signal

works wit [P-3536]

Function of phys

INASA-C

MTR-43

System

Passive pints in r

Perfor

TECHNOLOGY UTILIZATION Congressional hearings on budget requests of NASA Office of Advanced Research and Technology, Technology Utilization Division, and Office of Tracking and Data Acquisition ts of NASA 11 p1807 N68-21275 erated technology into ch fields Trunsferring NASA ger biological and medical remus [NASA-CR-94295] 12 p1822 N68-22026 of center for selective information within Quarterly operation memination of b Technology Utilizati [NASA-CR-94586] 13 p2000 N68-23455 Cumulative index to NASA survey on technology utilization of aerospace rem [NASA-SP-3021/06/] 14 p2377 N68-25221 Technology utiliza [NASA-CR-95099] 15 p2580 N68-26605 Medical applicati [NASA-CR-95100] 15 p2397 N68-26614 Conference report on tool ogy utilization impact on economic growth [NASA-CR-94804] 15 p2580 N68-26739 civilian public problem (AD-660086) Technol try technology to solve 17 p2989 N68-28809 Technology utiliza ir transferring tech on on product devel and NASA programs interminating information on product deve (NASA-CR-831921 17 p2990 N68-28964 atistics on NASA program al monographs and visual of disseminating educa-priefs to industries and NASA-CR-956961 17 p2990 N68-29027 Experimental program to process of NASA information (NASA-CR-95724) 17 p2990 N68-29038 m of theses for trial and t NASA-CR-95703 17 p2991 N68-29257 [NASA-CR-95708] 7 p2991 N68-29552 term, process is of innovati rocket engines (ORA-66-0006) 18 p3157 N68-29565 tionedical applications of NASA science and [NASA-CR-95804] 18 p3011 N68-30527 Review and so ense and space oriented urban transportation PB-178272] 19 p3388 N68-31690 spect of NASA p [NASA-CR-96810] 21 p3625 N68-34314 Major impacts of manned chaology on public health ce missions and related edicine, and biological NASA-CR-96811) 21 p3636 N68-34380 Contributions of NASA sponsored programs dealing th electroforming, Ni-Cd-Zn-Ag batteries, refractory tys, finel cells, solar cells, and stress corresion in Contributions of NASA q [NASA-CR-96813] 21 p3797 N68-34388 pact of space o m on astronomy and [NASA-CR-96812] 21 p3771 N68-34390 NASA Technology Ut on Program services 21 p3798 N68-34800 utistical data on o nul monographs and ersities and industries NASA-CR-972201 23 p4191 N68-36643 on of NASA ogy utilization regio (NASA-CR-97193) 23 p4191 N68-36682 Organizational plan, operational procedures, and transgement and technical services of regional dis-[NASA-CR-97258] 23 p4191 N68-36683 Proceedings of the Control of the Co to developing nations 23 p4192 N68-37216 of serospace generated ust 1968 MASA CK 97266 23 p4004 N68-37370 ng officiency and 23 p4192 N68-37379

U TECTONICS TECTONICS ieological and geophysical data compiled for tec-ic mapping of Yakutian Autonomous Soviet So-intic Republic Ges cialistic Republic [ACIC-TC-1148] 01 p0059 N68-10682 Tectonic movements and geological interpretation of gravitational and magnetic fields in Baltic sea region [ACIC-TC-1271] 05 p0655 N66-14969 Refracted transversining sectonic shear dy waves used for deter-06 p0835 N68-15379 tural radioactivity of rock used in com nic scheme of Ukrainian shield 06 p0835 N68-15387 pes of Sibera and Chukotka pen 06 p0836 N68-15390 nic fractures and origin of Crimean moun Tech 06 p0836 N68-15392 n Ukraine, and identifi-06 p0836 N68-15395 tectonic of southwestern 06 p0836 N68-15396 geological features of dorskiye islands 06 p0841 N68-15812 Kamchatka, Kuril, and (NASA-TT-F-11529) tion maps of finure (ACIC-TC-1292) 06 p0841 N68-15845 ferred classific n of calderas and volcano- tec-NASA-CR-93188] 08 p1166 N68-17373 Arctic and subarctic [T-487-R] 09 p1336 N68-19213 Ocean bottom top [ACIC-TC-1284] dediterranean Sea 13 p2060 N68-23578 ture, magnetic fields, m, and other aspects of a Soviet-bloc literature 14 p2245 N68-24534 ive processes based on physico-chemical pr (NASA-TT-F-11589) 14 p2248 N68-24944 lected abstracts of Soviet lines MFF OR OCCURO 23 p4055 N68-36553 TER U T SHAPE TEFLON (TRADEMARK) Cryogenic tests on Teffon to [LA-DC-8659] 02 p0283 N68-11536 Lithium fluoride-Teffon the for radiology application 04 p0512 N68-13706 Test evaluation or calsion bladder for nitro m of comp te Teflon-aluminum ex-troxide oxidizer propelant tank of lunar ort 05 p0732 N68-14858 Wear and antifrict on steel, stainless rties of sintered low car-nee, and nickel unsatu-h Teffon [FTD-HT-67-251] 07 p1012 N68-16894 Breakdown condu in film dielectrics of sil-e, calcium fluoride, cesi-d Teflon m oxides, cesium fi NASA-CR-93153] 06 p1222 N68-17300 Reflected and unixtures of enrich critical experiments on m metal with Plexiglas, pulyethylane, or Teff ORNL-TM-2082) 12 p1939 N68-22863 Space navigation, trackin engineering for deep space is [NASA-CR-90199] tion, surface heat shield-rise of Teflon, phenolic temeycomb, and silicone PRY FRE 13 p2167 N68-23395 [NASA-TM-X-61088] [AD-660040] Mass spectrometer a boundary layer chemiel [NASA-TM-X-60482] tion products and Electrical properties measurement techniques for rrain influencing performance of tactical telecommu-cation systems 14 p2375 N68-25426 cating flexible Teflon Process parameter films, crystallinity de electroplating Teffor [NASA-CR-95992] 19 p3284 N68-31357 (BNWL-741) 20 p3411 N68-32943 bility of Teflon film coatings fused 23 p4084 N68-36733

ers with walls of soft-tissue equivalent material for m [CEA-R-3540] uring photon doses 23 p4041 N68-37039 TEXTITES Shock formation of tektites during meteor impact on [NASA-TM-X-60922] 09 p1335 N68-19138 Photographic results of surface effects caused by ktire ablation [NASA-CR-61243] 24 p4355 N68-38015 TELECHIRICS U REMOTE HANDLING TELECOMMUNICATION

NT AIRCRAFT COMMUNICATION

NT AUTOMATIC PICTURE TRANSMISSION

NT BIOTELEMETRY

NT BROADCASTING CLOSED CIRCUIT TELEVISION COLOR TELEVISION DATA LINKS DEFENSE COMMUNICATIONS SYSTEM [DCS]
EDUCATIONAL TELEVISION FREQUENCY SHIFT KEYING GROUND-AIR-GROUND COMMUNICA: INTERPLANETARY COMMUNICATION
KEYING
LUNAR COMMUNICATION
MULTICHANNEL COMMUNICATION
OPTICAL COMMUNICATION
P.A.C.M. TELEMETRY
PHASE SHIFT KEYING
PULSE COMMUNICATION
PULSE COMMUNICATION
PULSE FREQUENCY MODULATION
PULSE FREQUENCY MODULATION
PULSE FREQUENCY MODULATION
PULSE FREQUENCY MODULATION
RADIO COMMUNICATION
RADIO RELAY SYSTEMS
RADIO TELEMETRY
RADIO TELEMETRY
RADIO TELEMETRY INTERPLANETARY COMMUNICATION NT NT MODULATION RADIO TELEGRAPHY
RADIO TELEMETRY
RADIOTELEPHONES
RANGER BLOCK 3 TELEVISION SYSTEM
REENTRY COMMUNICATION
SATELLITE TELEVISION
SPACE COMMUNICATION
SPACECRAFT TOMMUNICATION
SPACECRAFT TELEVISION
SPACECRAFT TELEVISION
SPACECRAFT TELEVISION NT NT STEREOTELEVISION TELEGRAPH SYSTEMS NT TELEMETRY TELEPHONY TELETYPEWRITER SYSTEMS
TELEVISION SYSTEMS
VOICE COMMUNICATION VOICE DATA PROCESSING WIDEBAND COMMUNICATION WIRELESS COMMUNICATIONS Statistical evaluation of reliability function of elec-tronic equipment or communications system 01 p0042 N68-10307 Echo 2 con ents summary and data processing resul [NASA-CR-89620] 01 p0029 N68-10362 Troposcatter communication boratory reproduction of trop dine and multipath variations on system simulator for opospheric hop dynamic fading and multipat (CSI-67-TR-2437) 01 p0046 N68-10570 Soviet conference on scientific and technological developments in telecommunication, cybernetics, au-tomata theory, data processing, and medical elec-(JPRS-43309) 01 p0030 N68-10681 Transmission loss from precipitation scatter inter-rence between space and earth communication [NASA-CR-90108] 01 p0032 N68-10936

and telecommunication

Environmental factors affecting short-range com

umentation network 02 p0179 N68-11006

02 p0182 N68-11709

02 p0182 N68-11711 programs related to juited to support inter-

02 p0183 N68-11713

03 p0414 N68-12306

ng research and develop-and control, engineering

election (AD-665) Error d TR-400-Design trahigh fre [NASA-C

Space p and engin control, p NASA-C

nization for coded commu-rties of arithmetic norms in 03 p0322 N68-12324

Relay link radio frequency system development, stark I ranging code spectrum and power amplifier levelopment for spacecraft application 03 p0323 N68-12327

Infrared technology in space - communication systems, detection, reconnaissance, antimissile missile, and quantum generator development [FTD-MT-63-46] 03 p0384 N68-12419 Fixed word duration and variable data rate procedures for feedback communication systems [AFCRL-67-0379] 03 p0324 N68-12783

World weather watch plan and implementation peo-gram - global observing, data processing, and telecom-munication systems networks

04 p0532 N68-13045

Mathematical model of electromagnatic propagation of communication signals diffracting around rocket exhaust plume [TR-1001/2220-10/-5]

04 p0478 N68-13305

noise stability and efficiency pro [FTD-HT-66-355] 04 p0478 N68-13309

Frequency selective fading, analog and digital com-munication, phase lock loop system, source encoding, bit tisning, and other studies on suboptimal self-deap-tive binary communication [NASA-Cx-91526] 04 p0488 N68-13311

04 p0488 N68-13311 General multiplexing tion system for data an [NASA-CR-91386] and binary communica-

ng code 04 p0479 N68-13350 Performance evaluation of ircuits in NASA con ion of high speed digital data communications network circuits in NASA /NASCOM/ [NASA-TM-X-63058] 04 p0480 N68-13826

System for switching circuits between on line and off line switching computers at NASA communications network /NASCOM/ primary and remote switching [NASA-TM-X-63059]

04 p0485 N68-13878 Data link with independent onication between teletype term nt channel duplex commu-erminals and central com-

AERE-R-55291 05 p0633 N68-14074 AERE-R-3222;
Market study for installation of purey
Market study for purey
Ma

Nuclear physics, materials science, propulsion, telecommunication, guidance, and systems analysis [NASA-CR-92558]

Passive relaying to incre ace between active on network 06 p0801 N68-15977

Performance of receiver strubinary multiplex communication ctures in synchronous 07 p0966 N68-16982

Performance optimization for transmitted reference and signal channel phase shift keying systems 07 p0966 N68-16984

Design of digital distribute works with implemented switch (P-3536) d communication netng schemes 09 p1304 N68-19090

Functional descriptions, interfaces, performance, and physical characteristics of Voyager 1973 flight spacecraft telecommunication system [NASA-CR-93552] 09 p1434 N68-19102

Systems engineering plan for national range data transmission system [MTR-434] 10 p1499 N68-20182 Bayesian learning applied to coded communication stems of time varying channels

11 p1659 N68-20679 Operational performance of Common User Radio ranamission Sounding /CURTS/ automatic frequency

selection system [AD-665807] 11 p1659 N68-2076e Error detection and error correction in null com

nication systems [TR-400-170] 11 p1662 N68-21468

orformance of solid state ul-telemetry transmitter 14 p2222 N68-24919 trahigh frequency prof [NASA-CR-61767] unication by low frequency electromagnetic m underground cavities and mines 14 p2225 N68-25203

ace program research projects on systems analysis engineering, telecommunications, guidance and oil, propulsion, and data systems (A-CR-94676) 14 p2349 N68-25601 control, propulsion, INASA-CR-94676

Feedback from ground stat tive telemetry system control [NASA-CR-94917] on for spacecraft adap 15 p2429 N68-26672

Relay communic n system for voice and telemetry named spaceflight network and [DAC-36171] 16 p2625 N68-27904

mications /con-Propaga [AGARD-CP-3] 17 p2850 N68-29083

Interplanetary space effects on S band telecommi 17 p2851 N68-29085

Alouette 1 satellite observations of resonance senomens at very high frequencies and high frequen-es, and effects of ionospheric plasma on space lecommunications 17 p2851 N68-29089

r wavelength systems for plications - high precision ment and earth atmosphere communication app ic antenna develops tion characteristics

17 p2853 N68-29110

Recursive techniques for data smoothing and compre-lation of low error rate com-[NASA-CR-95681] es for digital signal processing, ompression, and computer sime-17 p2855 N68-29517

es analysis, guidance and on, aerodynamic facilities Research data on syst control, spacecraft prope solid and fiquid propellant [NASA-CR-95582] telecommunication 17 p2974 N68-29544

Infrared modulator using induced free charge carrier sorption for telecommunication systems.

18 p.3083 N68-29851

User manual for COPTRAN /communication system optimization program translatory [NASA-CR-46080] 18 p3034 N68-29856

Electronic computer program user manual for op-timum design of space communication system [NASA-CR-86081] 18 p3035 N68-30039

Cyclic codes as error correcting codes for communi-tion channels 18 p3036 N68-30355

expensive digital data acquisition system for very low frequency rese (RLTM-ITS-113) 19 p3242 N68-31692

Automatic communication at very high frequover ocean environment [NA-68-10] n by tropospheric propaga-ies with aircraft operating 19 p3242 N68-31724

Tetrode for single sidel telecommunication [EE-TRANS-1756] 20 p3435 N68-32443

analysis of unified S network 20 p3437 N68-32711 Evaluation and perform band system for Apollo gre [NASA-CR-96289]

ary channel characterization using partitioned ov chains with applications to error correcting

21 p3655 N68-33653 ng-sequential decoding space telemetry link and technique for coherent deep near earth space missions [NASA-CR-96877]

22 p3832 N68-34948 Systems analysis of performance of M-ary orthogonal and M-ary PAM feedback communication

22 p3832 N68-35009 es of Canadian defense itsed for 1967 22 p3964 N68-35021 research laborator [DRTE-1195-U]

Summary data on telemetry ground station equipment for use with LES-5 and LES-6 (TN-1968-19) 22 p3835 N68-35333

Cassegrain antenna design principles for satellite communication ground station TH/68-E-01] 22 p3838 N68-35736 Optimization of synchronization of coherent com-

24 p4223 N68-37630 Radio wave propagation in ionized and nonionized edia, and applications in telecommunications AGARD-LS-29] 24 p4224 N68-37825 media, and applicant [AGARD-LS-29]

New developments in cable manufacture, and use of waveguides for long distance communication [FTD-HT-23-1006-67] 24 p4236 N68-38133

TELEGRAPH SYSTEMS
NT FREQUENCY SHIFT KEYING
NT KEYING
NT PHASE SHIFT KEYING
NT PHADO TELEGRAPHY
NT TELETYPEWRITER SYSTEMS

Operations manual for data control between witching elements of global telegraph system autodyna

[DCA-370-D175-1] .06 p0800 N68-15682 Operational performance of Common User Re ramsmission Sounding /CURTS/ automatic freque

11 p1659 N68-20766 Summary of radio relay do in U.S.S.R. nest and sesi 16 p2621 N68-27290

EGRAPHY TELEGRAPH SYSTEMS

U TELEMETRY

PLEMETRY
HT BOTELEMETRY
HT P.A.C.M. TELEMETRY
HT PULSE PREQUENCY MODULATION
HT PULSE PREQUENCY MODULATION
TELEMETRY
HT RADIO TELEMETRY

tics of telemetry equip-nd station H 01 p0028 N68-10168 ction of OAO sp

ment telemetry data [NASA-CR-90109] 01 p0032 N68-10870 Five element RC a frequency modulated [NRL-6449] num utilis

Papers on ELDO las vehicle stage separation

02 p0272 N68-11832

ic control system 03 p0331 N68-12090

telemetry for pas gr 03 p0349 N68-12173

ter much control of desired of spinishing belong come, and has 03 p0333 N68-12314

me, band type, and bit rate more efficia on in-action of error in pulse code modulation/frequen-orbitation link 03 p0323 N64-12659

of correlation coeffic with application to a [NASA-CR-91376] 04 p0475 NGB-129

Analysis and minimization of error between sample functions, second order processes and their functions in pulse code modulation telemetry [NASA-CR-91666] 03 p0829 N66-13948 05 p0629 N68-13948

Single helix, focused trave pacecraft telemotry systems as 3 watts power at 2.3 GHz at or reding wave take for and capable of delivering overall efficiency of 42.2 NASA-CR-46522) 05 p0635 N68-14202

-Telemetry of rad FTD-MT-65-4341

06 passo N68-15636 capacity ferrise core for Development of large lemetry data storage in BMWF-FB-W-67-10) 06 p0011 N68-13679

arch - combresser on al exchicitory 07 p1102 loga-17087

ics, talemetry, common control, and systems [NASA-CR-93204] 08 p1262 N68-17621

el of imig Tolomotry signals is PTD-MT-45-82) 06 pl 146 NGS-1709

Performance evalua-lock codes with 8 of every convenience of NASA-TH-D-4402) 00 pl150 N68-18178

Design, and devel processor system [AFCRL-67-0561] 09 p1302 NGB-19394

NASA-CR-6/506)

09 p1304 NGB-18979 rige of fixed 09 p1343 NGB-19949

inition

Error d Deep Spac (NASA-C

NT TEL

Time sh

olid str

MAC-TR

(IER-3)

P3C-062

computer to b (FTD-MT-

Color te

Television satellite sys (JPRS-437

sion pictur [NASA-CI

NASA-CI

Ruggidiz sistance to [NASA-CI

Phototel

Television surface by [NASA-CI

Electron

TG-9631

TELEVISIO

Radio frequency interferimulators of F6/2 ELDO las (ELDO-RFI-10) nch vehicle at Stevenage 10 p1498 N68-20070 ng and radio navigation elemetry, and communieccuracy analysis, his estions and facility on [NASA-CR-93821] 10 p1501 N68-20335 Test equipment for ca generator equipment [CM-R14-2.3] g telemetry and pulse 10 p1506 N68-20407 vo electronic system for hmar probe pointing [AFCRL-67-0647] 11 p1676 N68-20747 m for telemetry and relecommand applicati BMWF-FB-W-67-21) 11 p1665 N68-21726 ry systems for Aerobec 350 sounding rocket [NASA-TM-X-63156] 11 p1790 N68-21820 undancy effects as d self adaptive control for increased reliability of to [FTD-MT-24-149-67] 12 p1852 N68-22142 acy effects of reserve elements on system 12 p1852 N68-22143 a code for interference 12 p1852 N68-22144 Processing of Ariel 1 tele [ESRO-TM-45] ry data 12 p1845 N68-22190 dated PPM telemetry signal for su-NASA-TM-X-63176) 12 p1843 N68-22277 Anticipated probles ultrahigh frequencies [DOC -67SD263] try vehicle telemetry at 12 p1844 N68-22431 for telemetry system of [APL-TR-954] 13 p2034 N68-23348 m with error control coding for 14 p2222 N68-24907 Operating and maintenan for prototype solid state tele [NASA-CR-94657] procedures and theories 14 p2222 N68-24991 Test procedures and te st data for prototype solid 14 p2222 N68-24992 of codes applicable to deep space telemetry links [NASA-TM-X-59768] 14 p2226 N68-25330 of gravitation by an proscope using passive (NASA-CR-949331 15 p2509 N68-26282 g system to test fuse in-flight telement power supplies on o (HDL-TM-48-2) 15 p2469 N68-26637 Step-recovery dis for artiflery fuse tele [HDL-TM-68-9] h frequency multiplier 15 p2437 N68-26653 Voice and teles and other spay data communication with Apol-aft on very high, ultrahigh, and S (DEV-3796) 16 p2620 N68-27224 ol impact on national prology of U.S.S.R. 16 p2622 N66-27306 Solf bit synchronizers fo himery systems of digital co [NASA-CR-95890] ction of anticorrelated 18 p3038 N64-30529 elemeter units for artil-odulation gallium arso (AD-667627) 18 p3085 N66-30852 coding analysis, 19 p3236 N68-31026 mation theory to time sing, and comperisons 19 p3236 N68-31040 g telemetry systems 19 p3237 N68-31230 try data system 19 p3237 N68-31233 a over slowly

Method for correcting amplitude signals in mul-FTD-HT-67-3791 19 p3241 N68-31616 le, and performance of 19 p3245 N68-32116 Computer reduction of Ariel 1 satellite telemetry 19 p3251 N68-32121 ed-control and localization of 21 p3658 N68-34025 FM/FM telemetry equips nent and operational 21 p3658 N68-34026 ESRO telemetry, teleco d and tracking stations 21 p3658 N68-34074 ESRO telemetry, telecon at Redu, Ny Alexand, Fairb d and tracking stations a, and Port Stanley 21 p3658 N68-34082 PCM telemetry encoder and PCM command coder for recoverable upper atmosphere sounding 21 p3658 N68-34129 [BMWF-FB-W-68-33] Course on magnetic tape rec magnetic tapes used for gro telemetry data 21 p3690 N68-34132 n Marco I satellite 21 p3661 N68-34417 Data reduction systems for 5 recording of AM and FM telemetry sign (DLR-FB-68-34) 22 p3836 N68-35545 L-band and S-band teler using sun as signal source [TR-0158/S3816-88/-2] 22 p3837 N68-35571 al coded pulse code communicating with unmanned spacecrs [NASA-TR-R-292] 23 p4018 N68-36333 n, and analog to digital setry data 23 p4019 N68-36351 study of shadowing and metry antennas 23 p4021 N68-36765 (AFCRL-68-0331) 16-channel FM tele trolled oscillator [NASA-CR-92340] tem with voltage con-24 p4222 N68-37559 Binary to pulse po telemetry ground statio [NASA-TM-X-63377] 24 p4226 N68-37898 tical gun bore telemetry [PA-TR-3708] 24 p4226 N68-37924 Electrical and mechanical characteristics of 20-hannel telemetry system using vertically suspended 24 p4227 N68-38048 Narrow band optical filters, galactic X ray source de-sectors. AM baseband telemetry, and redundancy reemoval for telemetry data compressions [NASA-The-X-53760] 24 p4228 N68-38161 TELEMETRY AUTO REDUCTION SYSTEM
U DATA REDUCTION TELEPHONES
NT RADIOTELEPHONES Telephone tape software system for high speed data assumption to and from remote data processing center (CSM-7A-67) 20 p3444 N68-32959 Mathematical theory of stationary queue applied to telephone communications [LT-67-19] 01 p0028 N68-10214 Sampling and probability theory for estimating number of system failures in telephone networks [MTR-575] 16 p2618 N68-27008

TELEPHOTOMETERS U TELEPHOTOMETRY

TELEPHOTOMETRY

acecraft in

restrial radiatio [JPRS-44029]

faling chancis 19 p3239 N68-31417

19 p3241 N68-31614

TELEPRINTERS roduction engineering measures for high speed printer for airborne communications and data

solar, cosmic, and ter-comos 149 flight 05 p0743 N68-14785

riques evaluated

[P3C-06227-2-2] 13 p1994 N68-23320 NT ASTRONOMICAL TELESCOPES
NT HELIOMETERS
NT KILOMETER WAVE ORBITING TELESCOPE NT MANNED ORBITAL TELESCOPES
NT PARTICLE TELESCOPES
NT RADIO TELESCOPES
NT REFLECTING TELESCOPES
NT SPECTROSCOPIC TELESCOPES
NT STRATUSCOPE TELESCOPES
NT X RAY TELESCOPES Balloon-borne equipment consisting of gamma ray telescope with array of particle detectors [NASA-CR-90083] 01 p0063 N68-10348 Subsystem conceptual design for manned optical chnology extension system - Apollo spacecraft NASA-CR-90529] 02 p0241 N68-11863 technology extension [NASA-CR-90529] Systems design of transistorized azimuth super-06 p0903 N68-15070 ectroheliographs to photograph ity of solar magnetic fields Telescopes and : distribution and inte [ATR-68/8102/-4] d spectre 12 p1872 N68-22125 Calculation of occultation of satellite telescope by spherical celestial body [ESRO-SN-73/ESDAC/] 13 p2153 N68-24176 Selection consideration ment system for Apollo to [NASA-CR-61818] for prelaunch test equip-14 p2237 N68-25451 and specifications for Revised design guidelines Apollo telescope mount control [NASA-CR-6[814] and display console 15 p2564 N68-26022 Gravity gradient momentum dumping analysis, and onceptual design for Apollo telescope mount simula-[NASA-CR-61815] 15 p2562 N68-26740 toring during solar nd support sys [NASA-CR-61817] 15 p2562 N68-26812 of moon by photoconduccoustic receiver 16 p2754 N68-27058 [FTD-MT-67-25] Applicability of she ad Koste ers interferom nent in optical telescopes 17 p2884 N68-28923 [NASA-CR-95486] Spectrophotometry of lunar topography based on bservations by quartz spectrometer and horizontal [NASA-TM-X-61023] 18 p3161 N68-29672 Nike-Ajax system and Real-time Automatic Digital Optical Tracker /RADOT/ multimode telescope for spacecraft tracking and communication 19 p3243 N68-31761 Celestial attitude n g instrument using star mapping technique (NASA-TN-D-4742) 19 p3308 N68-31938 marine sextants [NASA-TN-D-4781] 20 p3527 N68-33006 Numerical analysis of planar motion of dynamic model representing kilometer wave orbiting telescope ity of con to investigate feasibili [NASA-CR-96630] 21 p3764 N68-33641 Rocket-borne silicon detector telescope for Van [ISAS-426, V. 33, NO. 8] 22 p3931 N68-35625 Computer program LASIM for spacecraft tracking and control in laser optical communication systems [NASA-CR-61976] 23 p4071 N68-36227 ectrophotometric equip-experiment CEPHEE 23 p4177 N68-37135 TELETYPEWRITER SYSTEMS Reliability of network and circulanned Flight Communications F tific Satellite Communic [NASA-TM-X-60571] 01 p0031 N68-10743 NASA on-line autor worldwide voice, data, (NASA-TM-X-63056) ching system for data switt od teletype communications 04 p0483 N68-13425

Data link with independent ication between teletype terr

nt channel duplex commu erminals and central com

05 p0633 N68-14074

INASA CE 050511

(PTD-MT-46-44)

(NRL-MR-1840)

NT TELEPRINTERS

Deep Space Network /DSN/ to (NASA-CR-94920)

stor for multiplex

13 p2026 N68-23434

15 p2421 N68-25744

Time shared digital compute provides output in switch form [MAC-TR-38] 06 p0807 N68-15372 Solid state keybo airborne communica (IER-3) er teletypewriter for th processing systems 11 p1671 N68-21635 Production engine deprinter for airbo sures for high speed [P3C-06227-2-2] 13 p1994 N68-23320 Time sharing characteristics computer system with each inpulinked to buffer section in main [FTD-MT-24-232-67] cs of multiterminal digital nput-output teletypewriter 18 p3039 N68-29690 TELEVISION CAMERAS 01 p0064 N68-10652 Television and infrared data from meteorological satellite system, and resu [JPRS-43715] ta from Cosmos satellites 04 p0576 N68-13356 Intensity and color crain pictures, and digital [NASA-CR-92682] n of Mariner 4 televi-07 p1077 N68-16106 Mechanical design and prediction of lunar TV ca [NASA-CR-65987] ging, and performance or Apollo missions 09 p1341 N68-18544 Ruggidized Marin sistance to high impar [NASA-CR-93676] on camera with red sterilization 09 p1345 N68-19320 mic exploration 11 p1663 N68-21545 Phototelevision syste [FTD-MT-24-137-67] ing from landing site of h [JPRS-45374] 13 p2070 N68-24169 d to earth from lunar surface by Surveyor 3 [NASA-CR-95875] 18 p3165 N68-30166 Electronic design of ca ra system for DODGE (TG-9631 18 p3079 N68-30820 era tube with near 19 p3253 N68-31539 ance charact aceborne use 19 p3253 N68-31540 rational limitations and technological problems illite borne infrared television camera for earth 20 p3473 N68-33398 TELEVISION EQUIPMENT
NT IMAGE DISSECTOR TUBES Research facility and television equipment for mea-ring wind velocity, wind direction, and atmospheric (DP-MS-67-68) 02 p0195 N68-11507 Solid state broadb and video amplifier for television AMRL-TR-67-61] 03 p0319 N68-11941 Optimization of de precasting power con slevision acts c electric power systems, tion, and increased use of 06 p0771 N68-15990 output power amplifier, power source, attitude con-or television broadcast satelnamitting antenna, r conditioning, prime and station keeping for [NASA-TM-X-52385] 07 p0967 N68-17042 ata used for reporting flight of Surveyor 3 spacecraft of TV equipment and soil Real time and postflight erformance characterist nd its subsystems, inclu mechanics/surface s [NASA-CR-93492] 09 p1430 N68-18658 Flight performance lysis of Surveyor 5 ing device data [NASA-CR-93488] 09 p1430 N68-18660 Surveyor 6 spacecraft flight performance chars-ristics, including data on television equipment, alph (NASA-CR-93495) red flight translation 09 p1431 N68-18661 Variable corder/rep test data [NASA-CR-93526] 09 p1343 N68-19047

Reduced longitudinal beam energy spread in elec-ron beams for television pickup tube electron gum and lesign and construction of off axis electron gum 11 p1675 Ne8-21727 23 p4062 N68-36531 Holography as optical recording and representation aethod with potential use in cinematography and (RAE-LIB-TRANS-1316) Summary of develop d network in U.S.S.R. 24 p4303 N68-38023 16 p2621 N68-27293 Rader display or t for air traffic control Television equipment television transmission of (JPRS-45754) rd Soviet outeilites, and exploration feats 17 p2883 N68-28800 (FAA-RD-48-28) 24 p4227 N68-38145 d errors in cireter, using delay line a and color signal conensistors 18 p3052 N68-30133 ps on thin film fabrica-trence gratings, and (FTD-HT-23-946-67) Optics conference protion, diffraction and spaceborne television eq. [REPT.-00015/PR/ED] 01 ±0037 N68-10413 edge of communication telling for Brazil, Judia 19 p3316 N68-31528 Design, video data characteristics, error control, and compression algorithms for Mars television mapping 03 p0321 N68-12078 nests in lunar surf NASA-SP-163) [NASA-CR-96095] 22 p3838 N68-35745 TELEVISION RECEIVERS 08 p1244 N68-17844 Circuitry and reliability frequency amplifier for telev [FTD-HT-23-945-67] 18 p3044 N68-29730 08 p1245 N68-17847 **TELEVISION RECEPTION** inside of spilar of pools N64-10653 08 p1240 N68-17850 Passive relaying, ground stattion, and feedback transforme cations systems [JPRS-44023] Human depth po-stereo, and nonsteres (NASA-CR-61630) of te levision displays in ions for television recep-rs for satellite communi-09 p1289 N68-19145 06 p0801 N68-15976 prototype direct current levision transmitter 12 p1830 N68-22732 Design and perfor convertor for space [NASA-CR-61737] on reception in d Service assesses exploration from Television equipm levision transmissi PRS-45754) 06 p0802 N68-15978 methods of deployment is of lunar operation, and eyor lunar surface sampler 17 p2883 1 18 p3035 N68-29685 [NASA-CR-93205] 08 p1244 N68-17411 ELEVISION SYSTEMS

NT CLOSED CIBCUIT TELEVISION

NT COLOR TELEVISION

NT EDUCATIONAL TELEVISION

NT RANGER BLOCK 3 TELEVISION

NT SATELLITE TELEVISION

NT SPACECRAFT TELEVISION

NT STEREOTELEVISION Just for a 18 p3077 N68-30553 for video signals 18 p3038 N68-30 Time delay cockpit television for pilot warni and television quality 06 p1116 N68-18228 Television system for cloud dis (PB-176951) 10 p1552 N68-20341 20 p3438 N64-33179 n systems for transmitting time from deep space 13 p2025 N68-23195 ical analysis of ph 20 p3482 N68-33412 History of developm broadcasting in U.S.S.R. [FTD-MT-63-496] of radio and television FTD-MT-24-222-67) 22 p3886 N68-35445 16 p2620 N68-27287 ics of home on-Selected television p face transmitted by Sur [NASA-CR-97213] of television equipme Summary of develop and network in U.S.S.R. 23 p4169 N68-36661 16 p2621 N68-27293 Topography of Tycho yor 7 television pictures ne site from Sur-U.S.S.R. 24 p4345 N68-38248 16 p2621 N68-27294 LEGEN THEORY
GYRATORS
NETWORK ANALYSIS
NETWORK SYNTHESE hannel television High frequency conziel, to sumunication systems 16 p2622 N68-27305 ra system for DODGE TELLURIC CURRENT MECROPULSATIONS
U MICROPULSATIONS 18 p3079 N68-30820 TG-9631 TELLURIC CURRENTS and satellite surveillance systems, radar acasoning seers, infrared imaging, as Cosmic noise, telluric tivity for Alaska, April-Ju [NASA-CR-89792] 67 - Tables and charts 01 p0054 N68-10032 AGARD-CP-291 20 p3481 N68-33392 AFCRL-47-0540) television systems for rveillance 20 p3483 N68-33415 03 p0321 N68-12104 (RU-67001) Performance predictive optical sensors light level television sy [0.3685.20.03A] mique for evaluating emutical model of low 04 p0496 H68-12962 en for correcting digitizer or-21 p3688 N64-33839 metry and television a of observed land-RU-67002] Telluric current November 1962 th IUAG-R-202] tions ist surroral some -her 1967 06 p0632 N68-15228 22 p3876 N68-35378 n of wide single | NAVTRADEVCEN-695-2, V. 1] U.S.S.R.

(NAVTRADEVCEN-695-2, V. 2)

06 p0636 N68-15397

etry, gravimetry, and telluric 08 pl168 N68-17603 Earth field-line dependensce of rapid geomagnetic onjugate locations 08 p1171 N68-17968

Theories and forms of geo aphasizing activities at conite points 08 p1171 N68-17969

Conference on g and telluric currents 18 p3069 N68-30489

TELLURIC FIELDS
U ELECTRIC FIELDS TELLURIC LINES

ns recorded at Pacific multaneity at conjugate

08 p1171 N68-17973

d abstracts of scientific papers on tography, addiscal light, and other

18 p3167 N68-30542

TELLURIDES

NT CADMIUM TELLURIDES

NT LEAD TELLURIDES NT TIN TELLURIDES NT ZINC TELLURIDES

Fermi surface of anti-Haas-Van Alphen effect [UUIP-532] telluride studied by De 01 p0121 N68-10087

Gallium telluride vapor dep ited thin film electrical FTD-HT-23-634-67] 07 p1065 N68-16278

PbTe-PbSe and PbTe-GeTe materials for thermoelectric power generators [NYO-3886-1] 16 n2683 N68-28090

Hamiltonian function and energy levels to analyze spectra of hydrogen telluride 24 p4214 N68-37681

TELLURIUM

Complementary thin film tran lurium for p-type and cadmin mistor circuits using tel-ium selenide for n-type [ECOM-02432-F] 02 p0187 N68-11113

Frequency sweep tec s for Q measurement of (BNL-11702) 02 p0240 N68-11616

Electron diffractions of low-angle box [SGAE-M-10/1967] e to determine disloca-tellurium crystals 05 p0728 N68-14560

ic and physical proper-m, polonium, and their Data tables on there es of sulfur, selenium nsive literature survey 06 p0791 N68-15734 (PB-175628)

Optical properties lurium and amorpho [ORNL-TM-2023] orated films of tel-09 p1408 N68-18941 s on taxicity of tellurium

Chemical and biological [NRC-TT-1283] 12 p1823 N68-22476 Donor properties of tells rium in transitional metal

23 p4004 N68-36086

TELLURIUM COMPOUNDS

NT CADMIUM TELLURIDES

NT LEAD TELLURIDES

NT TELLURIDES

TIN TELLURIDES ZINC TELLURIDES

ligh temperature mea aporized tellurium di of vaporized tellurium di calcium ferrite and clay le [USNRDL-TR-67-134] 06 p0840 N68-15737

TELLURIUM INOTOPES

Delayed protons of tellurium dium 102/carbon-12,3n/reacti m III produced by pal-[JINR-P6-3494] 05 p0716 N68-14688 summing for acceleration measure-ed nuclear states of tellucium Coincidence a ments on excited [INP-569/PL] of tellurium 07 p1039 N68-16168

es in proton elastic scattering 09 p1395 N68-19182

neutic electric quadrupole moments of excited nuclear states in cadmium 114 and 116 and tellurium 126 and 128 09 p1395 N68-19193

Time amp de converter mi easurements of half life in tellurium 125 [REPT.-865/1A/PL] 10 p1571 N68-20448 Six gap beta ray spectrometer applied to beta and amma ray spectroscopic study of strontium 83 and tel-

20 p3478 N68-32528

TEMPER IMETALLURGY

Tempering treatment effects on mechanical proper-ties of steels, and stress relief test data [EURAEC-1889] 01 p0078 N68-10858

TEMPERATE REGIONS

Latitude variation of cosmic rays used to determine onnection between intrusion of cosmic rays and at-sospheric disturbances in temperate and subtropical [M-7371] 20 p3526 N68-33589

TEMPERATURE NT AMBIENT

IENT TEMPERATURE AMBIENT TEMPERATURE
ATMOSPHERIC TEMPERATURE
COMBUSTION TEMPERATURE
CUTTICAL TEMPERATURE
CUTTICAL TEMPERATURE
FLAME TEMPERATURE
FLASH POINT
HIGH TEMPERATURE
FLONTION TEMPERATURE
ION TEMPERATURE
ION OF TEM

NT NT NT NT

ION TEMPERATURE
IONOSPHERIC TEMPERATURE
LOW TEMPERATURE
LUNAR TEMPERATURE
OPERATING TEMPERATURE
PLANETARY TEMPERATURE
PLANETARY TEMPERATURE
PLANETARY TEMPERATURE
PLANETARY TEMPERATURE
PLANETARY TEMPERATURE

PLASMA IEMPERATURE
SKIN TEMPERATURE (BIOLOGY)
SKIN TEMPERATURE (NON-BIOLOGICAL)
STAGNATION TEMPERATURE
SURFACE TEMPERATURE
WALL TEMPERATURE

atial energy distribution of thermal neutrons in emperature graphite-water system 04 p0536 N68-12841

Effect of high elastic uniaxial strain on resistivity and uperconducting transition temperature of tin whiskers 10 p1576 N68-19782

Absorption lines and effective temperatures of alpha Persei and beta Aquarii, supergiant stars 10 p1592 N68-20009

Temperature and porosity dependence of modulus of rigidity and Poisson ratio of beryllia [AAEC/TM-402] 14 p2277 N68-24715 Bibliography of magnetic materials and tabulation of

magnetic transition [ORNL-RMIC-7] 15 p2533 N68-25728 Correlation of glass transition temperatures with chemical structures of polychloroacrylates, polymethacrylates, and other polyacrylates [RAE-TR-67298] Is p3018 N68-29634

Daily, monthly, and yearly climatological data from 99 stations in Finland in 1957

18 p3109 N68-30251 Variable viscosity of lubricating oil considered in calculating bearing temperatures [NEL-TT-1991]

22 p3883 N68-35458 nod to study statistical agical fields of temperaip between meteorolo ecoctential at 500 mb ture and geop [M-7376] 22 p3906 N68-35512

temperatures of thin 23 p4155 N68-37019 [BNL-11901]

TEMPERATURE COMPENSATION

Temperature performance is 09 p1313 N68-18333 New method for ten lezoresistive transducers erature compensation of PA-TR-3637) 11 p1701 N68-21620

Design, operation, and temperature compensation of toroid for precision pulse generator [UCRL-17639] 12 p1874 N68-22413

of bimetallic helical Temperature compensations springs by thermometal action 14 p2360 N68-25420

method for differentia supply (REPT.-899/III/E) 19 p3254 N68-32167

TEMPERATURE CONTROL

Annotated bibliography on ttachment methods for ntrol materials 01 p0069 N68-10418 advanced spacecraft (NASA-CR-73150) Attachment method material system consi and multiple layer insu (NASA-CR-73149)

01 p0144 N68-10641 ical model for ort ting satellite structure

03 p0426 N68-12276

engaten-thenium alloy thermocouples for nuclear reactor temperature control [CEA-3182]

Spectral reflectance ements of thermal control coatings after ult [NASA-CR-91351] 04 p0593 N68-12858

Temperature stabilized ble multivibrator erature dependence 04 p0485 N68-12962 and equations ((NELC-1506)

Oscillator cavity and laser tube design, and tempera-ture and automatic frequency control system for stabil-ized carbon dioxide gas laser [NASA-CR-91332] 04 p0517 N68-12973

Thermal control of large associated heat balance and (ESRO-TM/P/-94) ronomical satellite and perature distribution 04 p0594 N68-12975

Temperature cont trol system for stabili [NASA-CR-91353] tomatic frequency con-dioxide laser 04 p0519 N68-13490

Design and calibration of high pressure, high tem-erature equipment to determine effect of preirradia-on pressure-temperature treatment on materials ment on materials 05 p0666 N68-13969 tion pressure-t [BNWL-465] ng gas heater consisting of

High temperature flowing four stages for heating gases [NASA-TM-X-1506] 05 p0641 N68-14115

Techniques for passive control of temperature and humidity in space suits for extravehicular activity [NASA-CR-73168] 05 p0613 N68-14195 al control characteristics of

Heat transfer, and thern iffuse bladed louver system diffuse bladed louver system for spacecraft [NASA-CR-92591] 06 p0928 N68-16049 Bibliography on high temperature chemistry and physics of materials in condensed state [NP-17141] 07 p1035 N68-16462

Thermal flux profiles for controlled temperature pressure irradiation BNWL-SA-1377] n capsules 08 p1200 N68-17236

Specifications and perform erformance evaluation of feed-trol system for cesium plasma facility /Q machine (GGC/EE/67-11) 08 p1157 N68-17835

System dynamics and control ater moderated nuclear rocket ol analysis of tungsten [NASA-TM-X-1426] 08 p1207 N68-18252

rptivity standard used to temperature control sur-[NASA-CR-93489] 09 p1341 N68-18700

Development of nurstem using thermioni iclear thermionic space power ic diodes, and heat pipe flow for [NASA-TN-D-4299] 09 p1378 N68-19146

Engineering analysis of sh and plume heating in spacecraft configuration [NASA-CR-93525] roud, temperature control, recommended Voyager 09 p1437 N68-19161

Approximate average m d coolant flow require oan metal temperatures ets for turbine airfoils cooled by compressor [NASA-TN-D-4491] 09 p1450 N68-19187

Thermoregulation m n of human body during [NASA-TT-F-11635] 10 p1462 N68-19749

Experimental design ev n of temperature con-[NASA-CR-93920] 11 p1787 N68-20831

Design and perform control assembly conti [NASA-CR-93921] Mariner 5 temperature 11 p1788 N68-20989

ol systems for minimizsatellites 11 p1697 N68-21152 ing temperature variation (BMWF-FB-W-67-32) items for temperature

Prototype air distrib controlled protective ck [TR-68-21-CM] 11 p1640 N68-21345

Researches dealing with di sure fast transients, conductivi trol liquids, and hybrid comput (RISO-M-626) igital equipment to mea-rity and temperature concalculations 11 p1677 N68-2140s

Heat balance equations for c ing patterns for spacecraft temp [NASA-CR-1041] optimizing optical coat-perature control system 12 p1894 N68-22391 Thermistor temperature biological sample refrigerate [Y-1602] re control circuit for space

12 p1877 N68-22755 Passive thermal control of rigid and flexible extravehicular space en [AMRL-TR-67-128] 13 p2005 N68-23412

ol of electroplating tank by heat Temperature contr WVT-6806] 13 p2171 N68-23907

A-1266

OAO NASA-C Thermo control in [NASA-T Flux flo tors under [ORNL-T

Pressur heat sink o sure suit is [NCL-67-Temper sion, and s (LRBA-2) Attache

NASA-C NASA F Diffuse NASA-C

Gas chr sis of isoth [USNRDI

Weld h COA-MA Cryosta CEA-R-3 Wall to (LRBA-E Solar ce RAE-TR Systems grated o

NASA-C NASA-C TEMPERAT

D6-5837

Temper

Three-d NASA-C Analysis from Rour

Calculaton within (SAAB-T) rods are de [EUR-355

Vapor pass (FTD-HT) Creep p

mal stress stress distr [NASA-CI

radiation effects on thermal control coatings of OAO [NASA-CR-94684] 14 p2369 N68-24465 Thermophysical proposition materials [NASA-TM-X-60406] erties of spacecraft thermal 15 p2575 N68-26303

Flux flow and stability perforton under controlled heat trans [ORNL-TM-2162] nce of supercon 15 p2543 N68-26674

Pressure regulated thermal conductivity layer and eat aink conductive cooling unit for man wearing pres-16 p2602 N68-27046

de control, data transmis-ice for artificial satellites 17 p2975 N68-28548

Attachment methods for ther ystem comprised of optical so layer insulation to minimize ermal control composite olar reflectors and mul-beating from incident (NASA-CR-732191 17 p2890 N68-28689

Astronaut life support requirements of oxygen, food, water, waste disposal, temperature control, and at-mosphere control for survival in manned spacecraft en-[NASA FACTS, V. 3, NO. 5]

17 n2830 N68-28968 Diffuse bladed up e louver system for spacecraft temperature control [NASA-CR-95870] 18 p3170 N68-30149

Gas chromatograph and pyrolysis chamber for analysis of isothermally degraded polymers
[USNRDL-TR-68-41] 18 p3027 N68-30417

Weld heat affected zone structure and mechanical properties of two carbon Mn-Cr-Mo-V steels [COA-MAT-3] 18 p3094 N68-30576 Cryostats for regulating low temperature environ-

[CEA-R-3463] 19 p3276 N68-31245 Wall temperature control of inertial navigation

[LRBA-E-430-01/LI] 19 p3384 N68-31358 Solar cells and heater system for improving thermal performance of spacecraft [RAE-TR-67277] 19 p3204 N68-31381

Systems analysis of four types of fluidic active in-grated circuits for automatic temperature control

(D6-58372TN) 20 p3402 N68-32595

Temperature control design, instrumentation, and performance characteristics of Mariner 5 spacscraft [NASA-CR-96708] 21 p3777 N68-34070 Thermal control subsystem test of San Marco 2 satel-

21 p3780 N68-34415

Design and environmental testing of thermal condi-tioning unit for liquid hydrogen propellant tank [NASA-CR-72365] 24 p4337 N68-38293 TEMPERATURE DISTRIBUTION

r determining tempera-nts in upper atmosphere 01 p0054 N68-10030 Three-dimensional model for de tures and densities of constituents is [NASA-CR-89976] 01

Relaxation effects in nozzie flow of hot combustion sizes measured by shock tube techniques 01 p0148 N68-10117 Analysis of low level wind and temperature data from Round Hill, South Dartmouth, Massachusetts [RCS-OSD-1366] 01 p0087 N68-10245

Calculation of nonstationary temperature distribu-on within ellipse with given heat flux as boundary com-[SAAB-TN-62] 01 p0152 N68-10662

Temperature and thermal stress distribution due to thermal neutron flux peaking near end plugs of fuel rods are determined for smooth and finned catanings [EUR-357.E] 01 p0094 NoS-10784

Temperature distribution of turbine rotor cooled by vapor passing through circular channels in blade shafts [FTD-HT-66-743] 02 p0282 N68-11419

Creep properties in complex stressed state at varia-02 p0278 N68-11676

Literature survey on joint thermal conductance etween boiled plates and experimental work on nor nal stress distribution under boltheads and interface INASA-CR-903491

92 p0279 N68-11776 World-wide measurements evaluated to determine offect of urban growth on atmospheric temperature 03 p0363 N68-12159

Temperature and cross sents of electric arc onli lectrodes in magnetic field tional shape measure-moving along parallel electrodes in magnetic (NASA-TT-F-11445) 04 p0552 N68-12855

Thermal control of in associated heat balance of [ESRO-TM/P/-94] strenomical satellite and reperature distribution 04 p0594 N68-12975

[COA-NOTE-MAT-13] 04 p0589 N68-13318

04 p0397 N68-13764

04 p0541 N68-13822 Heat and mass exchange in pr ized accelerated

[DGRR/WGLR PAPER-66-075] 05 p0753 N68-14062 ibution, and salini-

05 p0650 N68-14083 for nongray temperature Approximate expressivities of stellar a

05 p0739 N68-14917 Elektron-2 measurements of upper limits of ion temperatures between 7000 and 30,000 km.
[NASA-CR-92535] 06 p0905 N68-15174
Temperature field calculation for effective cooling of

Temperature field o blades in gas turbines (NASA-TT-F-11183) 06 p0927 N68-15795

Thermal fields and he or variable condition midirectional beat flow t fluxes - graphical methods and linear thermal and 07 p1095 N68-16407

red on top surface ning effective ther prous tungsten is indrical specimens for determine conductivity of solid and p (NASA-CR-54420)

07 p1095 N68-16628 Later power versus discharger transitions with temp age current for three main persture and pressure as NRL-65361

07 p1006 N68-17082 eat conductivity effects distribution 07 p0993 N68-17139

on magnetospheric temp [NASA-TM-X-63098] athematical model for stationary temperature dis-stion in thermal self-ignition inside vessel 08 p1256 N68-17722

ed gas flow of in-68 p1257 N68-17724

08 p1242 N68-18087 design for measuring vertical tempera-in in vicinity of 4.3 micros carbon diox-

08 p1198 N68-18109 or determining effects of Three dimensional heat generation in pla [NASA-TN-D-4326] 06 p1260 N68-18122

black ball as calibrat-Error analysis technique ing device in space chambe (ESRQ-TM-102/ESTEC/)

09 p1448 N68-18465 internal radiative hast distribution in spherical er effects on te 09 p1448 N68-18508 [AEDC-TR-67-254]

Temperature distrit ree layered plates 09 p1442 N68-18687 Approximate average mi-and coolant flow requires cooled by compressor exit ld [NASA-TN-D-4491]

09 p1450 N68-19187 FORTRAN computer program for calculating time ependent temperature distribution over planar thin lates with arbitrary distribution of conductive, con-critis, and radioactive data

ective, and radioact NASA-CR-66579) 09 p1345 N66-19338

11 n1800 N48-20121 11 p1702 N68-20605

11 p1682 N68-20731 Preheated flow (DLR-FB-48-02) 11 p1003 N66-21199

partic field distribution drical tube 12 p1915 N68-22127 in electrical at [ARC-29426]

oxygen and atomic me some for fuel-rich

Space dist fuel element [UJV-1876] 13 p2106 N68-23288

13 p2020 N68-24069 14 p2288 N68-24450

tion in Indian C 14 p2248 N68-24957

Turbulent structure of velocity and temperature fields in abyssal layers of northwestern part of indian Ocean 14 p2248 N68-24958

Statistical correlation of ocean temperature in-homogeneities and associated instrumentation [JPRS-45681] 15 p2458 N68-25835

tion and surface heat Internal temperat

nt temperatures in reac-[LA-3833] 15 p2503 N66-26553

d location and shape of lying har of indiam an 16 p2792 H68-27219

radiative transfer in-ure and heat flux in r flat plate 16 p2795 N68-27663

ine for rods or sheets Fourier law 16 p2798 N68-28244

vith internal host liber [NASA-TT-F-11826]

ture and velocity fields, e flow and amplitude of coled above 17 p2965 N68-28545

alance and temperature distribution from melting of ingots (BM-30-7151) 17 p2893 N66-28893

RT/FI/68/12) 17 p2949 N68-28979

n in fully innies 17 p2951 N68-29402 169/7)

r problem of steady creep of tubes, subjected to internal

18 p3172 N68-29580 of temperature distribu-to woodymius laser pulsed

18 p3091 N68-30253

0 p3134

20 p3519 N48-32482

20 n3470 N68-32468

SUB

galli NA

T

D

(NA

cal s (NA

To

E

G

INA [NA

Te

CA

X

deg (

He deve

Th

Te on h

St

FIL

The chlore ture (

Cn

Rifi nitrid (UCI

Th

(CO

d from tempera-Heat transfer coeff ing metal plates 29 p3609 N68-32784 ture distributions on heat-yield [ERDL-T-1925-68] FORTRAN program for calculating particle spectra reduced in high energy proton-proton collisions by (NASA-CR-96317) 20 p3551 N68-33548 ranium dioxide reactor description of heat al fuel elements Temperature distribution in uras el elements - mathematical d 21 p3724 N68-34108 (AE-318) Flow and temp field analysis of a plane disk slinger seal [NASA-CR-83016] 21 p3697 N68-34280 rds for determining axisymmet-bution and thermal stresses in and spherically-biunted shells 22 p3971 N68-35205 mAL-68-21) 22 p3904 N68-35288 [M-7384] Computer program and implicit difference method for calculating transient microscopic temperature distribution in matrix fuel elements [JUL-526-RE] 22 p3911 N68-35740 22 p3911 N68-35740 Computer program for transient and steady state temperature distributions in multidimensional systems [UCRL-14754, REV. 1] 22 p3981 N68-35905 ematical model of liquid metal fuel reactor to ale temperature distribution on seutron [NASA-TN-D-4840] 23 p4099 N68-36055 Vertical flux plate flow station boundary layers dies for laminar convec-23 p4187 N68-36590 Formulas for bending of circular plates subjected to complex symmetrical loading and temperatures (TID-23984) 23 p4182 N68-36833 Reduction of infrared scan data on Martian surface [NASA-CR-97272] 23 p4173 N66-37273 Evolution of 30 solar s s star of population 1 24 p4342 N68-38063 Inerative approxima current, and energy dist [FTD-MT-24-332-67] tion for temperature, in plasma discharge tion in plasma discharge 24 p4326 N68-38333 TEMPERATURE EFFECTS Yield point and strain-h a coefficient of high HTT81-578-P27-221 01 p0074 N68-10140 of cross-linked amorphous 01 p0081 N68-10494 COA-NOTE-MAT-II) Electronic work func-iobium, and rhenium rel of tungsten, tantalum, ry metals containing dis-[FTD-HT-66-766] 02 p0259 N68-11467 of effects of high altitude supersonic m alloy lust salt cracking process 02 p0222 N68-13522 Simulated study of effe air flow on titanium Structure depends nce of diamagnetism in pyrolytic (NASA-CR-90546) 02 p0225 N68-11783 using differential thermal analysis [NUS-R-306] m sulfides determined 03 p0311 N68-12143 effects on vertical takeoff 03 p0300 N68-12278 on and temperature de-ermetallic cathodes 03 p0406 N68-12293 reface cryst APCRL-67-05301 Elevated tempera in holium afterglow [ECO64-2850] e effects on ambigular diffusion 04 p0552 N68-12887 d bird impact resistance rindshield of electric (LR-489) 04 p0439 N68-12897 rain test to determine effect on dynamic microstrain of

04 p0520 N68-12961

04 p0586 N68-13043

ble multivibrator 04 p0485 N68-12962

Particle size int minimum explosion t (AD-661673) Temperature effi phase transformatio [15-T-192] Cryogenic and amities of hot-pressed blo [WANL-TME-1619] Performance of az siler thermal, or ele magnetite pelle [BM-RI-7069] Effects of composit minum copper, and [NASA-CR-61423] Field effect trans ture and frequency (BNL-11783) (NASA-TN-D-4340) Mechanisms causing h tions in gas-thermoscousti [SC-CR-67-2759] Temperature effects Absolute pressure switch de imperature and vibration tes temperature and vib [NASA-CR-61479] Distribution of in sicrococci in human s lation at elevated cal (NASA-CR-92557) (CEA-R-3218) in hot gas flow (UCRL-17438) [MLM-1402] RAE-LIB-TRANS-1256) [CEA-R-3181] Effect of temperature, stress on elastic, plastic, creep, hot strength of unircadiated oxide of [WAPD-TM-587] Thermal testing of two stage radiant cooler for day-night high resolution infrared radiometer [NASA-CR-93291] 08 pl 177 N68-17435

Structural changes in the films under electron irradiat [NASA-TT-F-10466] Temperature and pressure derivatives of isotropic ound velocities and adiabatic bulk moduli of alpha-08 p1223 N68-17613 [NASA-CR-91303] 04 p0557 N68-13280 e of radioluminescence and ali-halide crystals during exdecomposition and of lead azides 04 p0597 N68-13642 08 p1206 N68-17989 on electrical resistivity, and Temperature dependence or itude in CsI-Tl and KI-Tl crys 04 p0562 N68-13754 08 p1227 N68-17997 dependencies of time of m yield in intracenter lu-lioride- lead phosphor le compression proper-04 p0523 N68-13893 ic plasma engine models etic acceleration 05 p0722 N68-13929 08 p1227 N68-18000 Temperature effects on in nitrogen stream, and un [NASA-TT-F-11435] 08 p1144 N68-18071 metallization, and other duction hardening of unfired 05 p0618 N68-14111 08 p1189 N68-18212 thermal treatment on alu-mainc magnesium alloys 05 p0673 N68-14135 ressure and temperature effects on chemical reac-n and kinetics, phase transitions, X ray diffraction, and electrical propert [AROD-2759-19-C] 09 p1406 N68-18364 Heat, and light induce containing films, and so [NRA-861] 05 p0638 N68-14593 ed darkening of copper bromide Effects of Freon, water flow temperatures, and pres-09 p1292 N68-18389 05 p0648 N68-14641 Temperature rise and stree ses due to internal heating nat driven pressure oscilla-generator design 05 p0725 N68-14685 09 p1440 N68-18506 [AFIT-TR-68-1] d for elevated temperature and fatigue parameters of alloys [NASA-CR-61631] Temperature effect of cosmic ray neutron com-09 p1353 N68-18766 Heat treatment effects on beryllium structures for 06 p0902 N68-15061 [NASA-CR-61659] Random process method of determining temperature effects on diurnal variation of cosmic ray hard com-09 p1348 N68-18973 Compression temper ition and cool flan oichiometric proport nd pressure effects on ig-06 p0902 N68-15062 tion of temperature effect on measured counic ray intensity 06 p0902 N68-15063 09 p1450 N68-19175 minimization and optimal shapes for bodies of ion entering earth atmosphere at hyperbolic nical, and elec-[NASA-CR-73203] 09 p1451 N68-19241 trochemical properties of hydrogen oxygen fuel cells [BMWF-FB-W-67-04] 06 p0768 N68-15248 tch design and fabrication, and in test data of polymethyl methacry-10 p1541 N68-19610 of p0815 N68-15551 Oriented growth of organic compounds, and tem-perature effect on oriented precipitations of crystals [JPRS-44895] 10 p1481 N68-19634 genous staphylococci, and jects during life support simu-Creep, strength, and levated temperatures elasticity of concrete at 06 p0773 N68-15701 [C-1257] 10 p1543 N68-20196 oction problem solving 06 p0927 N68-15879 nity and temperature on Effects of variations in sa tuarine macroalgae n oxide with respect to 10 p1468 N68-20238 ice on temperature and oxygen pressure 3218] 07 p0954 N68-16314 Temperature and radiation effects on index of fraction and extinction coefficients of Apollo window EA-R-2210]
Elevated temperature drop hammer tests or canium base dilute binary alloys
67 p1008 N68-16331 (NASA-CR-1019) 10 p1600 N68-20467 Orbital paramagnetism in erature dependence of ele ductors, and temon operating charac-10 p1583 N68-20508 07 p0973 N68-16606 Electron temperature effect on excitation of electro-static ion cyclotron oscillations and convection effects ients of heptane droplets 11 p1758 N68-20650 07 p1098 N68-16886 temperature dependence terglow in nitric oxide shock [TR-1001/2240-20/-6, V. 2] Temperature effects on tracer level separations by ion exchange chromatography [REPT-840/8/C] 07 p0960 N68-17140 11 p1646 N68-20728 Annual report on reactor fuels and materials 07 p1033 N68-17145 11 p1647 N68-20882 Heat treatment methods for reducing cost alloy steel Temperature dependent phosphates [UCRL-17966] perties of dinucleoside 11 p1648 N68-20945 07 p1010 N68-17146 Bivariate frequency distr and temperature and off engths and allowable taken utions of pressure altitude its on required runway Freezing of energy transfer in organic mixed crystals [NRC-TT-1268] 07 p0960 N68-17149 II p1619 N68-21046 differential calorimeter for thermal effects during linear Temperature effects on all ectrolytic chromium surfac luminum alloy, nickel, and ce stability of astronomical 07 p1000 N68-17152 INASA-CR-940431 11 p1713 N68-21087 and material variables pressing, and fracture sclear fuels 08 p1201 N68-17241 Curing temperat of epoxide polymer [PA-TR-3624] on thermal degradation 11 p1720 N68-21490 of electrical conductivity Temperature and structure of liquid wat [TR-33] effects on molecular 08 p1222 N68-17385 11 pi656 N68-21565 Effects of temperature, pH, and electric charging on subcritical crack growth rate on high strength steels 12 p1845 N68-21851

[TR-0158/3250-10/-7]

E-47-2453]

waves in temperatu to subjected to in

[NELC-1506]

SUBJECT INDEX rgical, electrical, and optical properties of gallium phoephide crystals [NASA-CR-94308] 12 p1953 N68-22111 Temperature effect on infrared spectra of logenated methanes in carbon disulfide solutions 12 p1834 N68-22180 Temperature effect on synthesis of cerium chalcoge-12 p1834 N68-22208 erature and sali ons effects on development of frog eggs [NASA-TT-F-11676] 12 p1823 N68-22252 Data correlation on temperature tra resoure vessel steel with irradiation e step function damage model [WAPD-TM-471, ADD. 1] 12 p1904 N68-22328 Interfiber distance and ter cal sapect ratio in composites [NASA-TN-D-4548] re effects on criti-12 p1888 N68-22338 Temperature and air effects on X radiolysis of gase-ous chloroform and chloroform solutions [COO-1116-6] 12 p1835 N68-22367 Emittance as function of temperature for five ablative materials used as rocket engine liners [NASA-CR-62063] 12 p1983 N68-22415 ine liners 12 p1983 N68-22415 Graphical reprensentation of nonlinear heat transfer functions for constant area fin problem [NASA-TM-X-53710] 12 p1983 N68-22514 Window designs for mercury condensing tube and mercury boiler outlet tube [NASA-TM-X-1578] 12 p1856 N68-22737 Temperature depende amorphous ferromagnet [CALT-221-38] of magnetization of an 12 p1958 N68-23034 Electrical resistivities and transition temperatures of ure and cadmium-doped tin single crystals 13 p2131 N68-23176 oin-lattice relaxation time of nitrogen 14, and pres-and temperature dependence 13 p2013 N68-23520 X ray analysis of variation of lattice parameters of uminum, magnesium, and thorium oxides up to 2000 deg C [AERE-R-5674] 13 p2088 N68-23577

EX

ing Silo

and

189

um-

97

100

nie

171

m

112

89

06

ire

66 for

73

75

of lic

41

7-

14

38

of

57

16

8

g.

18

2

5

Heat and overripeness effects on frog egg genetic (NASA-TT-F-11684) 13 p2001 N68-23729 Thermodynamics of system potassium/mercury nalgam as function of temperature and amalgam [CU-2660-34] 13 p2170 N68-23812 lear magnetic resonance is of borane and boros

Variable temperature nucl study of complex compound trihalides with oxygen contain 13 p2019 N68-23915 TR-18] mperature history and fluid-solid interface effects sat conduction in certain liquids in liquids 13 p2172 N68-24031

Stationary and transient thermal analyses for gas tur-time rotor disks under themperature stress [FTD-HT-23-705-67] 13 p2164 N68-24305

Thermal effects on reson oscillations in earth magne [ISAS-422, V. 33, NO. 4] ant coupling hydromagnetic

14 p2321 N68-24435 Thermal conductivity measurements on potassium chloride single crystals after irradiation and temperature treatments [COO-1629-3] 14 p2329 N68-24676 14 p2329 N68-24676

Creep analysis as function of temperature for uranium using activation energy measurements [CEA-8-3187] 14 p2270 N68-24841

Velocity of ultrasound in lithium ammonia solution as function of temperature and concentration 14 p2299 N68-25038 Effects of thermal pr ent and alu

nitride on austenite grain (UCRL-TRANS-10228) 14 p2271 N68-25071 Measured temperature dependence of thermal conductivity for pitch-bonded graphite [NUS-R-517] 14 p2278 N68-23094

Thermal etching characteristics of copper nickel al-

14 p2272 N68-25109 Physical properties of labyrinthine fluids and semicircular canal response to angular and linear seculeration and thermal stimulation [NASA-CR-94779] 14 p2202 N68-25143

ure effects on structural materials Load and tempe and fatigue design for supersonic transport (NASA-TM-X-59628) 14 p2359 N68-25380 Radiation method for characteristics of silicon se [NASA-TM-X-60498] thod for improving temperature illicon semiconductor strain gages 498] 14 p2260 N63-25414

Mechanical strength of mixtures of magnesium oxide and calcium fluoride from room temperature to 1000 deg C 15 p2487 N68-25663

Nickel single crystal edge dislocation velocity as motion of stress 15 p2480 N68-25906

deformation tests and theory for nickel and c 80 A under tensile stress and at constant and 15 p2481 N68-25956

15 p2481 N68-25968

age effects observed in ls p2535 N68-25972

weakly ionized lead iodide systems 15 p2413 N68-26190

Q switched ruby laser is sotoconductivity in silver h ed luminescence and 15 p2478 N68-26324

Temperature effect, stress analysis, and aerodynamics of Von Karman radome
[TG-902] 15 p2570 N68-26353

Glass substrate temperature ef cient for sinc adsorption on glass (NDL-TR-106) e effect on sticking coeffi-15 p2510 N68-26549

Anomalities in water and as perature effects on membranes [NASA-CR-87776] rous systems, and tem-15 p2397 N68-26562 Electro-optical converter with photocathode for some radiation spectrum shift in X ray and ultraviole

(FTD-MT-24-86-67) 15 p2555 N68-26913 Heat treatment and nitrogen concentration effects on brittle-ductile transition temperature of chromium 15 p2487 N68-26949

Dynamics of moving bubbles in liquids for single and inary component systems 16 p2641 N68-27036

Test methods for combustion characteristics, gas subility, vapor pressure, and volatility of aircraft fuels and for property analyses on high temperature lubriand for pr

(FTD-MT-66-99) 16 p2747 N68-27850 Temperature effects on thermoexidizing stability of

16 p2670 N68-27862 al stability of lubricatture effect on them ing gre

16 p2670 N68-27863 Performance of high temperature lubricants at vari-us temperatures

16 p2670 N68-27864 Temperature dependence of quasi-claric scattering of cold neutrons from liquid argon [BNL-12372] 16 p2732 N68-28229

Metal plate thickness, applied stress, and temp ture on brittle fracture mechanics in Robertson test (EURAEC-1987) 16 p2789 N68-28

Predictions for magnetoresis pendence of dilute alloys of iron [NASA-TN-D-4626] tivity temperature dein copper 16 p2746 N68-28239

Effect of high temperature sedium environments echanical properties of caseddate ferritic astenitic alloys for liquid metal reactors - high oxyg d high carbon cold trap analyses and high carbon of es 16 p2686 N68-28288

l lattice parameters of hexaming X ray powder diffractometry 16 p2617 N68-28331

17 p2979 N68-28345

ratures 17 p2898 N68-28380 ne structure and properties of y resistance heating 17 p2898 N66-28384 QT 35 steel determined by re (COA-NOTE-MAT-5)

Design and construction of weld heat-affected some COA-ROTE-MAT-18) 17 p2890 Non-28385 Temperature dependent scattering in gold and p metentiometric analysis

17 p2953 N68-28435 Temperature dependence of helium ion mobilities in flum measured with double shutter drift tube 17 p2923 N66-28476

Hall and Seebock effect, electrical resistivity, and serveductric power of graphics as function of tempera-are and boron content 17 p2955 N68-28520

Thermal conductivity of coated suction hiel particle ages with filler gas as function of pressure and ten-JUL-SII-RXI 17 p2984 1468-28543

rice temperature mea-nin diagrams, and ex-7 p2503 N68-28544

out scattering couplingle in lead and become

17 p2926 N68-28530 etion damage and to on solar cell arrays

king faults in silver films 17 p2957 Nos-26798

17 p2869 N66-29005 cographic studies on U-Ce-2r ternary oni s, and carbides for solubility and crystal an operature dependence 1/8, 1871 EURFNR-387) 17 p2842 N68-29045

FTD-HT-23-429-671

Effect of temperature in the beam formace on folling partic [NDL-TM-41]

18 p3019 N68-29749

Temperature induced errors in caloric radiomete (ECOM-2933) 18 µ3074 N68-30

Crystal defects from simulation of long time [CERTS-NT-02-3] 18 p3152 N Temperature and pressure effects on thermoelect over and electrical resistivity of metal oxide senio

18 p3048 NGB-30636 fects on embrittlement of resource vessel stock during

Tramition temperature heat and non-heat treate fabrication and operation [EURAEC-1751] 18 poste 1968-3005 nic chanic con-

19 p3351 N68-31136 Viscosity of liquid at on, and oxygen as funct NASA-TT-F-11868) carbon mo de. 80 19 p3225 N68-31285

B-1769141 19 p3200 1660-31315 el for approximating symmetry liquid with condensed plans and

ISS-68/16) 19 p3265 1968-3146 sice defects caused in of germ

T. Norties) 19 p3357 N68-32177 Effect of plantic strain of magnetic properties of (RTS-4542)

Hydrogen boni Kerrs constant for [RTS-4225] 20 p3416 N68-3236!

20 p3418 M68-325 -

20 p3418 N68-3250

SUBJ

perut form (ESS

UI

Q

TEMP

and (E)

TEMP

ns of heat af-Metallurical study of possible mechanisms of heat af-fected zone hot cracking in 18-Ni maraging steel 20 p3497 N68-32575 e of hyperfine field in rare 20 p3569 N68-32876 Magnetostriction in dilute rare earth iron garnets 20 p3569 N68-32877 lastic moduli of gadolinium single sture range of 4 to 923 deg K 20 p3570 N68-32878 Measurement of ela crystals over temperate ties of pras Crystal field heat capaci inickel and prascodymium bie 20 p2570 N68-32880 Temperature effect on Press requesce aitions of yttrium in rare earth sequence 20 p3427 N68-32891 Temperature and preere effects on liquid oxygen (FTD-HT-67-180) 20 p3610 N68-32935 est-set temperatures and time al properties of poly/ethyl Effects of stretch and h on cryogenic mecha terephthalate/film [NASA-TN-D-4762] 20 p3511 N68-33034 Thorium dioxide and urar um dioxide sol-gel materi-[ORNL-TM-1809] 20 p3430 N68-33079 Scale formation in turboje temperature and low oxygen [FTD-HT-23-825-67] ojet engines from inadequate 20 p3580 N68-33472 Effects of forming techs uminum nitride precipitati que, ferrite content, and n on alloy steel ductility 20 p3506 N68-33567 Influence of heat and surface treatment on fatigue properties of steel 20 p3507 N68-33602 Thermal effect of composite propellant reactions 21 p3792 N68-33710 on in zirconium carbon [BARC-325] 21 p3703 N68-33981 s of low conductance in-isolation and application mary results on ial materials for the [NASA-CR-73248] 21 p3788 N68-34080 time on shear flex-Effect of tem ure strengths of polyimi [NASA-TM-X-61212] lber laminates 21 p3708 N68-34299 Kinetics and oxide (FTD-HT-67-265) 21 p3704 N68-34392 s at temperatures other tatistical method 21 p3704 N68-34449 [WAPD-TM-767] Relation between heat hygroscopicity and polyacrylonitrile [RAE-LIB-TRANS-1307] 21 p3709 N68-34632 Temperature effects on ten e ductility of copper al-22 p3888 N68-34959 alloy single crystals 22 p3888 N68-35089

Charts of thermodysing effects of ionization ture, and atmospheric [NASA-TN-D-4754] 22 p3857 N68-35117 try measurements on tem-seat of formation of silver-22 p3823 N68-35184 rature effects on light scat-cular structure of borosil-

22 p3894 N68-35267

22 p3891 N68-35429 D4-23294 stretching effects on TRANS-1535] 22 p3896 N68-35526 nge effects on F region electron in South Atlantic geomagnetic (CSIR-263) 22 p3870 N68-35555 for photoelastic defor-mer materials 22 p3974 N68-35609

ion entrainment rate 22 p3896 N68-35611

Effect of heat transfer as prosion and hydriding of ler and isothermal conditions or ng of Zircaloy-4 tubing in pres surited water system [WCAP-3269-36] 22 p3980 N68-35806

Temperature deper ure and partially satu surity single crystal in of resistivity of flux clo-nagnetization states in high 23 p4147 N68-36092

of atomic displacements in 23 p4148 N68-36129

Chemical diffusion coefficient of carbon in uranium ion and temperature 23 p4007 N68-36345 ent, and electrical con-

fuctivity of single crystal s 23 p4150 N68-36358

Electrical strain gage strips for residual stress mea-trements in core of induction hardened steel cylinders 23 p4075 N68-36389

Scintillation of liquid helium at various temperate 23 p4108 N68-36708

Effect of initial tem re on shock sensitivity of granular high explo [SC-CR-67-2805] 23 p4159 N68-36805

ctron attachment and thigh temperatures 23 p4123 N68-36889 Apparatus for measu electron swarm drift velo [ORNL-TM-1444]

Temperature effects on electrical conductivity of refractory metal oxides [FTD-MT-66-126] 23 p4155 N68-37085 Temperature de polarization in wat [JINR-P14-3832] ire depe ce of negative muon residual

23 p4132 N68-37178 tic properties of high tempera-on-zinc oxide-iron oxide-nickel

23 p4034 N68-37318 Heat transfer and other effects of electric field on arallel flow hydrocarbon diffusion flame in flat con-unition chamber

24 p4352 N68-37512 Thermal gradient effects on of thin walled stainless steel tub [Ai-AEC-12695] 24 p4348 N68-37908

of hydrogen and deuteri-24 p4217 N68-37984

ns for increasing strength pro-ys and chromium steels 24 p4269 N68-38093

lous behavior in ea ium of elastic con-(REPT.-68-30) 24 p4335 N68-38300 Preforging heating, forging echanical properties, and de temperature effects on formation during rolling

of forged metal (FTD-HT-67-491) 24 p4263 N68-38304 Ultraviolet radio and temperature effects on polymethyl m [MINTECH-T-5766] 24 p4273 N68-38352

Low level wind and tem craft operations at airports information for air-24 p4286 N68-38396

ric turbulence spectra 24 p4287 N68-38405

TEMPERATURE GRADIENTS

Heat transfer from wall to to pipe at large temperature gradie dent gas flow inside 02 p0287 N68-11723

sal gradient and control of (GEMP-516) 03 p0356 N68-12169

Thermistor chain for structure of upper layers [NEL-1395] ring sea temperature 03 p0340 N68-12486

Mathematical models ransients in reactor conta pressure-temperature at systems during loss 03 p0379 N68-12677 [BNWL-SA-844]

ermal expansion characteristics of column of um oxide fuel pellets under radial temperature GEAP-5284] 03 p0381 N68-12733

ments of small-angle ag by iron to deter-03 p0398 N68-12747 mental cyclic strain de [NASA-TN-D-4279] 05 p0697 N68-14986

Wind tunnel model low praused by temperature grad of measuring instrum [NPL-AERO-1241] 06 p0844 N68-15318

Forces acting on impurity of metal subjected to temperature gradient NASA-TT-F-11409] 06 p0894 N68-15537

and thermal structure of Radiative heat tran NASA-CR-92542] 06 p0911 N68-15662

Mathematical model for calculating shock wave refraction in isobar atmosphere with vertical tempera-

07 p0983 N68-16145 Thermal diffusivity of u n oxycarbides at 100 to 1500 deg C as function of oxygen concentration [BNWL-SA-1494] 07 p1096 N68-16740 ng of heat and humidity varia-

08 p1135 N68-17746 ts on electric field in-

stability in fluid with [NASA-CR-93335] on pressure gradient 08 p1257 N68-17895

08 p1220 N68-17953 NASA-CR-93333] Satellite end tempera and temperature gradie with respect to eclipse t ure after 5000 to 10,000 orbits its on entering orbit calculated 10 p1597 N68-20401

rements on uranium dioxide at high temper [WAPD-TRANS-82] 12 p1912 N68-22943

Heat pipe for minimizing tween transponders in o ng temperature differences pposite quadrants of GEOS-[NASA-CR-94585] 13 p2168 N68-23540

tron thermaliz n in graphite-water system at [AERE-TRANS-1085] 13 p2107 N68-23559

Suppression of tempresonant cavities by pr [NASA-TN-D-4556] se in lossy diodes inside liquid nitrogen 14 p2229 N68-24387 Nimbus satellite infrar atmospheric absorptio iometer measurements is and detection of tem-

perature and mointu [NASA-CR-94688] 14 p2283 N68-24432 rature, salinity, geopoten-North Atlantic Ocean 14 p2245 N68-24525 Tabulated data on temperatial, and acoustic velocity of N [CG-373-9]

Electrochemistry of glass refractory interfaces over wide temperature range and theory of refractory corro-14 p2210 N68-24543

Serrated yielding in alumi un alloys at different

15 p2482 N68-26054 Thermoelastic effect for peak stress measurement in metallic objects

15 p2568 N68-26162

perature variations due to sea er Texas gulf coast 18 p3109 N68-30053 REPT.-6 nongrey planetary at-

mospheres [NASA-CR-95947] 19 p3363 N68-31183 gadolinium electron spin d axial crystals 20 p3567 N68-32834

ets in wind tunnels for [DLR-FB-68-30] 21 p3794 N68-34090 served from Nimbus 2: [NASA-TM-X-60412]

(CNAEM-58) 22 p3913 N68-34854

al vertical variations of (M-7378) 22 p3904 N68-35271

in plasma due to particle ure gradient 23 p4143 N68-37015

[11.7]

TRANS-24961

NDEX SUBJECT INDEX rature gradient effects on supersonic aircraft pernts for experi-23 p4097 N68-37381 [ESSA-TR-EDS-7] -14986 TEMPERATURE INDICATORS
U INDICATING INSTRUMENTS t errors TEMPERATURE INVERSIONS
NT CENTRIFUGING STRESS
NT INTERFACIAL TENSION
NT STRUCTURAL STRAIN -15318 to tem-Perturbation method for inverting radiative heat ansfer equation to obtain vertical constituent dis-ibution in planetary atmospheres 15537 ure of Indication in planetary at (NASA-TM-X-63021) 01 p0134 N68-10169 15662 enched residual rocket motor heat for vacuum wave opers-NASA-TM-X-631241 08 p1231 N68-18066 Relevance of frequency-av ifferences between radiative erature inversion problems reraged properties, and heat transfer and tem-16145 100 to 08 p1259 N68-18106 Linear and nonlinear temperature inversion methods for rocket plume technology, and vertical temperature profile determinations 6740 08 p1260 N68-18112 7746 Heat transfer processes, and tions over Pacific Ocean surface [PB-176578] and temperature fluctua-10 p1551 N68-19518 Relationship between atmospheric temperature gradients and clear air turbulence of lower atmosphere [NASA-CR-91055] 15 p2463 N68-26807 TEMPERATURE MEASUREMENT Spectrum-line-reversal temperature measurement through unsteady rarefaction expansion wave in vibra-tionally-excited gases 01 p0049 N68-10110 Atmospheric effects on earth radiation temperature (JPRS-43413) 01 p0059 N68-10677 Vibration temperatures behind shock attached to dihedron in hypersonic flow 01 p0053 N68-10977 Measuring residual temperatusing infrared radiation pyrome eratures of shocked plates

varie

ld in-ent 7895

ld in-

7953

0401

2943

nces EOS-

540

n at

559

side

387

em-

432

en-

525

ver 70-

43

ent

54

in

62

22

53

n-

13

14

ю

03 p0425 N68-12201 Measurements of effective resonance integral, ther-mal attenuation factor, and Doppler effect in gold [NAA-SR-12499] 03 p0372 N68-12206 Apollo space suit temperature measurements duri mulated extravehicular activities in space and

lunar surface [NASA-CR-65856] 03 p0308 N68-12218 Brightness temperature measurements of quiet sua at entimeter, millimeter, and infrared wavelengths and emparison with temperatures derived from chromospheric models [TR-0158/3230-46/-1]

03 p0406 N68-12234 ductivity of nuclear materials between 100 and 500 deg C [EUR-3644.1] 03 p0427 N68-12442

Disparity between standard surrace are the standard surrace are attained to the standard surrace are surrace and temperature of low growing crops 03 p0366 N68-12714

Experimental device for measuring and regulating rapidly changing temperatures of for measuring fluctuations in gas flow velocities 04 p0509 N68-13345

Electronic instruments for recording turbulent pulsa-ns of current velocity and temperature at great

[NOO-TRANS-376] 04 p0510 N68-13644 Fortran program for calcul-tures, isotherms, and re-hydrodynamic data [UCRL-50210] ulating Hugoniot tempera-04 p0598 N68-13835

Photographic pyrometry techniques and applications in high temperature physics [NASA-TT-F-11407] 05 p0658 N68-14019

High speed spectroscopic methods of measuring gas nd plasms temperatures 05 p0658 N68-14088

Feasibility of thermocouple capable of temperature seasurements up to 2000 deg C in oxidizing media and 06 p0853 N68-15090 IFTD-HT-23-746-671

Simulated space ennt evaluation of direct [NASA-TM-X-53675] 06 p0815 N68-15529

Radiosonde meteorological and climatological data er Berlin, Germany for spring, 1966 06 p0870 N68-13538

Current flow and effect on water temperature in Sea Of Japan (REPT.-358) 06 p0841 N68-15862

hypervelocity sphere traveling in argon atmosphere (ISL-T-33/66) 07 p1093 N68-16146

Electron temperature med aluminum cathode of spectro [ISL-T-19/66] nts for calibrating 07 p1093 N68-16155

Black, and visible thermal radio tion measurements (ISL-5/66) 07 p1094 N68-16158

Pulse echo ultrasonic systemining temperature by mestimes in wire sensors [NASA-CR-72339] m for automatically deter-suring round trip transit 07 p0997 N68-16506

Research projects sum imperature measurement tysics and resistance sta ed in solid state physics, tics, fluid physics, solar 07 p1035 N68-16556

Cryogenic sensor errors in perature in cryogenic fluids [NASA-CR-92741] uring transient tem

07 n1036 N68-16729 Messurement of temperature and density of charged particles of argon plasma jet using two anode versions of arc jet 07 p1062 N68-16850

Pulse heating method for specific heat measurements on metals up to melting point [CEA-R-3287] 07 p1100 N68-17141 07 p1100 N68-17141

Temperature data plots of Gemini Bravo series space 07 p0951 N68-17171 NASA-CR-659361 istribution data based on

Stratospheric tempe Tiros 7 radiometer da [NASA-CR-92554] 08 p1196 N68-17551 Comparison of Tiros 7 15 micron carbon dioxide

radiometer tempera m radiosondes 08 p1196 N68-17552

Tiros 7 observations of Antarctic stratospheric arming in 1963 08 p1196 N68-17553

Fuel plate temperature me test reactor to determine limi [AFIT-TR-67-9] nts in engineering 08 p1205 N68-17637

Crossed-beam spe etection of local ter urbalest for ctroscopy technique for remote mperature and partial pressure in 06 pl164 N68-18098

mion techniques for measuring temperature and re distribution in liquid rocket propellant plumes 08 p1259 N68-18100

metric techniques for estimating flow field atures of reentry vehicles 08 p1242 N68-18105

Heavy liquid bubble char nber tem 08 p1260 N68-18153

ascrements for tem-Temperature perfe ECOM-2896) 09 pl313 N68-18333

Use of high purity m [NASA-TT-F-11548] on pl449 N68-18813 Meteorological wind, and temperature data from at-

phere (NASA-TN-D-4429) 09 p1369 N68-19084 ctroscopic temperature lesmas 10 p1574 N68-20273 Nonlinear corrects measurements in turb [AFML-TR-67-371]

Platinum resistance t ated in cryogenic tempe [NASA-TN-D-4499] ers tested and evalu-10 p1531 N68-20324

normal conductivity of nickel-zinc ferrite at liquid on temperatures, and transport properties of a-germanium at low temperatures 10 p1582 N68-20502

nding rocket de Ballute device for re-for accurate wind and to (UDRI-TR-67-144) 11 p1736 N68-21586

Wind and temperature measurement data from seconological sounding rockets, and radiosonde ob-ervations - June 1967 11 p1736 N68-21827

Plasma jet temperature me 12 p1944 N68-21885 ments, and freezing soils 12 p1865 N68-22011 Soil temperature measur mechanisms in granular and fir [REPT.-47-9]

Gas and electron temperature measurements of otassium and sodium seeded argon plasma in electric

12 p1945 N68-22027 Temperature coefficients measurements of reactivity for organic cooled lattices with simulated burned-up uranium disorde fisels [DPST-68-83-1] 12 p1906 N68-22564

transiest temperature test facility /TREAT/ 12 p1984 N68-22971

alysis methods for ther Installation and error mocouples used in surface (AECL-3062) 13 p2172 N68-24123

Electron beam probe m and vibrational temperature NASA-TN-D-4500) static low-density air 13 p2071 N68-24244

nce of thermal con ductivity for pit INUS-R-517) ite 14 p2278 N68-250

Vapor pressure me deg K (NASA-TN-D-4535) is of potassium to 2170 14 m2372 N68-25122

rement in electron Molten steel temp eam furnance by col beam furnance by color p (UCRL-TRANS-10215) 14 p2266 N68-25445

dure measurement data from ng rockets, and radiosonde ob-Wind and tempera seteorological soundir ervations - July 1967

14 p2286 N68-25593 Nucleate boiling and boiling heat transfer in aqueo 15 p2575 N68-26180

Temperature and heat trans arbulent convection along verti

tions in studying 15 p2540 N68-26559

of rota tures in static low densi (NASA-TM-X-59966)

measurement data from ckets, and radiosonde ob-

16 p2701 N68-27677 es to study condition of 16 p2681 N68-27729

uring methods in self

16 p2670 N68-27866

nger tip skin temperature measurement in make female during immersion in cold water to isolate or incidence of Raymouth disease in females than [NASA-TT-F-11790]

16 p2600 N68-28058 haust vibration and tem-ion sircraft 17 p2807 N68-28929 Reciprocating er perature levels in g [FAA-NA-68-27]

neasurement data from

17 p2909 N68-29390 arch, ocean bottom re-planition species 17 p2882 N68-29453

triction of iron single crystal measured as temperature and magnetic field 18 p3151 N68-29905

ination of pressure ical model for d EUR-3927E) 18 p3014 N68-30186

ment during an

Doviet-Moc, Including c, sidel map, and no

15 p3000 N48-30 in for Apollo heat si 18 p3/90 NGS material using Pacetti INASA-TN-D-47131

Fuel cladding temperature may type reactor fuel rods in EWA-2 (REPT.-879/XL/R) 18 p3121 1468-30817 Compensating offer et of air layer between ground and

SU

1

15

[N

SN.

[Al

T

Pate NA

H

of ri

[SA

troi - C

AF.

C

D

IFTE

Zr-Ci

EAR

TENSIL

Tes [NAS

TENSIL

TEM

Jet VTOL aircraft inlet temperature rise and induced recirculating flow patterns [NASA-CR-1147] 20 p3392 N68-33043 for measuring heat flux Single-thermocoupi in thermally thick wall [NASA-TN-D-4737] 20 p3611 N68-33208 Temperat (DLR-FB-68-30) 21 p3794 N68-34090 applicable to liquid sodium cooled nuclear p 21 p3724 N68-34152 Heat transfer and tran delta model and wedge is [NPL-AERO-1259] rements on swept 21 p3619 N68-34349 Environmental sens of improved TIROS sa [NESCTM-7] data acquisition system 21 p3779 N68-34352 chaiques for measure as produced by explo ive ion heating of 22 p3939 N68-34861 (SR-12) 23 p4055 N68-36520 Infrared method for th [NAL-TR-150] 23 p4083 N68-36636 Electrically h wire for monitoring

tained at 26 we 23 p4096 N68-36951 erature errors of satel-ts in test chamber 23 p4041 N68-37005 tion of average lites due to environments [ESRO-TN-22/ESTEC/]

23 p4062 N68-36716 abulated from data ob-

Wind and to eteorological easurement data from 23 p4096 N68-37119

in upper atmosphere and alternative method carbon dioxide 23 p4058 N68-37142 using fine tungsten wire a based on infrared emissio [ESRO-SN-84/ESLAB/]

nual temperature mea-ermal radiation 24 p4353 N68-37611 INASA-TT-F-1 [932]

dies on convective ry layer turbulence, erosol particles 24 p4280 N68-38037

TEMPERATURE MEASURING INSTRUMENTS
INT BATHYTHERMOGRAPHS
INT PYROMETERS
INT RADIATION PYROMETERS
INT RESISTANCE THERMOMETERS
INT THERMOCOUPLE PYROMETERS
INT THERMOMETERS

[RISO-M-643]

Te

system design using infrared radiation sens [NASA-CR-89988] 01 p0062 N68-10001 Ametated bibliography chemistry and physics of ma [REPT.-3] on high temperature lah in condensed state 01 p0099 N68-10366

of platinum film gages for measurements in shock tunoory and application erature and heat flux

(DLR-MITT.-67-15) 02 p0210 N68-11154 re analysis of thermal CRREL-TR-1941 03 p0339 N68-12346

Joule heating and for measuring molyb (AFOSR-67-2800) 05 p0671 N68-14796

rel sensor for liquid ulsion studies 06 p0847 N68-15893 (NASA-TN-D-4339) Liquid crystals app of banded metallic on [NASA-CR-61503] or thermographic testing

07 p1002 N68-16108 ring in-core tem

ENWL-399) 07 p1023 N68-16142 are chemistry and Bibliography on physics of materials NP-171411 07 p1035 N68-16462

ties at C.N.R.S. 07 p0999 N68-16811 [REPT.-67-5] of air temperature 09 p1346 N88-19464 variations at di (JPRS-45050) 11 p1694 N68-21709

hod and apparatus for use reactions 12 p1839 N68-22761

om for measuring fuel, stores in liquid metal [QPR-1] 13 p2066 N68-23233

surement of high tem-ric techniques for tem-sium seeded hydrogen 14 p2322 N68-24571 Real tit NASA-CR-860551

d tu meters for continuous city data at abyssal depths 14 p2249 N68-24961

n characteristics for measuring tures of gas flows 18 p3073 N68-29947 mic calibration cl (FTD-HT-23-874-67)

Developments in call termometers and ocean n of deep sea reversi hic temperature meas ic temperature measur-coustic studies 19 p3259 N68-31725 ing instruments for us [NUWC-TP-27]

it for skin temperat [RAE-TR-67280] 21 p3639 N68-34009

Bibliography on he and temperature mea-[ARC-RAM-3512] 21 p3794 N68-34071

perature transmitter 21 p3640 N68-34345 [NASA-TM-X-61199] onic wind tune ric te atmospheric tempers titudes between 35 as [NASA-CR-66638]

22 p3879 N68-35757 pressure, and flow rotating machinery 23 p4060 N68-36021 direction sensing prob [NASA-TN-D-4816]

Thermal entry length ment in tubular radiation [NASA-CR-1200] ture sensor place-

23 p4061 N68-36530 ity of photoelectric 23 p4064 N68-36983

in upper atmosphere and alternative method carbon dioxide Temperature measure using fine tungsten wire a based on infrared emissio (ESRO-SN-84/ESLAB/) carbon dioxide 23 p4058 N68-37142

X-15 flight test data on it for measuring total temperat [NASA-TM-X-61115] idic temperature sensor e of hypersonic aircraft 23 p4066 N68-37326

curate high temperatur [NASA-TT-F-11931] 24 p4353 N68-37610

TEMPERATURE PHOTOMETERS
U PHOTOMETERS

TEMPERATURE PROBES

Microminiaturized thin film probes and application to body temperature measurements

11 p1638 N68-20663 rolled thermal probes packages into polar and long term observa-(CRREL-TR-210) 21 p3694 N68-34545

TEMPERATURE PROFILES

Heat transfer and temperate upper layer of North Atlantic Oc [NOO-TRANS-294] re profile changes in 01 p0061 N68-10819

Modified line reversal py erature profiles within gas neter for measuring to as reaction zones local posite solid propeller above burning surfac [NASA-CR-90226] 01 p0127 N68-10

ula for calcu scient of att turbulence from temperatu (RAE-LIB-TRANS-1243)

02 p0203 N68-11057 and transcendental ap-onduction problem 02 p0227 N68-11109 proximation for true [NASA-CR-955]

Probe sweeping technique for obtaining heat flux roflies in arc jet flows with fast response, thin walled [TR-0158/3240-10/-4]

02 p0210 N64-11160

diffusion of marine air over con u and dependence on temperat BNWL-SA-1401] 02 p0232 N68-11435 Temperature profiles of Lewis-Rayleigh afterglow emitted by active nitrogen [TR-1001/2240-20/-6, V. 1]

03 p0312 N68-12228 evior of solid radio tive/convective me ductive/conve [BARC-288] 03 p0426 N68-12288

Tabulated vertical profile ir temperature and turbule s of mean wind speed and race statistics of lower at-ECOM-65-G10, V. 2] 03 p0339 N68-12385

New low cost rocket sonde titude measurements of tem le system for routine high mperature and wind verti-

04 p0583 N68-13585 Tungsten-stainless steel sensor for averaging tem-erature measurement of nonuniform temperature

NASA-TN-D-4242] 06 p0847 N68-15936 orth crust temperature varia-tontal downwarp 08 p1167 N68-17534 Geothermal profile on ex-tions across ciscarpathian f [T-4-UKR.]

ic temperature profiles ments at limb of earth 08 p1174 N68-18103

Horizon radiance measurement temperature variation at str ts for estimating diur-08 p1174 N68-18104

serical study of n rsion applied to at-08 pl 198 N68-18110

Linear and nonlinea for rocket plume tech profile determinations mperature inversion methods ogy, and vertical temperature

08 p1260 N68-18112 porous plates with volume cooling of nuclear reactors

09 p1449 N68-18679

emperature profile of upper Martian atmospheric els in terms of kinetic theory applied to ideal gases avitational force fields

09 p1420 N68-18838 tive model for predicting imperatures on Mars in

09 p1420 N68-18839

model and envelope of extreme for use in designing Mars 09 p1421 N68-18842

sorption in carbon dioxide atmosphere temperature

NASA-TM-X-573461 09 p1425 N68-19199 Aircraft portable horizontal and vertice (IERTM-ATDL-6) recorder to take of air temperature 09 p1346 N68-19464

Airborne infrared rac Hudson Bay water surfac [TR-36] ometer surveys of 10 p1523 N68-20264

FORTRAN 4 com m for calculating tem-NASA-TM-X-1556]

11 p1777 N68-21267 Spatial geometry and dy omogeneities in seas ics of temperature in-

[JPRS-45104] 11 p1695 N68-21823 Thermal scale models be eory for predicting temp rototypes is based on distorted model temperatures in homologous

14 p2372 N68-25088 rement, radiative ne in Martian at-[NASA-CR-94964]

15 p2556 N68-25807 d on heat transfer and locity in turbulent boun-[NASA-TN-D-4611] 15 p2574 N68-25917

Velocity and ten sove unstable ev-sence of moving s files in boundary layer in of water under in-16 p2796 N68-27730

Use of slow transic emperature coefficient uel temperature coef eriments to evaluate fuel sumerical calculations of of ultrahigh temperature reactor experime 16 p2710 N68-28286

rical evaluation of to position as function

EX

228

288

385

ria.

534

h

103

iur-

104

at-

110

112

679

838

839

842

199

take

464

264

267

823

880

ative

807

917

730

fuei s of

1286

n of ion ion

Theoretical basis of equations of equations or office in atmosp ms for mean wind and eric surface layer 19 p3272 N68-31644 (IERTM-ATDL-7) re of topside for NASA-TM-X-63305) 20 p3472 N68-33206 Piqua Power Reactor recovery core lower grid plate (Al-AEC-MEMO-12574) 20 p3535 N68-33493 Stratospheric temperatur 15 to July 29, 1966, derive re patterns for period May ed from Nimbus 2 antellite [NASA-TM-X-60427] 21 p3684 N68-33864 Global stratospheric in sured by Nimbus 2 satelli [NASA-TM-X-60413] radiation patterns mea-21 p3716 N68-34244 Analysis of diabatic wind a 21 p3717 N68-34291 Theoretical harmonic analysis of soil profiles of tem-erature and heat flux 21 p3718 N68-34295 Calculating temperature vective boundary layers of [NASA-TM-X-59737] 21 p3772 N68-34551 Heat transfer from bal n type shadow shield to natical discussion 21 p3795 N68-34564 cryogen storage tank - mi [NASA-TM-X-61243] Theoretical temperature E and F ionospheric region e and electro density profiles [NASA-TM-X-63345] 22 p3956 N68-35750 Experimental investigati boundary layer with air inj [ARC-R&M-3526] m of compremible turbulent 23 p4051 N68-37061 NT THERMISTORS Fluidics concept applied to miniaturized all-fluid high temperature sensing probes for use in hypervelocity wind tunnels [NASA-CR-90092] 01 p0063 N68-10286 dissipation factors of at-Thermal time resp 02 p0211 N68-11326 [ECOM-5147] tivity tests for flux ability and ter NASA-CR-73156 03 p0346 N68-12773 High temperature ultra ments in nuclear rocket e of rhenium sensor as high ic temperature measure-ne to determine feasibility rature sensor 13 p2072 N68-24327 [NASA-CR-72395] Fluidic temperature: (SAN-639-7) 14 m2255 N68-24713 Fluidic bistable a ated as control to conmperature sensor 15 p2465 N68-25691 18 p3071 N68-29668 Comparison of heat tri pulsating bed and fluidize [ANL-TRANS-592] der coefficients of sensor in bed of dry sand 18 p3184 N68-29819 cteristics for measuring gas flows 18 p3073 N68-29947 Dynamic calibration [FTD-HT-23-874-67] Industrial plant auto and temperature sensor [FTD-MT-24-298-67] sing solid state devices 22 p3876 N68-35296 03 p0350 N68-12142 indexes of alloy s per designations for (DMIC MEMO-233) 13 p2080 N68-23166 Tensile and hardness to Zr-Cr and Zr-Nb-Cr alloys and work hardening of r quenching and temper-[BARC-306] 18 p3094 N68-30570 mess of marteneitic

Strain tempering effects on tough

TENSILE CREEP

[NASA-CR-93203]

TENSILE DEFORMATION

hardening of metastable as [UCRL-17803]

19 p3289 N68-30875

treated glassy carbon 08 p1190 N68-17390

03 p0424 N68-12744

ure, and temperature of e properties and strain

05 p0677 N68-14742

o of pyrolytic graphite 05 p0681 N68-14797 (NASA-CR-91832) er tests of cast 07 p1008 N68-16331 n of pyrolytic graphite 07 p1011 N68-16526 NASA-CR-927481 bility of glassy curbon at room spect to magnetic field strength. (NASA-CR-93141) 07 p1012 N68-16783 Iron alloy strengtheniz ticle dispersion, and fract dispersioned strengthene [NASA-CR-93409] ine beryllium oxide par-of tensile deformation of 09 p1352 N68-18549 nd theory for nickel and tress and at constant and 15 p2481 N68-25956 ring dynamic symmetrical free flight impact and ani-static tension and compression to 19 p3289 N68-30942 tellurium additives on ton steels 22 p3885 N68-35791 ng forces in cutting low ca Deformation effects on strengths of welded and sheet 23 p4074 N68-36286 NASA-CR-619841 athematical mode to of tensile defo ethylene terephthe experimental measure-and thermal stress of 23 p4085 N68-37249 TENSILE PROPERTIES Tomile properties of iron and steel irradiated with [EURAEC-1864] 01 p0072 N68-10038 es of fiber reinforced Elastic and ten AFML-TR-67-148) 01 p0081 N68-10541 mical behavi m carbide and magnesium oxide polycry (NASA-CR-905[1] mics 02 p0225 N68-11625 Axial tensile fatigue of liq sid rocket engine alloys at [NASA-TN-D-4274] 02 p0222 N68-11637 ffects on hardness and 03 p0350 N68-12142 Tensile properties of plasticized polyvinyl chloride as action of processing variables and environmental ex-AD-661402) 04 p0526 N68-13440 Cryogenic and amb ies of hot-pressed blo WANL-TME-1619) le compression properm 04 p0523 N68-13893 recrystallization behavior, ions, aging response and tennile id Zr-No alloys BNWL-546) 05 p0672 N68-13977 ation of nickel base alloy TAZ-al for advanced gas turbine en-NASA-TN-D-43901 06 p0855 N68-15637 e creep rate in carbons 07 p1011 N68-16484 Neutron radiation impact, and hardnes [NASA-CR-93128] tensile, creep, fatigue, of reactor materials 07 p1009 N68-16876 Tensile properties of [IITRI-B6072-6] 10 p1539 N68-20131 Texture and med tropy of tensile proper-(AMMRC-TR-67-05) 11 p1710 N68-20647 Effects of neutron in seeded, cold worked n on tensile properties of reached zirconium niobi-BARC-300) 11 p1712 N68-20962 Impurity effects upon notch toughness and tensile operaies of high purity iron weld 13 p2080 N68-23162 Texture effects on sheet to nile properties of tituni-(AMMRC-TR-68-03) 13 p2082 N68-23499 Rupture and tomile ies of cotton decroe 15 p2488 N68-24202

o presimie on tennile properties of intermetallic range 150 to 370 day C (ARL-MET-50) Hot salt stress comproperties of titusians [NASA-TN-D-4674] 18 p3000 N68-30000 on termile, impact, or not weakle in Elle Riv ies of s fatigue properties of Reactor /ERR/ pressu (SWRI-1228-P-8-15) 18 p3116 N68-30302 aile proper INASA-TN-D-4725) 18 p3093 1968-30504 operies of tang NASA-TN-D-4728) 15 p3094 7668-30 of stome on ter AFML-TR-68-181 l, and thereins of ab-19 p3293 N68-3[605 NASA-SP-5012/01/1 20 p3509 1468-32517 Relation of adh (ERDE-5/M/68) Improvement of tennile properties of Hastelloy X-280 and Incosel 600 after irradiation in high temperature nuclear reacto BNWL-SA-14421 20 p3503 N68-33273 on tensile properties of Neutron irradi nwitic stainless of NWL-SA-14551 20 p3505 N68-33354 Postirradiation an eratures on tensile fects at cryogonic ten-s of commercially pure (NASA-CR-72428) 20 p3506 N68-33325 Tensile properties han testing tempera WAPD-TM-767] at temperature other activical method 21 p3704 N68-34449 enconetric properties of ingle crystals of offices 23 p4158 N68-37309 seel material metch doc-(NRL-6739) 23 p4104 N68-37339 TENSILE STRENGTH Electic and plantic titanium alloy choots (AMRA-TR-67-22) ile properties of SAI-2.55e 01 p0077 N68-10741 Evaluation of fibe [NASA-CR-90509] 02 p0225 N68-11690 al stremes d thick walk AC-TR-67-03] 03 p0420 N68-12113 Burst test tensile strength arracteristics of cryogenic bo and premare strein [NASA-CR-72330] 05 p0747 1968-14371 on room temperature forming processes 05 poses Nucl. 14844 of plan, borne, and pro-(NASA-TN-D-4412) 07 p1012 N60-16623 Composition and host treatment effects on high ten-erature strength of arc melted tungsten hallium-curinasa-TN-D-4379) 08 p1184 N66-17317 Tensile properties of sel-ter pressure vessel applical [NRL-6649] its for muchuar reac-09 p1351 N68-18415 Tensile strength and a relded abusiness and a NASA-CR-61596) dyals of resistance apol test allege 09 p1347 1466-18777 of Santylahous 10 p1554 PGB-19595 y polymethyl m Yielding plo 10 p1543 N68-30215 d to mechanical proper-11 p1719 H68-31336 d and galvanised in-11 p1707 N68-2151 12 p1851 1468-21896

ents on saturated

SUB

70

TH

LIB

TER

ter (R

TER

eke tru

TER

TER

Scienium and hydrogen effects on tensile properties of sirconium and Zircaloy
[AERE-R-5639] 13 p2083 N68-23697 Elongation tests on free p way marking point flexibility [NCEL-TR-368] t films to determine run-13 p2049 N68-23974 Production and testing of tough, high strength alpha-eta titanium base alloys with improved ductility and yield properties 13 p2085 N68-24148 Reinforcing tungsten fi loys to attain elevated i n filaments applied to metals and ad temperature strength and corrosion resistance (RM-RI-7130) 13 p2086 N68-24250 Cold work and heat to radiation stability [GA-8064] nt effects on steel ir-14 p2273 N68-25264 and tensile strength of Flexure, bend minuted bidire [AFML-TR-67-366] 16 p2776 N68-27055 Axial slit effects on re polyethylene terephthalate shells residual tensile strengths of te film and fabric cylindrical [L-5483] 16 p2785 N68-27930 Tensile strength, electrolyte retention, electric re-stance, and dimensional stability tests to screen parator materials for silver zinc batteries 17 p2811 N68-28725 Optimum reinforcing fiber arrangement and quantity in sheets for specified tensile strength and modulus of [ARC-CP-975] 18 p3176 N68-29895 sile strength and micro ness of iron and [NASA-TT-F-(1447) 19 p3295 N68-31981 Prestressing applied to glass fiber reinforced resin laminates to improve tensile strength [RAE-LIB-TRANS-1292] 20 p3508 N68-32272 Case-hardened NiCr steel specimens studied for effect of residual austenite on strength under fluctuating [TRANS-68/67] 20 µ3495 N68-32486 as alloys on strength and ductility 20 p3500 N68-32766 Tennile strength, plasticity, of welded joints in contact with [JPRS-46254] and corrosion resistance Iquid Itthium 20 p3603 N68-33095 Effects of carbon con atio on fatigue strength 20 p3505 N68-33358 usile strength of tungsten-sechuetium alloys and pure technetium [NASA-CR-97099] 22 p3893 N68-36001 s on strength of cross rolled 23 p4080 N68-37405 TENSILE STRESS Dynamic tensile stress-strain test to determine effect of purity and temperature on dynamic microstrain of [TR-0158/3250-10/-7] 04 p0520 N68-12961 Equations derived for radial and azimuthal stresses in finitely long solunoids immersed in externally applied scalled finite. perallel fields EP-RR-121 05 p0748 N68-14507 ed for determining tensile atress functions of strain rate 05 p0669 N68-14865 re tests on single lap (DLR-FB-67-80) mperatures 08 p1246 N68-17490 techniques, and test ural stability and safety (THG-1204/R/, PT. 3) 09 p1442 N68-18756 force-separation model on crack body subjected to uniform tensile

12 p1975 N68-22134 around spherical cavities in it elastic bodies subjected to 14 p2357 N68-24973 in cracks and joints of transfer tensile stresses 15 p2566 N68-25727 reduction for cubic 16 p2711 N68-26992

Fabrication and testing of dispersion strengthened nickel chromium riveted joints [DAC-60787] 17 p2982 N68-29060 Effects of hydrogen and precipitated hydrides on sechanical properties of Zircaloy-4 determined by tensile testing [BAW-3765-6] Loading sequence and scale factor in estimatis strength of brittle solids under complex tensile ar compressive loads 19 p3290 N68-31069 Tensile tests of constructional alloy steel bolted butt 18 p3173 N68-29607 (FEL-317-11) Spalling thresholds of beryllium alloy for controlled spact loads Surface-replication and three dimensional metallog-raphy for studying, slip, twinning, carbide cracking, wold formation, and microcleavage in tensile tests of iron and steel (UCRL-13339) 18 p3092 N68-30327 Brittleness in steel subjected to tension after com-(SSC-183) 19 p3295 N68-31873 pressive prestra |SSC-1841 18 p3097 N68-30859 Machining tolerances for round metal test pieces for tensi [REPT.-315] standard proportional ile testing 20 p3491 N68-33568 Surface layer stress effects on fatigue resistance and fracturing of aluminum samples [MCR-67-421] 19 p3293 N68-31672 Factors affecting tensile strength of ductile metals reinforced with short, brittle fibers [NASA-CR-96350] 22 p3893 N68-36004 Pressure effects on ductility and fracture of metals in 22 p3893 N68-36004 20 p3499 N68-32726 [RTS-4509] TENSIOMETERS Dynamic relaxation method for softing mini-ference equations of stress analysis problems 21 p3785 N68-33802 Extensiometer calibrating rig with high sensitivity [AID-METRO/12] 14 p2256 N68-24903 le ductility of copper al-Tensiometric pressur hydrocarbon fuel vapor 22 p3888 N68-34959 16 p2748 N68-27856 Tensimetric studies of cerium terbium oxygen system ents of bolts in assembled joints 23 p4067 N68-36225 (RRL-LR100) TENSILE TESTS 20 p3424 N68-32844 TENSION TESTERS
U TENSILE TESTS Rapid tensile tests conducted with intermediate-rade steel reinforcing bars AD-659263] 01 p0145 N68-10867 TENSOMETERS tests conducted to deter-onded titanium alloys 02 p0216 N68-11374 Shear, tensile, Calculations for elastic tensometric elements and operation of tensometric force measuring devices [NASA-TT-F-513] 06 p0922 N68-15796 Mine properti [Al-67-137] echanical and physical TENSOR ANALYSIS AFML-TR-67-159] rograms for calculating general tensors and equations of motion 02 p0241 N68-11695 Four computer | 05 p0681 N68-14619 [AD-660044] Calculations for elastic etric elements and operation of tensometric force m [NASA-TT-F-513] easuring devices 06 p0922 N68-15796 Fortran computer program for calculating most eneral tensor moments of polarization in nuclear reac-Fracture mechanics and t nsile tests of reactor vessel tions and scatte (ORNL-4125) 03 p0390 N68-12392 07 p1031 N68-16832 [WCAP-3677-5] Independent, equivalent flag ensor definitions 06 p0867 N68-16042 ture tests on single lap Tensor analysis of elastic wave propagation in anisotropic media [TR-18] 10 p1606 N68-20028 08 p1246 N68-17490 Experimental study of grain boundaries and carbide particles in strengthening mechanism and fracture behavior of spheroidized carbon steels Sum rules for tensor and axial tensor currents in higher spin meson couplings [TUEP-68-4] 14 p2302 N68-24513 behavior of spher [NYO-2394-28] 08 p1188 N68-18180 14 p2302 N68-24513 igh speed tension test 11 p1794 N68-20934 Search for magnetic field induced optical second armonic using quartz, ADP, nickel, and glass 15 p2535 N68-25998 [UCRL-13226] Crack propagation is ressure vessel spec-System formulation using ter or methods 16 p2634 N68-27690 [NASA-TN-D-4541] 11 p1716 N68-21768 Mathematical foundation of Kron tensor analysis of electrical networks Destructive testing for stu in tension skins of wing cente [NLR-TN-S.657] dy of fatigue crack nuclei 13 p2162 N68-24038 21 p3671 N68-33750 Aniaotropic plasticity in sheet metal under stress from tensile tests
[COA-NOTE-MAT-15] 15 p2479 N68-25674 perties calculated from sor analysis 22 p3898 N68-35020 15 p2479 N68-25674 Source function and b tromechanical material co-son and Maxwell equations [TDM-68-10] Serrated yielding in alt m alloys at different 15 p2482 N68-26054 23 p4105 N68-36161 Flow stress analysis us conium, and Zircaloy 2 [ORO-3262-5] ile tests on titanum, zirnd relaxation frequency d impurity scattering in 15 p2485 N68-26613 Tensile testing, opt conductivity testing, a failure of oxidizer tank [NASA-CR-61806] tical and electron fractography, and chemical analysis of structural 23 p4153 N68-36741 and chemical ik ring baffle web 15 p2476 N68-26868 product space [JINR-E2-3831] 23 p4126 N68-36996 Fatigue and tensile tests to at ffect on fatigue behavior and study stress concentration d strength of smooth and r spaces in continuum mechanics of topole [CRREL-RR-207] notched steels (AFML-TR-68-19) 16 p2775 N68-27047 TENSOR FIELDS U TENSORS nickel determined by 16 p2677 N68-27274 Strain and precipitation hardening effects on frac-ture characteristics of outectoid steel wire

teel wire 16 p2680 N68-27657

ture testing of graphite

orts 17 p2904 N68-28973

18 p3094 N68-30570

strain measurements of

ced temperatures 18 p3079 N68-30819

unical and high tempera ents as reactor core supp

Tensile and hardness tests, and work hardening of Zr-Cr and Zr-Nb-Cr alloys after quenching and temper-

[GAMD-8371]

[MARC-306]

Diameter gage for true at tensile specimens at reduce [UDRI-TR-68-04]

nations 24 p4278 N68-38341 ENSORS NT STRESS TENSORS Tensor operators in U/n/ and operator calculus of 01 p0109 N68-10520 Clebsch-Go is, irreducible tensors, Cletuch-Gordan coefficients, and rotational matrices in SU/3/ [LYCEN-6727] 03 p0393 N68-12560 Diagrammatic calculus for tensor operators in unita-[AD-662755] Spectral functi m rules for symmetric tensor (TUEP-67-29) 07 p1052 N68-16902

SUBJECT INDEX tance tensor components aide from 50 to 300 deg K 08 pl222 N68-17281 (IS-T-198) Spectral representation of boson fields with spin cater than 2 and Fourier transforms of vacuum ex-ctation value in tensor field 08 p1214 N68-17623 Partially conserved vector and tensor current hypotheses applied to photopion amplitude [IC-67-17] 12 p1923 N68-22191 Model on Lee fields of arbitrary tensor and isotopic [JINR-P2-3731] 15 p2519 N68-26388 Magnetic behavior of single domain particles, and agreetometric demagnetization tensor 16 p2716 N68-27813 Tensor conductivity effect on continuum and colli-sioniem magnetohydrodynamic flows flows 21 p3746 N68-33677 Statistical tensors used to describe decay distribu-(TPJU-15/67) 22 p3936 N68-35863 for observables 24 p4317 N68-37974 [JINR-P2-3851] TERRIUM e, magnetic properties, and phase diagram of n-manganese alloys, and phase diagram of ercury and terbium-mercury compounds 01 p0122 N68-10101 SR-2 n-activated lithium a ninescent desimeters silicate glass for Tert 04 p0559 N68-13690 Ground term energy levels and crystal field parame-ters of terbium in schoelite crystals. [HDL-TR-1367] 10 p1577 N68-19891 Spin-orbit matrix elements [HDL-TR-1380] 16 p2718 N68-27019 Tensimetric studies of cerium terbium oxygen system 20 p3424 N68-32844 Energy distribution of neutrons scattered from single crystal of terbiam studied as function of momentum

NDEX

ides on

3-31069

ted butt

-31838

etallog-acking, tests of

-31873

ortional

-33568 metals

36004

24903

wrated

27856

system

32844

s and

15796

11695

most reac-

2392

6042

m in

0028

ds in

4513

cond

5998

7690

is of

3750

from

5020

161

ncy in

741

-108

996

341

120

60

115

20 p3568 N68-32854 Inelastic neutron scattering for studying magnons in terbium and terbium-10 percent holmium [RISO-178] 21 p3754 N68-34154 21 p3754 N68-34154 Absorption and fluorescence spectra and crystal field parameters of triply ionized terbium in calcium (HOL-TR-1377) 23 p4148 N68-36159 TERBIUM ISOTOPES Measurement of internal conversion electron spec-trum for radioactive decay of terbium isotopes [INP-481/PL] 03 p0399 N68-12779 ma coincidence spectra

Data analysis of game in terbium isotope decay [JINR-P6-3479] 10 p1566 N68-19757 Conversion electron spectra, gamma ray spectra, and lectron-gamma and gamma-gamma coincidence specelectron-gamma and gamma-gamma coincidence spec-tra from decay of Tb 155 to Gd 155 [JINR-P6-3695] 16 p2726 N68-27959 TEREPHTHALATE

Ultrahigh molecular weight poly/ethylene terephtha-late/ synthesis with gas chromatograph apparatus [NASA-TM-X-60301] 16 p2689 N68-27407

Effects of stretch and heat-set temperatures and time on cryogenic mechanical properties of poly/ethyl terephthalate/ film [NASA-TN-D-4762] 20 p3511 N68-33034 20 p3511 N68-33034 TERMINAL BALLISTICS

Hydrodynamic model of micrometeoroid impact alculations for impact of apherical aluminus irroparticle on semi-infinite aluminum target 02 p0277 N68-11632 microparticle on sem [NASA-CR-90412] Penetration mech s and post-perforation effects 04 p0590 N68-13414 in aluminum-alum (NWC-TP-4414)

spact effect estimates for flow model of wing stabil-(DLR-FB-67-92) 08 p1106 N68-17558 Test evaluation of term targets under simulated me [NASA-CR-92016] istics for aluminum id impact 10 p1603 Nes-19768 Penetration resis e of aluminum double sheet tar-

NASA-TN-D-4568) 14 p2358 N68-25104 Impact testing of fuses using air gun and lead targets 14 p2364 N68-25515 Optimization of stochastic control processes with respect to probability of entering target manifold in specific time interval [NASA-CR-95140] 16 p2633 N68-27207

ed to flight crews from spall and penetration of aircraft 19 p3198 N68-31175 Reduction of hazard to I debris due to ballistic penetr [DRI-931-6702-F] olid and application to reduced density proje (NASA-CR-1140)

19 p3381 N68-31912 Cratering and ejecta ch ypervelocity impact of 23 p4182 N68-36816

24 p4340 N68-37578

bris cloud produced by tration of thin plates 24 p4349 M68-38076 hypervelocity per (GRF/MC/68-4) TERMINAL FACILITIES

Design, and development of satellite communica-ons ground terminals on moving vehicle - vocoders a speech compression, signal modulation, and auto-(ESD-TR-67-1821 04 p0476 N68-13209

of transportable ground ation technology 04 p0476 N68-13210 tions terminal for

04 p0477 N68-13211

terminal 04 p0477 N68-13214 el vocoder as specialism ch processor for satellite

04 p0477 N68-13215 ork data for short range I weather 20 p3521 N68-32716

Meso-meteorological networ prediction of svintion terminal v [SRDS-RD-68-40] TERMINAL GUIDANCE

Terminal guidance of air to surface missile using op-timal control and filtering [GGC/EE/67-2] 09 p1371 N68-18666 09 p1371 N68-18666 terminal suidance for in-09 p1372 N68-18987

V/STOL research on ability, display devices, guidance 16 p2588 N68-27445 pilot performance, and NASA-TM-X-60456] al flight path control ic transport problems in terminal at [NASA-TM-X-59047]

16 p2637 N68-27544 ice system analy-Voyager spacecraft to [NASA-CR-61909]

19 p3372 N68-31201 Entry and terminal phase performance analyses of configurations for direct versus orbital entry for Mars [NASA-CR-66662] 19 p3367 N68-31834

Cumulative errors associated with Category 2 and 3 perations, and terminal flight paths for low visibility (NASA-CR-11881 22 p3806 N68-35595

TERMINATING U STOPPING TERMINATOR LINES

Micrometric measureme [P-3692] Venus 02 p0266 N6B-11424 TERMINOLOGY

Clarification of S matrix properties terminology (UCRL-16983) 03 p0396 N66-12658 Test thessurus of engineer constructed for Project LEX (ONR-26) g and scientific terms 04 p0599 N68-13741

Quantitative method for se in information retrieval syst translations of scientific mater [FTD-HT-66-515] ting key words for use 06 p0803 N68-15161 Glossary of mapping, charti [AD-666989] q, and geodetic terms 12 pl869 N68-22821

valents for acceleration 15 p2402 N68-26501

Proposed general terms for serodynamics and struc-tural vibrations. [RAE-TM-AERO-997] 14 p2300 N68-25519 14 p2300 N68-25519 TERNARY ALLOYS

Phase equilibria in ternary sy carbon through melting ranges [AFML-TR-65-2, PT. 2, V. 17]

09 p1351 N64-18394 on carbon action in 12 p1886 N68-21963

High strength properti loys with selected additive [NASA-CR-94601] 13 p2086 N68-24325

Phase diagrams for binary and ternary Ti alloys (FTD-MT-65-387) 18 p3094 N68-30563

and gold in dilute silver-illoy composition 21 p3791 N66-33665 Heats of solution of silv gold-tin alloys as function of [NASA-CR-87774]

Evaluation of light right, high strength magnesium INASA-CR-96888) 22 p3890 N68-35143

Thermal, structural, as and intermetallic compos [NYO-3454-22] gnetic studies of metals 22 p3952 N68-35794

TERNARY SYSTEMS

Chemical potentials and partial pressures of turners we place system components with inothermal-inobaric hange in composition two plane sys change in con [PA-TT-67] 03 p0313 N68-12438

rent process [AFOSR-67-2789] 06 #0893 N68-15169

Constancy of dyna tures oxygen nitrogen nitrogen oxygen 07 p0983 N68-16197 (B31

Radiographic data on qu um, zirconium system [KFK-643] 10 p1479 N68-19527

10 pl492 N68-20259

Thermodynamic propert with ternary thorium and u (ORNL-TN4-2015) 11 p1713 N68-21093 Reaction kinetics of ternary oxide glass maki [NASA-CR-94134] olten binary and

11 p1720 N68-21662

13 n2023 1468-24271

to on glass form 15 p2487 N68-26020

tric properties, and ferre 17 p2954 N68-28470

on U-Co-Zr termany on administration and crystal or nitrides, and car ture temperature (EURFNR-387) 17 p2842 N68-29045

ndynamic properties relative to id Fe-Cr and Ni-Cr, and liquid Fe-

18 p3089 N66-30G37

18 p3090 N63-30124

19 p3222 N68-31086

10 p3424 N68-32839

20 s3424 N48-32943

20 p3424 N6B-32844

bad siremen had these property 21 p3649 NSB-33932

ents for topographic

SUB

100

lite [ES

thi (B)

10

1

TEST

Soviet theory of crystallochemical analogy and nelectronic series of inorganic complex phase miconductor materials 23 p4150 N68-36355 Electrical and magnetic properties of high tempera-ture thermistor based on-zinc oxide-iron oxide-nickel incide system 23 p4034 N68-37318 Method for determining phase equilibria of binary and ternary homogeneous liquid mixtures subjected to d ternary h 24 p4212 N68-37622 Soviet blue research on open microwave resonators, unik 10 measurements of gamma radiation, ternary halcogenide systems, macromolecular chemistry, and Lunik 10 mean chalcogenide systems, macro reactor physics 24 p4302 N68-37893 Soviet bloc research on ternary gallium and indium chalcogenide systems containing Group I, II, III or V 24 p4332 N68-37896 Equilibrium thermodynamic data for H2-O2-He (UTIAS-TN-128) 24 p4355 N68-38083 TERNARY SYSTEMS [DIGITAL]
U DIGITAL SYSTEMS TERPENES NT CAMPHOR T CAMETON.
Spectroscopic analysis of isoprene reaction with or-anic lithium compound in diethyl ether 02 p0179 N68-11883 sizing chloris rted polyterpene addi-(FTD-HT-67-256) 18 p3028 N68-30466 Test equipment develops nent for organic aerosol and rugh atmospheric sampling 23 p4010 N68-36675 response determinations thro [NASA-CR-73253] TERPHENYLS Electric effects in terphenyl including electrical con-uctivity and Seebeck effect measurements ductivity and Se (EUR-3631.F) Burements 03 p0406 N68-12254 Properties of isom (CONF-660553-4) or terphenyls 14 p2212 N68-24667 nyl coolants 24 p4296 N68-37907 [MIT-334-94] TERRAIN Environ ental factors affecting short-range commu-[AD-660040] 02 p0182 N68-11709 Electrical properties measurement techniques for rrain influencing performance of tactical telecommu-02 p0182 N68-11711 Digital con uter computation of gravity correction 04 p0500 N68-13267 Infrared inspection of terrain for computer programs [NASA-CR-91466] 04 p0501 N68-13412 Nondimensional wind shear over heterogeneous ter-rain and problems of statistical determination 04 p0502 N68-13594 Numerical terrain ma digital graphics recorder operational features of 05 p0654 N68-14845 Tabulated VHF propagation data as obtained over irregular terrain in Ohio at 20, 50, and 100 MHz [IER-38-ITSA-38-3] 13 p2028 N68-23859 graphy during Gemini Geological terrain p [NASA-TM-X-63244] 16 p2655 N68-27615 tion of terrain fea n from Nimbus I satellite meter nighttime measuretion infrared radio [NASA-TN-D-4603] 17 p2877 N68-28872

TERRAIN ANALYSIS (TR-4) (TR-3) [NASA-CR-90211] INASA-CR-914721 [U67-1043] [NASA-CR-93365] (TR-13) [NASA-CR-94544] Radar Doppler scatte of earth terrain that sim [NASA-CR-62072] Comparative geograp [TR-5] (NASA-CR-95878) (ACIC-TR-104, REV.) Remote multispectral teristics of important widespread areas [NASA-CR-95889] ty gradients in southeast Ohi [REPT_89] Comparison of microden waveform analysis as expre scape patterns on radar

Manpower and cost requirements for topographic survey work in mountainous regions [ACIC-TC-1449] 24 p4252 N68-38055 er and cost requ Design criteria for lunar roving vehicles based on photoiniterpretation of lunar topography as seen by Ranger, Surveyor, Orbiter, and Lumik probes [NASA-TM-X-53661] 01 p0133 N68-10150 TERRAIN FOLLOWING AIRCRAFT TSR-2 AIRCRAFT Gravitational field of Black Sea depression and adjoining territory along deep seismic sounding profiles discussed with respect to earth crust [ACIC-TC-1224] 01 p0058 N68-10428 Navigation problems associated with nap-of-the-earth flying 21 p3644 N68-34543 TERRESTRIAL DUST BELT Visible and infrared imaging techniques for aveform analysis of geographical patterns Cosmos and Explorer satellite data used to reject pothesis of terrestrial meteoroid and dust clouds nl patterns 02 p0203 N68-11140 NASA-CR-93742) 10 p1521 N68-19938 Guidelines for selecting viewing points for three-Intensity of sunlight scattered by earth dust cloud 16 p2764 N68-27517 02 p0206 N68-11427 Differential equation of particle motion in dust near earth solved by Ramge-Kutta method taking into ac-count radiation and corpuscular pressure as well as Poynting-Robertson effect Factors and procedures influencing statistical relia-bility of agricultural data from earth orbiting sensor 02 p0293 N68-11810 16 p2765 N68-27518 Problems in geodetic gravimetry and earth geometry [ACIC-TC-1282] 04 p0499 N68-13083 TERRESTRIAL MAGNETISM U GEOMAGNETISM Airborne polypolarized radar data for terrain analy-TERRESTRIAL RADIATION 04 p0479 N68-13437 Quantitative terrain study of vertical takeoff aircraft landing site distributions and effects on penetration [CAL-VE-2303-D] 04 p0445 N68-13824 Navigation chart accuracy requirements of low al-itude, high speed military aircraft, and terrain-mission interaction analysis method 05 p0689 N68-14841 Airborne digital radar landmass simulation ques applied to aerial soil Photointerpretation techni survey in west central Luxemi 08 p1166 N68-17333 Advantages, limitations, and optimization of mul-and reconnaissance techniques for earth resource in-[BMWF-FB-W-67-39] 08 p1150 N68-18199 red from radar imagery ob-Vegetation maps prepared from tained over several climatic environ [NASA-CR-75170] 09 p1284 N68-19214 Mixed hexagonal hierarchies of river drainage basin areas for predicting numers of drainage basins in fluvial 11 p1688 N68-20868 and water surface temperat [NASA-CR-96693] Optimization of confidence levels in detecting lunar surface detail in terms of viewing geometry and camera shutter speeds for Lunar Orbiter missions [NASA-TN-D-4501] 12 p1871 N68-21942 TESSERAL HARMONICS Radar and infrared imaging techniques for dif-ferentiating rock types and delineating structural fea-13 p2057 N68-23210 [NASA-CR-93688] er for reflectivity studies unar surfaces 13 p2028 N68-23721 TEST CHAMBERS

NT ANECHOIC CHAMBERS

NT PRESSURE CHAMBERS

NT VACUUM CHAMBERS 13 p2063 N68-23962 ding algorithms for autono nous myopic rov-18 p3112 N68-30297 rimental techniques for tes ramjet engine flow in shoci Comparative study of aerial photography for soils and terrain data analyses - Phoenix, Arizona test area [REPT.-36-TR] 18 p3079 N68-30679 (MIC-951 Hand-tooling technique rove production of shade model making to im-lief portrayal on USAF 18 n3070 N68-30684 [A9] ng of radiation charac-18 p3070 N68-30772 Digital terrain library from United States geological survey [REPT.-08055-1-T] high temperature (NUWC-TP-13) topographic maps of 19 p3269 N68-31128 Slow rotation chamber s fects of centripetal and corio vestibular analyzers ive mapping of ground 20 p3473 N68-33400 ts and horizontal gravi-21 p3687 N68-34573 [SAM-TR-67-80] metry and television as of observed land

22 p3876 N68-35378

22 p3838 N68-35745

to data characteristics, error control, as algorithms for Mars television mappir

Topographic influ

CERS7-48GH-G/B-/EC54)

tivity or scattering cross is function of incidence angle [NASA-TM-X-61291]

or polarization : terrain, and hyd

Computer method for predicting transmission loss over irregular terrain [NASA-CR-97275] 23 p4022 N68-37023

es on wind near Green River

22 p3906 N68-35446

n to measure radar reflec-ons of various surfaces as

23 p4020 N68-36499

eristics of symmetrical

24 p4228 N68-38219

THE O

[NASA-CR-86095]

8-38055

NDEX

p-of-the--34543

reject ids -19938 oud -27517 nt near nto ac-well as

-27518

rature

10677 Ansion 14706 radio d ter-

estri-ity of 2150 over 4246 ace

7141 1349 dyze

045 om-

770

293 test 181 ind ent

115 ef-55

90 75 Safety control in environmental chambers - instru-mentation used to detect electrical discharge anomalies in vacuum chambers 15 p2447 N68-26908

Structural design and operational characteristics of 100,000 cubic foot acoustic reverberation chamber 16 p2638 N68-27991

State-of-the-art survey of low pressure and thermal diation environment space simulation test chambers 17 p2868 N68-29000

Molecular flux and equivalent pressure in space en-ronment simulation test chamber 17 p2868 N68-29001

Gas removal by physical adsorption and chemisorp-tion in space simulation test chamber 17 p2868 N68-29002

Radiative properties of solidified gases exposed to in-frared radiation in aerospace environmental test cham-bers

17 p2986 N68-29003

Significance of solar simulation in space unusuous test chambers for satellite design parameters 17 p2868 N68-29004 Calculation of average temperature errors of satellites due to environmental defects in test chamber [ESRO-TN-22/ESTEC/] 23 p4041 N68-37005

TEST EQUIPMENT Percent recharge unit for automatically monitoring and controlling rechargeable batteries during charge-discharge cycling tests [NASA-CR-90099] 01 p0005 N68-10610

Feasibility of mondestructive testing in space environment - environmental testing, prototype hardware design, manufacture, and evaluation (NASA-CR-90042) 01 p0071 N68-10953

Laboratory equipment for studying parameters of ead injuries related to acceleration and deceleration TI-118-67-1] 02 p0164 N68-11042

[TI-118-67-1] Ultrasonic magnetostrictive vibrator and applica-ons to cavitation erotion testing NEL-271] 02 p0213 N68-11788

High power, high burnup test assemblies for power reactor design [CVNA-274] 03 m0374 N68.12445

Components, and functions of checkout system for third stage of ELDO launch vehicle [DGRR/WGLR PAPER-66-066]
06 p0804 N68-15211

Test equipment extensional rigidity effect on initial suckling load of unreinforced circular cylindrical shells in axial compressi [SUDAAR 298] 06 p0918 N68-15234

Automatic testing and checkout of Saturn 1 launch [NASA-TN-D-4328]

06 p0916 N68-15570 Flight vibration test equipment for SST Concorde [ONERA-NT-120] 08 p1246 N68-17434

Test rig for measuring oscillatory derivatives in high speed wind tunnels

08 pl111 N68-17457 Experimental equipment and testing methods for electofluid dynamic energy conversion 08 p1123 N68-17818

Instrumentation system for coriolis acceleration test NASA-CR-93432]

09 p1287 N68-18497 Mathematical procedures for correlating physical data obtained on various sized equipment to establish general physical laws or equations
[NASA-CR-61634] 09 p1383 N68-18980

Development of single impact laboratory device for rain erosion damage studies on solids 09 p1324 N68-19410

Calibration procedure for TS-1325/TRC-75 radio Test set INAVAIR-17-20AO-421 10 p1527 N68-19520

Calibration procedure for TS-1324/TRC-75 coupler control test set [NAVAIR-17-20AQ-43] 10 p1527 N68-19534

Calibration procedure for semiconductor tests sets [NAVAIR-17-20AY-24] 10 p1527 N68-19560 Tracing and sensing systems for analysis of fibrous materials under tensile impact loading [TR-68-28-CM] 10 p1529 N68-19803 Calibration procedure for transmitter test equipment

10 p1499 N68-20143 [NAVAIR-17-20BCK-4] Correlation between Pennsylvania and California rag testers for measuring pavement surface resistance MR-633251] 13 p2048 N68-23622 [MR-633251] Selection considerations for prelaunch test equipment system for Apollo telescope mount [NASA-CR-61818] 14 p2237 N68-25451

Potential of exploding wire apparatus for laboratory imulation of shock waves

14 p2238 N68-25538

esign and performance of dual mode shock hine for testing new missile shipping and storage ainer concept to extremes of simulated shipboard rwater explosion shocks 14 p2239 N68-25540

Voltage breakdown phenomena - high vonage packaging techniques and test equipment. 15 p2445 N68-26898

Pressure profile of Javelin ethods for reducing gas load rocket experiment and

15 p2446 N68-26900 High shear working test equipment for mechanical stability of eight greases [RIA-68-654] 16 p2666 N68-27012

Acoustic relations for design of high frequency

acoustic test systems 16 p2714 N68-27343 eries used in ultrasonic

Test equipment and accer-testing - programmed instru-destructive testing [NASA-CR-61210] 17 p2891 N68-28782 Selection of test equipmethods for ultrasonic testicion textbook on nondestruct [NASA-CR-61211] pment, techniques, and ng - programmed instruc-

17 p2892 N68-28783 tester and testing procedure for isotope heat source containers BNWL-6491 17 p2895 N68-29311

Engineering design concepts for airborne range and orbit determination transponder station, and test equipment for vehicle and transponder checkout [NASA-CR-61901] 19 p3238 N88-31328

Compiler for Programming Language for Automatic Checkout Equipment (PLACE/ [AFAPL-TR-68-27, PT. 1]

19 p3247 N68-31364 Breadboard model design and construction of test equipment for studying alver zinc battery behavior in zero-g environment of earth orbit (RASA-CR-95993) 19 p.3204. NAS-31874

Test equipment development for organic aerosol and terpene determinations through atmospheric sampling [NASA-CR-73253] 23 p4010 N68-36675

Design concepts and development of electric cable

[ECOM-0390-3] 24 p4236 N68-38287

[ECOM-0390-3] 24 p4236 N64
TEST FACILITIES
NT ANECHOIC CHAMBERS
NT BALLISTIC RANGES
NT BLOWDOWN WIND TUNNELS
NT COMBUSTION WIND TUNNELS
NT COMBUSTION WIND TUNNELS
NT ENGINE TESTING LABORATORIES
NT HOTSINOT WIND TUNNELS
NT HOTSINOT WIND TUNNELS
NT LOW DENSITY WIND TUNNELS
NT LOW DENSITY WIND TUNNELS
NT LOW DENSITY WIND TUNNELS
NT MISSILE RANGES
NT MISSILE RANGES

LOW SPEED WIND TUNNELS
MISSILE RANGES
PLASMA JET WIND TUNNELS
ROCKET TEST FACILITIES
SHOCK TUNNELS
SLOTTED WIND TUNNELS
SUBSONIC WIND TUNNELS
SUPERSONIC WIND TUNNELS
TRANSIENT REACTOR TEST FACILITY
TRANSONIC WIND TUNNELS
WIND TUNNELS
WIND TUNNELS

Air Force Office of Scientific Research organization, current research program, and research accomplishments described (APOSR-67-0300) 01 p0154 N68-10199

Plasma physics research activities, facilities organition and staff at Montreal University 01 p0121 N68-10957

Ground installation checkout and acceptar space vehicle [NASA-TM-X-60664] and testing facilities for re testing of Apollo Sature S 02 p0194 N68-11067

Automated charge-discha direct current electrical powe [AERDL-1908] pe facility for study of 02 p0194 N68-11430

Systems engineering and arment, test facilities, and m analyses, ground support management of NERVA (NASA-CR-91051) 03 p0368 N68-11960

Gold inert gas shock tube facility (SCL-DR-67-34) 03 p0333 N68-12379 Handbook on aircraft stands, and ongine test facili [FTD-MT-65-435] ne tusis, engine lest

04 p0563 N68-12886

Single anis simulator as test facility to simulator dynamic behavior of large astronomical salelile [ESRO-TM/P/-76] 04 p0490 N68-13

Operating manual for 2.5 MeV Van de Granff posi-ive ion accelerator NOLTR-67-102) 04 p0490 N68-13446

Sampling of highly rac licactive streams in operating ts of fast flux test facility pro-BNWL-4911

05 p0617 N68-13968 Mass spectros review of spectro [NBS-TN-426] es, test facilities, and 05 p0617 N68-14011

05 p0641 N68-14071

Pumping, vacuum, cry supporting systems for ap (NASA-CR-91733)

ctor experimental and project 05 p0692 N68-14193 Aircraft model construction schniques for measuring flut edance, and aeroelasticity e, and test facilities and ter, vibration modes, im-

05 p0748 N68-14561 on of hypersonic wind

(NASA-TT-F-11206) 05 p0646 N68-14878 Multiple impact rain erosion of airframe materials studied at speeds up to 450 m/s in test facility [RAE-TR-67019]

High temperature preach flottom atomic [DP-425, PT. 2] 06 p0875 N68-15753

06 p0823 N68-15858

ody state resonance tests accessic test facility 06 p0823 N68-16018 or for KRB reactor, equa-p, and large steam 07 p1027 N68-16308

Radial vane stone tions of flow and pre (GEAP-5524)

ESRO facilities for calibration and measurement of radiation from astronomical light sources [ESRO-SN-44] 07 g0996 NAS-16373 07 p0996 N68-16373

Low pressure test loop for me ment of subcooled void profile (QR-2) oring early develop-07 p1095 N68-16463

Test facilities for determining hydrodynamic charac-ristics of missile launching in water 07 p0986 N64-16795

ock tube testing with SCL-DR-67-491 OE p1156 N68-17220 characteristics by water odel for oscillating steady

wind phone (NYO-3673-2] 06 p1160 N68-17226 Survey of aircr of test facilities and techniques in Gres 08 p1156 N68-17274

Design, and perform cycle testing of two stag [NASA-CR-924, V.3] of facility for Runkins 08 p[125 N68-18044

ties, and methods of ob-male phone rediction 06 p1260 N68-18113 es of small scale blow

Transient starting che down wind tunnel test fi [NASA-TM-X-33571] 08 pl 160 N68-18190

SNAP 8 simulator u op, mercury loop up Rankine Cycle, as INASA-TM-X-15151 09 p1322 N68-1844

SNAP 8 simulator 6 [NASA-TM-X-1525] 09 p1343 Nas-19 to operate at h

[AEDC-TR-67-210] 10 p1512 NGO-20133 Feasibility of using air s neh for testing integrated [AEDC-TR-67-242] 10 p1512 N69-20139

-12 piles Neb-23452

The test facility 12 p1856 1668-22397 Overall mote (BNWL-300)

13 p2165 760-23134

SUB

TETT

CHE

int.

TETT

lov [35

[A

TET

TET

di

C

F

14

TEU

Test apperatus and procedures for serodynamic model tests of spacecraft control system parameters [NASA-CR-947] 13 p2139 N68-23452 instrumentation, and operation se shock tube for use in labora-24 p4241 N68-37523 Thermionic cathode dc life capabilities [NASA-CR-97322] 24 p4200 N68-38001 AFFDL-TR-68-21] 13 p2129 N68-24048 Technical characteristics of experiments proposed or cybernetic accelerator - general requisites for pen-ls of particles and experimental rooms 24 p4320 N68-38191 ESTEC test facility for testing ESRO 1 satellite solar cell modules and arrays (ESRO-TN-9/ESTEC/) 13 p2049 N68-24177 n facilities for satellites TEST FIRING NT STATIC FIRING [RAE-TR-67152] 14 p2235 N68-24780 Test firing to determin ale materials for 4-inch di [CARDE-TN-1757] Piloted simulation studies Gessini and Apollo space progra [NASA-TM-X-59598] with applicability to rocket engines 02 p0262 N68-11581 14 p2237 N68-25245 Design, fabrication, an test firing of 260 inch Launch phase simulator /aps ecraft test facility/ 14 µ2238 N68-25512 [NASA-CR-72289] 06 p0897 N68-15188 Heavy weight shock test facilities for Naval ship-Static test firing of 260-\$1.-3 rocket motor to verify nign concepts, fabrication techniques, and materials itability 14 p2238 N68-25533 (NASA-CR-72284) Missile launch shock test facility for Shillelagh an-ank missile components 06 p0899 N68-16053 Stability effects of s injector face buffle con-14 p2238 N68-25537 en-oxygen rocket 11 p1778 N68-21679 figurations on screech in hydrog [NASA-TN-D-4515] Nike X shock tube facility 14 p2239 N68-25539 Summary information in the second control of fabrication, testing, and Shock absorber test for testi ng road spring vibration 11 p1778 N68-21684 (A12) 15 p2472 N68-25798 Quantitative analysis hydrogen combustion pro [NASA-TM-X-52304] liquid oxygen-liquid using spectrometer 16 p2609 N68-27610 earch projects of instru-of ORNL 16 p2662 N68-27536 ORNL-42191 Small rocket engine test firings conducted to mea-sure particle size distribution of aluminum oxide ex-Flight test facili imiques for low speed 17 p2962 N68-29036 [NASA-CR-95688] [NASA-TM-X-60088] 16 p2637 N68-27658 Manufacture and firing test results for large proto-pe solid rocket motor roacoustic testing aformation on en-testing of Apollo NASA-TM-X-61238] 21 p3760 N68-34725 U TESTS spacecraft [AD-668246] 16 p2787 N68-27989 TEST PILOTS Revised pilot rating scale for evaluating aircraft has ing qualities quirements for vibros n test facilities for aero vehicles 16 n2638 N68-27990 08 p1110 N68-17449 ional characteristics of rheration chamber 16 p2638 N68-27991 Structural design and op 100,000 cubic first scoustic TEST PROGRAMS TEST RANGES
NT BALLISTIC RANGES
NT MISSILE RANGES sign, and performance of spacecraft tory used in vibratory testing of Apollo ambility of San Marco type launching pad and ad support equipment for ELDO launch vehicle 10 p1513 N68-20301 16 p2639 N68-27992 elation facilities for testing Increased distance between maintenance area and spulation center for ground aircraft test noise reduc-17 p2814 N68-28745 population ce tion [INC/C6/P9] ar beam facility /com-14 p2187 N68-25363 ponent system developed IPAPS-67/68-2121 18 p3054 N68-29858 TEST STANDS Handbook on aircraft engine tests, engine test stands, and engine test facilities [FTD-MT-65-435] 04 p0563 N68-12886 c solar cell test facil ty at ESTEC (ESRO-TN-8) 18 p3062 N68-30145 Capture cross section of alyzing time-of-flight-da tolinium, methods for ad installation of CDC Alternation of thrust stand dynamics using hydraulic [AEDC-TR-67-232] 07 p0981 N68-16355 19 p3326 N68-31157 Chemical analysis, physical properties, and test beds for 12 basic soils analyzed in lunar module soil Instrumentation system for coriolis acceleration test NASA-CR-934321 09 p1287 N68-18497 [NASA-CR-92215] 19 p3270 N68-31325 Design of test strongerating in open-er [D1-82-0743] aring torque of rotor re 21 p3625 N68-34148 ONERA infrared de 19 p3278 N68-31538 NT FLIGHT TEST VEHICLES d data processing equip-i tests of oscillating airfoils Static longitudinal aerodynamic characteristics of onfigurations used in Little Joe/Apollo test vehicle 19 p3196 N68-31870 [NASA-TN-D-4439] Test facili s for testing acceleromet guidance and navigatio 12 p1973 N68-22953 s used in inertial guid U TEST EQUIPMENT (MDC-TR-48-48) 19 p3308 N68-31965 and evaluation of trans to compile standards for of radioactive materials Test facility develoration accidents TENG MACHINES TEST EQUIPMENT 20 p3491 N68-33594 TESTS erformance prodic-np self-compensat of perf Methods for determining face fit for respiratory profor for last assemble ing threat balance (NASA-CR-72430) tactive devices (SC-RR-67-461) 01 p0018 N68-10988 21 p3697 N68-34271 Survey of literature on aerodynamic loads associated with external carriage of pyton mounted stores adrent, and critical angle active testing 21 p.s698 N68-34350

ARC-RAM-3503]

[NASA-CR-91346]

ographic facility for

23 p4040 N68-36868

ithic circuit

Empirical method for determining drag of ballistic 04 p0436 N68-13582 Fin/spin stabilization methods used in design of im-proved Athena vehicle 04 p0583 N68-13584 Nonparametric testing of ergodic properties of given set of samples from time series 04 p0502 N68-13596 Theoretical modeling of fog modification by seedin with hygroscopic nuclei, climatic survey of fog frequen cy in Buffalo, New York, large scale laboratory experi ments, and field tests (NASA-CR-91683) 05 p0685 N68-14212 Rocket mean seric electron densi-05 p0651 N68-14401 Effect of system ns in perceived scoring [NAMI-1010] 06 p0777 N68-15204 Conceptual design and test program for manned Mars Excursion Module /MEM/ mission in 1980 period NASA-CR-925611 06 p0912 N68-15723 Mechanical aspects of dyn rmance structures to deter mic tear test of high per-[NRL-1826] 07 p1090 N68-16504 IRL-1820; Instrumentation, tensioning technical structural at ensurement concrete pres techniques, and test iral stability and safety of spherical prestremed (TRG-1204/R/, PT. 3) 09 p1442 N68-18756 Methods for separatis counting fusion products [AERE-R-5387] rifying, mounting, and 09 p1296 N68-18896 Leakage testing theory and testing methods hand-[NASA-CR-952] 10 p1535 N68-20389 Principles of connector testi immercial connectors, and as or threaded connectors iting, design evaluation of [NASA-CR-93924] 11 p1704 N68-20976 Performance, random vibration, and temperature ests of alternate potentiometer sources for Saturn 1B trust vector control servoactuator [MR-1289] 12 p1874 N68-22464 Performance and imm ometer sources for Sal ector control servoacts and immersion tests of alternate poten-es for Saturn 2 and Saturn S-48 thrust vector contr 12 p1874 N68-22465 Test program for evaluating alternate potentiometer surces for Saturn S-IC thrust vector control servouc-[MR-1196] 12 p1875 N68-22469 epts, and qualification appropulant valve 12 p1973 N68-22972 Specificatio test procedures for C-1 engine be [NASA-CR-61735] Methods used in studies of normal sleep and effects of drug induced sleep on visual alertness 14 p2198 N68-24865 Thyroid function test by mean scanning for traces of iodine 131 [NSJ-TR-120] ns of whole body linear 19 p3209 N68-31392 TETHERED BALLOONS High altitude tethered balloon systems [GER-13552] 22 p3805 N68-35441 TETHERING Tethered space vehicle operations /rotational and gravity gradient/ explored in Gemini program 05 p0744 N68-14946 TETHERS.INES Gemini-Agena station keeping using connecting ther - Analysis and simulations tether - Analysis and s [NASA-TN-D-4258] 02 p0271 N68-11641 Variable flexibility tethers for astronaut extravehicu-lar activity [NASA-CR-65966] 08 p1137 N68-18187

02 p0159 N68-11785

ards and methods for

04 p0486 N68-12972

Light line tethering technique for determining aerodynamic derivatives of air cushion vehicles 12 p1815 N68-22053 Feasibility of launching and retrieving high altitude (GER-13714) 22 p3804 N68-35304 High altitude tethered balloon systems configura-[GER-13790] 22 p3805 N68-35305 TETRACHLORIDES. Preparation and anal tetrachloride compound (TR-0158/3250-30/-1) ses of hafnium and zirconium with organic ligands

13 p2019 N68-23877 TETRACHLOROMETHANE U CARSON TETRACHLORIDE

L8A-1395)

et gas glove ective materia (F-670533-9)

SURJECT INDEX TETRACYCLINES Spectral and magnetic properties of tetragonal sacrocylic complexes of nickel/2/ 11 p1644 N68-20644 Heat transfer coefficients in drying of moist tetra-cycline by unsteady flow of heated air [ANL-TRANS-593] 18 p3185 N68-29820 TETRAFLUOROHYDRAZINE Spectroscopic study of trimethylborane, and reac-tions of tetrafisorohydrazine with iron pentacarbonyl and of nitrosonium nitrate with isobutylene - low tem-perature reactions [MRC-DA.1441] 04 p0468 N68-13518 Gas chromatographic control for production of tetrafluorohydrazine by electrolysis [CNEA-194] 17 p2843 N68-29265 TETRAGONS
U RECTANGLES
U TRAPEZOIDS TETRAHEDRONS Thermal expansion of tetrahedrally bonded solids at 10 p1578 N68-20030 i) m tetrahedral network model 16 p2690 N68-27619 Random tets [AD-669125] TETRANITROTETRAZACYCLOOCTANE HMX TETRODES Design and development of ultra linear thoristed tangeten filament tetrodes [AD-660033] 02 p0188 N68-11245 Tetrode for single sideb nimion in commer-(EE-TRANS-1756) 20 p3435 N68-32443 for wire spark chamber generator for irogen tetrode thyratrons 20 p3456 N68-32809 TEXAS le surface temperature variations due to sea ulation on upper Texas gulf coast 18 p3109 N68-30053 TEXTBOOKS Space orientated supplement to secondary level geometry textbooks [NASA-CR-90075] 01 p0136 N68-10822 Textbook on analog and dip plications in data processing sy [FTD-TT-66-636] ital computers, and ap-02 p0184 N68-11251 n safety technician tra Radiation ([ANL-7291] ining course textbook 03 p0309 N68-12755 Textbook on dos distion shielding 07 p0946 N68-16751 Textbook on traw (FTD-MT-65-453) 08 p1154 N68-18008

VDEX

-13582

of im-

-13584

f given

13596

eeding equen-experi-

14212

densi-

14401

coring

15204

5721

per-

6504

test

8756

and

1896

1389

976

464

165

169

72

cts

65

92

48

chemistry methods of sufacturing techniques 11 p1700 N68-21472 Soviet textbook on phy-gas analysis, and instrument [FTD-MT-66-12] Soviet textbook on fun methods, including operat space, conical space, quar teed functions [FTD-MT-65-573] ctional analysis concepts and tors in Hilbert space, Banach stum mechanics, and general-16 p2693 N68-27174 Soviet textbook on thermodynamics and heat 16 p2792 N68-27176 Nondestructive testing programmed instruction text in forging, casting, extrusion, welding, and processing [NASA-CR-61204] 17 p2890 N68-28776 Programmed instru-penetrant nondestruc [NASA-CR-61205] ing textbook on liquid 17 p2891 N68-28777 textbook on nondestructive med is magnetic particle tes [NASA-CR-61206] 17 p2891 N68-28778 Programmed instructi eddy currents for use in a [NASA-CR-61207] book on principles of uctive testing 17 p2891 N68-28779

17 p2891 N68-28780

17 p2891 N68-28781

s of ultrasonics related to

asic theory and pri

Test equipment and accessories used in ultrasonic testing - programmed instruction textbook on non-destructive testing (NASA-CR-61210) 17 p2891 N68-28782

[NASA-CR-61209]

Selection of test equipment, techniques, and methods for ultrasonic testing - programmed instruc-tion textbook on nondestructive testing [NASA-CR-61211] TEXTS Equipment, methods, and applications for eddy currents in nondestructive testing - programmed instruction textbook [NASA-CR-61208] 17 p2891 N68-28780

Origin and nature of X rays and gamma rays an seir properties, radioactive materials, and absorption and acattering - programmed textbook on nondestrucand acattering - programmed tive testing using radiography (NASA-CR-61212) 17 p2892 N68-28784 Radiation measurement techniques and devices, oc-cupational and other dosages, personnel protection, and other aspects of radiation safety - programmed text on nondestructive tests (NASA-CR-61213) 17 p2892 N68-28785 Programmed instruction, power supplies, as equipment used in nonde [NASA-CR-61214] book on X ray genera-lities for radiographic 17 p2892 N68-28786 Radiographic image for calculations descriptions on radiograph [NASA-CR-61215] 17 p2892 N68-28787 Darkroom procedures radiographic nondestruct struction textbook [NASA-CR-61216] s and film handling related to ctive testing - programmed in-17 p2892 N68-28788 al on magnetic particle test-nondestructive inspection [NASA-CR-61227] 17 p2892 N68-28789 Classroom training textling by ultrasonic technique [NASA-CR-61228] ok on nondestructive test-17 p2893 N68-28790 Classroom training textbook on aondestructive liquid penetrant testing to locate and determine severity of surface discontinuities [NASA-CR-61229] 17 p2893 N68-28791 Eddy current principles, equipment, methods, and applications in nondestructive testing reviewed in class-room training textbook [NASA-CR-61230] 17 p2893 N68-28792 Classroom training methods and equipment for [NASA-CR-61231] ook on radiographic indestructive testing 17 p2893 N68-28793 Cybernetics textbook exp control systems combining coupling and feedback control [FTD-FT-23-578-67] ing theory of adaptive en loop disturbance 18 p3053 N68-30562 Soviet textbook on an (FTD-MT-24-138-67) ls p3043 N68-30678 Textbook on problems strength of deformable ma [FTD-MT-65-277] ods of determining 19 p3378 N68-31626 Space radiation /booklet/ 19 p3362 N68-32184 Textbook on automatic co [RTS-4264] 20 p3453 N68-32666 ndar /textbook/ 22 p3836 N68-35487 [FTD-HT-67-192] Experiments on sup-accelerator /textbook/ [AEC-TR-6936] erhigh energy cybernetic proton 24 p4318 N68-38182 NT COTTON FIBERS High-intensity thermal p [NADC-MR-6715] tive textiles 02 p0224 N68-11131 ompounde in pharmacology, ometallurgy, hydraulic fluids. Organic phosphorus biological activities, hyd and textiles [JPRS-43702] 03 p0311 N68-12154 ta for application to relia-ng and oquipment 16 p2686 N68-27045 Performance prediction da bility analyses of textile cloth [TR-68-23-CM] PR-68-23-Cm)
Multiple rupture points in textile fabrica
20 p3602 N68-32931 Textile technology from aerospace research and applicability to textile and apparel industries.
[NASA-CR-97195] 23 p4083 N68-36635 Relevance through comparison of texts judged by (CSL-TR-9) 07 p1103 N68-17190 TEXTURES Quantitative analysis of textures developed in hot-ex-traded zirconium plate [WAPD-TRANS-60] 03 p0355 N46-12770 03 p0355 N68-12770 Instrument for measuring surface texture of rock (BM-RI-7093) 08 p1181 N68-17937 ile properties of tituni Texture effects on sh um alloys [AMMRC-TR-68-03] 13 p2082 N68-23499

THEOREM PROVING Visual texture perception and puttern recognition [AMRL-TR-68-12] 18 p3010 N68-30332 TEX AIRCRAFT
U F- 111 AIRCRAFT THAILAND c pressure data for weather statis 13 p2102 N68-24033 or isnospheric data obtained from Vertical inci 18 p3066 N68-29723 Atmospheric radio noise daily variations in Thailand [AD-670052] THALAMUS errelationships between relay thalamic nucleus rojection optic region of cortex 15 p2396 N68-26269 Longitudinal electron polarization measurements on beta decay of scandium, cesium, and thalliess [REPT.-796/1/PL] 07 p1055 N68-17127 mechanisms and lu-08 p1228 N68-18004 Longitudinal polarization of beta rays from cesism 137, scandium 46, and thellium 204 [INR-798/I/PL] 09 p1393 N68-19034 Vapor pressure, anode temperature, and inverte nission effects on thallium filled diode tested with harium cathode [NASA-CR-54751] 09 p1316 N68-19433 Characteristics of thallism dimer center in sodium 13 p2131 N68-23227 Magnetoscoustics used to determine geomagne 13 p2133 N68-23506 (CEA-R-3315) 14 p2239 N68-25390 e vapor 15 p2412 N68-26161 lon recombination rates in weakly ionized lead dide and bromide and thallium iodide systems 15 p24[3 N68-26190 on while of meatress defi 23 p4113 N68-36124 THAWING U MELTING THEODOLITES CINETHEODOLITES Operating characteristic freedom proscope-theodol (FTD-MT-45-149) of three-degree- of-03 p0345 N68-12717 Theodolite with shaft as ilitary surveying gle encoder and display for REPT -8734 06 p0842 N68-15007 Light weight optical : correcting theodolite sig [WRE-TN-ISD-89] meter for field use in 12 p1878 N68-22852 Double thoodolite pibal evaluation and movement, development, and structure of ballstorms (MW-49) 13 p.2099 N68-23740 13 p2099 N68-23740 far coordinate system based on spherical geometry solid thresholin pilad evaluation in parties programming for determining model not-coordinates by sugle measurement. [1] Optical thousands TI for angular measurements at triangulation points and for polygonometry [JPRS-46457] 22 p388 N68-35974 HEOREM PROVING Inequalities for carehaped and convex functions (D1-82-9643) 02 p6226 N68-11871 requet type for system of MRC-13R-760) 02 p0227 N69-11204 Existence theorems with vector valued cost ([NASA-CR-90531] al control prob 02 p0193 N68-11006 05 p0684 1968-14882 Theorem of ort

SUL

THE

NT

Reg

T

T

dies (RL

(LP

theo [AE

[AE

rms of numerical functions analorms of abstract set funct 06 p0860 N68-15150 on mathematics and ty, control systems, IFTD-MT-64-5591 nbility 06 p0818 N68-15276 ty of Harnach type and on The 06 p0861 N68-15277 n of expe rtric series for 06 p0861 N68-15278 rorem in Cauchy problem for hyperbolic systems of qu 06 p0861 N68-15279 ephism of unary hism of 8th powers algebras following from 06 p0861 N68-15280 ly generating functions ted with queues sure property of pr ndom walk results [AD-662238] ted with queues 06 p0863 N68-15492 ng se lanach space 06 p0864 N68-15602 with certain satisfied con-of for lattice expansions 06 p0865 N68-15606 06 p0865 N68-15609 AD-662233) 06 p0865 N68-15631 rtition of abstract 06 p0867 N68-16041 e spectra for Laplace in unbounded domains 06 p0867 N68-16043 Absence of positive of operators of Dirichlet pro Theory of similar tests for partain complicated statistics of of independe 06 p0867 N68-16044 ov the e of unbound vector [NASA-CR-92714] 07 p1013 N68-16322 Bernsteins theorem is for monotomic for tial inversion formu-ual in terms of dif-09 p1358 N68-18445 Theorem proving of ge s in ergodic theory 09 p1361 N68-18633 tion to determine face area and propertie 09 p1362 N68-18638 cking in set theory 09 p1309 N68-18753 (SC-RR-67-525) ing piecewise, linear 09 pl364 N68-19115 ic images of comepined latt 09 p1364 N68-19125 09 p1364 N68-19130 tions of some initial 09 p1364 N68-19183 ace Menger algebra, ngly generated algebra 09 p1365 N68-19283 cal cipher or linear 09 p1365 N68-19321 Von Neuman algebra 09 p1366 N6E-19463 Fredholm opera (TR-14) 10 p1544 N68-19644 General proof of acing independent same [NASA-CR-93764] g theorem and encod-10 p1498 N68-20115 Integration of certain a mous functions

10 p1547 Nas-20209

ved Incal currents 10 p1571 N68-20439

sences of odd degree 10 p1550 N68-20538 bility of cost (MRC-TSR-822) 11 p1675 N68-20596 11 p1721 N68-20609 ing principle 11 p1722 N68-20629 near differential equa-(MRC-TSR-809) 11 p1724 N68-20692 ms using second Asymptotic property privative of Liapun 11 p1724 N68-20694 fferential equations with 11 p1728 N68-20913 ameters to conformal 11 p1729 N68-21061 al, and near algebra 11 p1729 N68-21065 namic analysis of auto-bitrary theories 11 p1731 N68-21460 rical fra mata employing alg [AFOSR-68-0454] Sch na for one complex us Siegel domains of second kind [MRC-TSR-796] 11 p1731 N68-21473 mpressible, viscous sulated in terms of 12 p1947 N68-22254 theorems proved for two the axisymmetric defor-[BMM-365] 13 p2157 N68-23280 nation theorem APOSE-68-06181 13 p2095 N68-23782 Subgraphs of b cted graphs 15 p2492 N68-26342 affine transform 15 p2494 N68-26592 (RM-208) t statistical test 16 p2695 N68-27425 od in binary additive 16 p2697 N68-27757 oving local lin for large deviations of 16 p2697 N68-27761 Perturbed Galerkin nd convergence theory near equations 16 p2699 N68-28252 for approximate soluti (NASA-TT-F-11376) Restoration of ori [NASA-CR-95489] to nonlinear Chandrusekar integral oq INASA-CR-95867 18 p3 104 N68-30198 ness of solution vector arce time independent 18 p3106 N68-30425 e and stability of least 19 p3301 N68-31721 rms for solving tag RTS-4422) 20 p3514 N68-32925 ration of sum rules [NP-17474] 20 p3545 N68-32951 proof for linear ordinary differential or [NASA-CR-96365] 20 p3516 N68-33255 quations and con-(NASA-CR-1164) 20 p3517 N68-33426 and Radon-Nikodym 21 p3713 N68-34027

Large sample proper tion of harmonic comp tionary residuals - indep [AROD-2055-23-M] least squares approxima-ts in time series with sta-10 p1550 N68-20466 21 p3661 N68-34457 Singular pertur of ordinary differ [AD-672212] s for periodic surfaces 21 p3714 N68-34652 ms proved for random ordinary dif (AD-672207) 21 p3715 N68-34669 Conform of compact Riemann 22 p3898 N68-35047 ms for locally convex 22 p3898 N68-35055 of Boolean functions 22 p3900 N68-35344 [AROD-4166-13-M] a of third order no 23 p4086 N68-36026 ng and immersing 23 p4087 N68-36135 23 p4025 N68-36262 [REPT.-261] Giobal con of hyperbolic systems of 23 p4088 N68-36452 function mapping in unction for continuous 23 p4088 N68-36454 Proof of St ty, and application to nany body proble 23 p4170 N68-36792 t parameter correction [NASA-TR-R-293] e critical reactor 24 p4295 N68-37880 [ANL-TRANS-645] ADDITION THEOREM BAYES THEOREM BERNOULLI THEOREM EXISTENCE THEOREMS
FLOQUET THEOREM
GAUSS MARKOV THEOREM
LAGRANGE SIMILARITY HYPOTHESIS
LEBESGUE THEOREM SIMILARITY THEOREM STOKES THEOREM (VECTOR CALCULUS) UNIQUENESS THEOREM Graphical method for dete 04 p0501 N68-13514 rtitioned matrices 06 p0860 N68-15093 [MRC-TSR-748] 06 p0860 N68-15157 [AD-662034] [MRC-TSR-775] 06 p0860 N68-15160 ring differential equa-ng zero order approxi-06 p0862 N68-15430 ectively compact sets of linear operators [MRC-TSR-767] 06 p0863 N68-15528 dding of strongly reguiar graphs (MRC-TSR-779) 06 p0864 N68-15536 (TG-230-T530) 06 p0881 N68-15880 Gauss-Seidel and other Convergence minimization algorit (NASA-CR-93159) 07 p1014 N68-16570 Banach algebra and lo-MATSCIENCE-54 08 p1193 N68-17571 eter applications to nuity, and conformal REPT.-451 08 p1193 N68-17668 ii p1723 N68-20668 Theory of quasi-Sasakian structures applied to 11 p1723 N68-20673

[TH/68/2]

SUBJECT INDEX Theorem to yield algorithm for calculation of spline functions [MRC-TSR-776] 11 p1726 N68-20821 Interchange theory perturbation theory [NASA-CR-94333] tional principle in 12 p1898 N68-22203 or of surface of revolu-Theorems for file (SCL-DR-65-102) 12 p1916 N68-22385 for difference sets for ier theore several parameter valu (MRC-TSR-793) 13 p2091 N68-23188 on th olterra equations with retarded argument [MRC-TSR-780] 13 p2091 N68-23189 **Proof of theorem** ber of circle groups on any homotopy seven ap [AROD-2056-20-M] 13 p2095 N68-23810 Equivalence of star-free Krohn and Rhodes theorem [AFOSR-68-0632] nd group-free events by 13 p2152 N68-23953 storial designs 16 p2693 N68-27115 (AD-668526) Error theory of Rung sethod 16 p2697 N68-27760 orems in theory of [JINR-P2-3725] 17 p2939 N68-29272 Plemel-Privalow theo al properties of Cas d singular integral equ its applied to struc-dary value problem NASA-TT-F-11553) 19 p3301 N68-31983 Stresses in plate ber Naghdi theory ation of Green and 20 p3603 N68-33140 ndar /textbook/ 22 p3836 N68-35487 [FTD-HT-67-192] Saddle point the d relation to discrete max-(AD-673404) 23 p4036 N68-36410 es on high energy in-24 p4319 N68-38183 THEORETICAL PHYSICS NT NEWTON THEORY NT QUANTUM THEORY Hadron interactions and decays - 3-matrix theory, Regge pole and current algebra [UCR-34P107-49] 01 p0100 N68-10012 Theoretical physics of w entary particle in-(NP-16978) 01 p0106 N68-10439 Charged triplet model for finite rac to leptonic interactions and decay [NP-16941] 01 fiative corrections 01 p0106 N68-10441 One particle states of defe tial with diffused edge for rai [JINR-P4-3451] clei in final poten-01 p0110 N68-10552 Properties and applicat theory of elementary parti-[IC-67-36] of symmetry matrix in 01 p0111 N68-10630 n correlation functions 01 p0124 N68-10631 Theoretical and expe ar reaction stu-(RLO-1062-675) 01 p0113 N68-10760 on from delta vector in (LPTHE-TH-207) 01 p0116 N68-10950 on experimental and [AED-C-23-14] 02 p0246 N68-11530 Bibliography and inde theoretical high energy phy [AED-C-23-15] on experimental and 02 p0248 N68-11579 Research equipment p aries for various nu-secretical physics investie and progress sum-

02 p0249 N68-11814

nuclear and theoretical safety factors 03 p0386 N68-11997

calculating resonance for reactor design

03 p0374 N68-12436

04 p0545 N68-13461

s, plasma dynamics, com-rmetics - radio astronomy, neural nets, information

DEX

4457

faces

4652

FAR-

mann

5047

evez

5055

5344

non-

6026

raing

5135

6262

ns of

4452

g in

454

n to

792

1073

1880

15)

514

093

157

160

430

s of

528

gu-

536

880

her

570

lo-

571

to

668

668

673

physics, sync

Theory and computer of integrals and Doppler cos [NAA-SR-12509, PT. 1]

crete symmetries, weak is metries analyses for charge [CERN-67-24, V. 1] 4 p0549 N68-13606 as of discrete sym-04 p0549 N68-13607 04 p0550 N68-13608 tinematics of lepton as to Fermi part of beta decay 04 p0550 N68-13758 Four dimensi space with SU/3/Z-3 DOUGLAS PAPER-4579) 05 p0706 N68-14127 al elementary particle Theoretical and expe physics and nucles NYO-2171-2331 05 p0706 N68-14128 Brief descriptions of theoretigations in high energy a (COO-1371-43) al and experimental in-uclear physics 05 p0720 N68-14816 Theoretical analyses of diffi [LA-DC-8805] reflectance spectra 25 p0703 N68-14874 ic, nuclear, and 06 p0883 N68-15184 arge parity, tir versal invariance, and [TH/224] 06 p0888 N68-16102 ental design and theory sign problems 07 p1026 N68-16219 Research projects of and theoretical physics [AECL-3009] ar, neutron, solid state, 07 p1047 N68-16624 al study program for 07 p1082 N68-16955 nal Centre for 08 p1262 N68-17641 nt algebra theory and co ntation relations in 08 pl193 N68-17786 Asympte function at (TH/232) d for obtaining spectral 08 p1215 N68-17883 s, and radiation effects 10 p1563 N68-19655 Lectures on part other aspects of the (INP-555/PL/PH) lear reactions, and 10 p1564 N68-19714 tum transfer depen-ses in kaon neutron (REPT.-68/4) 10 p1567 N68-19766 sory of me 10 p1505 N68-19860 jects related to atomic 1967 11 p1760 N68-20875 Nihon University physics pro-erry research summarized for NUF-A-68-21 try crossing matrix for Properties of in [COO-1573-31] 12 p1926 N68-22369 induced by charged Low energy nucle articles and beam in rith matter 12 p1926 N68-22372 particles and be COO-238-511 Research project nal Center for Theoretical (INP-17252) 12 p1932 N68-22606 ed for stati int coon interpretation of qua (JINR-E4-3687) 12 p1941 N68-22918 ins from co Derivation of pe (LPTHE-TH-219) 13 p2113 N68-23114 Basic rules and sy (PUC-937-285) quark model 13 p2114 Net-23303 (NASA-TN-D-4485) 13 p2110 N68-24146 ers, enzyme therapy actical pysics, applied 13 p2110 N68-24194

Nuclear and theoretical physics dealing with electromagnetic properties of nuclei, resonant scattering fusion process, and hadrom 14 p2305 N68-24703 ite, as theoretical physical [AECL-3108] 14 p2306 N68-24785 SU/3 symmetry 14 p2312 N68-25067 cal and su INP-555/PHI 15 m2525 N68-26847 16 p2728 N68-28039 ITF-67-231 16 p2729 N66-28072 n small scale physical renalysis of metric re LA-TR-68-61 16 p2729 N68-28078 Theory of m mperfectly conducti SC-R-68-1691) 17 µ2920 N68-28874 al SU/3/XSU/3/ and kaon-Symmetry breaking of cl nucleon scattering lengths [RIFP-73] 20 p3542 N68-32402 model 5 matrix the 21 p3734 N68-33744 21 p3738 N68-34104 Ratio F sub K/F sub pi derived by Weinburg first 22 p3931 N68-35605 development studies lective acceleration of charged pe [M-7426] 22 p3932 N68-35664 eggeized SU/6/ theory IC-68-43] on-baryon scattering in 22 p3933 N68-35702 daughter poles 22 p3937 N68-35918 plitudes, Regge to ee of know 22 p3938 N68-35929 (JINR-E2-3833) ore appro NP-172581 23 p4118 N68-36634 R/11/ symmetr for elementary pr 23 p4119 N62-36698 23 p4136 N68-37374 muchear physics, sold (155-67/44) 24 p4314 N68-37815 for infinite cour R-E2-3854) 24 p4318 N68-39084 al tents of fast cycling 06 n1158 N68-18149 dy on low cycle 12 p1885 N68-21855 epts and hypotheses on properties (JPRS-45238) 12 p1917 N68-22477 APY CHEMOTHERAPY PSYCHOTHERAPY RADIATION THERAPY NT POLAR CAP ASSORPTION 06 p1257 N68-17725 2 N48-22397 15 p2573 N68-25698 a excitons for Zir-

SUL

OE C

N

TE .

[0

tion of reentry vehicles by radiation and absorption techniques [FTD-HT-23-590-67] 24 p4356 N68-38225 THERMAL ACCOMMODATION COEFFICIENTS

U ACCOMMODATION COEFFICIENT THERMAL BATTERIES

Preparation and pyrolysis of aromatic hydrazones and hydrazonium salts for use in thermal reaction bat-(HDL-TR-1398, PT. 21 23 p4005 N68-36187

esis and pyrolysis of aliphatic hydrazones for (HDL-TR-1400) 24 p4201 N68-38221

THERMAL BOUNDARY LAYER Convective heat transfer in unsteady laminar thermal oundary layer on semi-infinite plate in viscous liquid

02 p0291 N68-11750 Rayleighs thermal convection th atmosphere generalized to include a and forced conduction at top and bo theory applicable to de effects of radiation bottom boundaries of

07 p1016 N68-16327 Experimental determination of the onset over heated horizontal plates ins on of thermal convection slates immersed in liquids 09 p1451 N68-19318

Heat transfer calcula for constant property turfulent boundary layers [ARC-29716] 12 p1981 N68-22156

Hot-wire measurements of turbulence in thermally stratified flow [CEM67-68SPSA-EJP11] 13 p2054 N68-23917

files in thermal and con-Calculating ten vective boundary layers of [NASA-TM-X-59737]

21 p3772 N68-34551 Radiative heat transfer in scattering boundary layer emitting, absorbing, and

22 p3976 N68-34843 ock wave interaction s in hypersonic and thermal ndary layers of shock tubes 22 p3854 N68-34877

Vertical flux plate flow studies for laminar convec-23 p4187 N68-36590

Thermal stability of reactor fuel rods in narrow annu-recolant channel [AERE-R-5601] 09 p1376 N68-18897 THERMAL COMPORT

Tests on supersonic pusseng-tion to insure thermal comfort [ARC-CP-976] er transport cubin insula-

19 p3198 N68-31205 THERMAL CONDUCTIVITY Thermal con

nal conductivity through rarefled gas between tic cylinders [AS-67-15] 01 p0149 N68-10274 sism model based on high temperature al conductivity of minerals and rocks 6] 01 p0055 N68-10283 Lunar volcanism n radiative thermal [NASA-CR-916]

Thermal condu nal conductance measurements of multilayer mixed polymeric films for space suit insulation

[NASA-CR-65797] 01 p0150 N68-10401 Steady state and transient prop and pre-arcing period in circuit b perties in electric arcs,

reakers 01 p0044 N68-10415 Thermal conductivity mts on isotopic

(ORNL-P-3203) 01 p0150 N68-10438 sents of europium Thermal cond nd acress Curie point 01 p0125 N68-10715

Thermal conductivity and electrical resistance of zir-mium, hufnium, niobium, and tantalum carbides at 01 p0152 N68-10777

Thermal conduction surements of polycrys [TRG-1437/C/] d electrical resistivity mea-01 p0153 N68-10943

Literature survey on joint thermal conductance between bolted plates and experimental work on nor-nal stress distribution under boltheads and interface

02 p0279 N68-11776 Reactions of Lewis acids with liquid

03 p0310 N68-11909 Philberth probe for penetrating through polar ice [CREL SR-119] 03 p0342 N68-12016

Thermal conductivity Seebeck coefficient, and elec-ical resistivity of heavily phosphorus doped silicon trical resistivity of heavily pl from 313 deg K to 673 deg K [TR-23] 03 p0406 N68-12240

Heat pipe operating principles and performance (SC-TM-66-2632) 03 p0426 N68-12363

Starting solution for two dimensional heat conduc-on problems with change of phase FR-33] 03 p0426 N68-12367

High temperature thermal conductivity of beryllium [AAEC/E-157] 03 p0357 N68-12548

Numerical analysis of axially symmetric are columns related to magnetically propelled arcs [RAE-TR-67076] 04 p0553 N68-13173

Stefan problem and theory of fusion and burning of 04 p0595 N68-13293

Methods and equipment for determining transport coefficients using high power arcs [ARL-67-0219] 04 p0554 N68-13389 ent for determining transport

Approximate solutions of balance equations for inetic electron processes of thermoluminescence and termally-atimulated conductivity, and infrared-atimu-04 p0559 N68-13685

Electron thermal conductivity of non-ideal metals, taking into account arbitrary change and amplitude of electron scattering on ions and phonon spectra deformation by impurities [NASA TT-F-11418] 05 p0727 N68-14191

Thermal conductivity of uranium plutonium carbide nuclear fuels [LA-DC-9059] 05 p0755 N68-14544

nal conductivities of upper strata of Forecarpathian fore oredeep 06 p0835 N68-15386

Status reports of freezing heat transfer, thermal conductivity, and heat capacity studies of bovine whole or-GLR-57] 06 p0773 N68-15526

oction problem solving 06 p0927 N68-15879 [TG-230-T531] Heat capacities of linear polymers at low tempera-

06 p0928 N68-15958 Temperature distributions measured on top surfa of cylindrical specimens for determining effective the mal conductivity of solid and porous tungsten

vacuum and hydrogen (NASA-CR-54429) 07 p1095 N68-16628 Boltzmann equation for calculating transport coeffi-cients and thermal conductivity of partially ionized

07 p1096 N68-16681 NASA-TM-X-60857] Literature survey on high conductivity of copper and [NP-17123] 07 p1009 N68-16684

Conductive heat transfer across solid-solid interface [NASA-CR-61556] 07 p1098 N68-16898

Turbulent heat transfer and heat conductivity effects on magnetospheric temperature [NASA-TM-X-63098] 07 p0993 N68-17139

One-dimensional time-dependent equation of heat onduction for infinite two-layer circular cylinder with [NWEF-1015] 07 p1100 N68-17158

Steady state heat flow method of measuring thermal anductivity of dysprosium, erbium, and lutetium sinity of dyspro gle crystals IS-T-185] 08 p1221 N68-17278

idies in fluid dynamics, plasma ics, and combustion ther-Scientific research studies physics, soil mechanics, (FTD-MT-64-84) 08 p1209 N68-17701

tion coefficient of time ution for thermal c ident heat radiation 08 p1256 N68-17723

Infrared radiation method iffusivity, heat capacity and d of determining thermal ad thermal conductivity of 08 p1257 N68-17901 [NASA-TT-F-11453]

Thermal conductivity of vapor grown pseudodendric now crystals at minus 88, 27, and 5 deg C in steady (SAO-SR-267) 09 p1450 N68-19016

High temperatur oxide single crystals ectivity of grown stannic 10 p1576 N68-19688 Theoretical analysis of five composite ablation materials with various percentages of phenolic resin, powdered nylon, and silica [NASA-TN-D-4374] 10 p1541 N68-19710 10 p1541 N68-19710

Thermal conductivity of nickel-zinc ferrite at liquid elium temperatures, and transport properties of n-ppe germanium at low temperatures 10 p1582 N68-20502

Instrument for precisely determining thermal con-ductivity of carbon tetrachloride and solvene, and argon-helium gas mixtures

11 p1801 N68-20662 Measurements on thermal conductivity and electri-cal resistivity of refractory metals at high temperatures [AFML-TR-67-241] 11 p1768 N68-20746

antitative method of cut-bar method for measur-ermal conductivity of solids ing ther 11 p1770 N68-20817

ity corrections to vis monatomic gas sity and thermal conduc-12 p1980 N68-21878

Heat transfer model for thermal conductivity of prous granular systems with pressurized gas flow NASA-TM-X-6[060] 12 p1982 N68-22195 porous granular systems with pre NASA-TM-X-6 [060] Thermal stability and conductivity tests for alu-

(ALO-3632-23) 12 p1983 N68-22549

Thermal conductivity measur dioxide at high temperature gradi [WAPD-TRANS-82] rements on uranium 12 p1912 N68-22943

Thermal conductivity of alkali metal vapors and [CU-2660-37] 12 p1984 N68-22980

Test apparatus for studying convective heat trunsfer between metallic contacts with interstitial fillers [NASA-CR-73122] 13 p2166 N68-23134

Electronic con nt of thermal conductivity in [ECOM-2932] 13 p2132 N68-23306

Measuring thermal condu-temperature by thermocoup [EUR-3909.E] vity of graphite at room 14 p2369 N68-24359

Interface thermal [NASA-CR-94738] e of bolted joints 14 p2355 N68-24656

Thermal conductivity measurements on potassium bloride single crystals after irradiation and tempera-(COO-1629-3) 14 p2329 N68-24676

e of thermal conductivity for pitch-bor [NUS-R-517] ed grap 14 p2278 N68-25094

Thermal conductivity uran m and uranium-pluto [GEAP-4879] 14 p2375 N68-25347

fuctivity of polycrystal zinc 14 p2335 N68-25587 Thermal cor [CNEA-202] ence of n

ns on thermal conduc-netic insulators 14 p2375 N68-25588 tivity of insulate [CNEA-201]

Soviet bloc oceanographic research activities on ermal conductivity of waves, distribution of ocean diments, and flow models 15 p2458 N68-25825

Prediction techniques for two phase suspensions thermal conductivity of

15 p2575 N68-26044 15 p2538 N68-26322

ctivity, density effects, e measurements 15 p2503 N68-26487 tion for binary and therm ixture viscosity, and therm

conductivity of lam [NASA-CR-1063] 15 p2578 N68-26815 infrared detection of hot spot and breakdown in

16 p2630 N68-26996 Pressure regulated thermal conductivity layer and heat sink conductive cooling unit for man wearing pressure sult in space [NCL-67-368] 16 p2602 N68-27046

Line source vacuum the for elastomeric heat shield [NASA-CR-66629] al conductivity measures

16 p2792 N68-27226 dy for flow shock tube to ivity of high temperature 17 p2866 N68-28346

Nonequilibrium thermodynamic approach to cor-relation and prediction of thermal conductivity of bi-

NDEX nary liquid solutions containing hydrogen bonded ablation ic resin. 17 p2983 N68-28448 Electronic thermal conductivity and magnetization of type 2 superconductors in gapless region 17 p2954 No8-28481 8-19710 at liquid Thermal conductivity of coated nuclear fuel particle charges with filler gas as function of pressure and temperature 8-20502 nal con-17 p2984 N68-28543 JUL-SII-RX) Thermodynamic eq in mixed bismuth in m sistivity, Hall, Seebec e equations on conduction processes in magnetic field to find electrical re-beck, and Nernst effects, and related 8-20662 electri ratures 8-20746 17 p2957 N68-28680 Shrinkage, thermal conductivity, porosity, and sintering of aluminum oxide for thermal insulation in radioinotope power systems [ALO-3633-8] 17 p2904 N68-29115 measur-8-20817 17 p2904 N68-29115 conduc-Correlating lunar surface materials thermal conduc-sivity with its porosity and shear strength in high-account environment -21878 ivity of 18 p3067 N68-29927 Quantum mechanical Kubo expressions used to find electrical and thermal conductivity, and shear viscosity of degenerate Lorentz electron gas in study of stellar -22195 or alu--22549 18 p3163 N68-29932 ranium Thermal conductivity of mixed uranium-plutonium -22943 18 p3089 N68-30048 ICEA-R-34881 Color centers, luminescence, and conductivity of quartz and silicon carbide crystals [AFCRL-68-0236] 18 p3023 N68-30132 ers and -22980 Research progress in plasma transport properties, wave interaction, electron density measurements, ther-mal conductivity of argon and helium, heat transfer and ransfer -23134 vity in NASA-CR-95874] 18 p3144 N68-30295 23306 High temperature gas viscosity and thermal conductivity research for H. He, Ar and N [AEDC-TR-68-105] 18 p3030 N68-30724 t room 24359 Thermal conductivity of neutron irradiated aluminum oxides, beryllium oxides, and magnesium oxides at low temperatures 24656 19 p3383 N68-30968 Thermal conductivity data for metallic elements and NSRDS-NBS-16, PT. 2) 24676 19 p3384 N68-31346 d con-Test methods and procedures to determine thermal inductivity of polyurethane foam and aluminized 23094 Mylar (NASA-CR-61915) lutoni-19 p3385 N68-31508 Thermal conductivity detector for detection of leakage in large pressurized spherical ballons [TR-02091.01-1] 19 p3199 N68-31797 25347 25587 Chemical analysis of the hydrous hydrogen chloride [ERDE-27/R/67] rmal conductivity of annduc-19 p3233 N68-31968 25588 High thermal conductivity polymeric materials for spacecraft electronic equipment size [NASA-CR-96151] 19 p3299 N68-32037 es on ocean Approximate calculations of temperature depen-ence of self diffusion coefficients, viscosities, and termal conductivities of gases 25825 ity of SMRE-TRANS-5610] 20 p3417 N68-32472 26044 slysis on heat flow through Thermal conductance analysis on heat flow through two dimensional eccentric constrictions [NASA-CR-96281] 20 p3610 N68-32974 6322 Thermal conductivity coated uranium dioxide c [NASA-CR-1154] rements on tungsten fects, 20 p3531 N68-32983 6487 Thermal conductivity measurements on sintered pel-ts and compacted uranium dioxide fuel in reactor nile ermal ermal [GEAP-5100-6] 20 p3532 N68-33132 6815 Analytical method to predict interface thermal conductance of bolted joints [NASA-CR-96316] 20 p3612 N68-33514 en in 20 p3612 N68-33514 6996 Summary results on studies of low conductance in-teratrial materials for thermal isolation and application in bolted flange joints [NASA-CR-73248] 21 p3788 N65-34080 and pres-7046 n in uranium disaide reactor atical description of heat natrical fuel elements 21 p3724 N68-34108 sures 7226 (AE-318) se to Thermal conductivity of mixed phytonium uranium oxide fuel rods after irradiation [EURAEC-1999] 21 p3725 N68-34460

Graphical-analytical method of determining steady ate heat transfer through wall with longitudinal

1346

rectangular fins and variable coefficient of thermal (FTD-HT-67-178) 21 p3796 N68-34609 Phonon resonance scattering and thermal conduc-tivity of alkali halides doped with divalent ions 22 p3948 N68-34939 ents of dense binary 22 p3977 N68-35226 Thermal conductivity and electrical resistivity of su-ropium oxide in magnetic fields [TR-24] 22 p3950 N68-35251 22 p3950 N68-35251 Nonstationary thermal covariable thermophysical prop and radiative heat transfer [FTD-MT-66-173] uction in metals with ties during convective 22 p3978 N68-35342 Thermal diffusivity and thermal conductivity of stoichiometric uranium-plutonium oxides [BNWL-704] 22 p3979 N68-35692 Thermal conductivity, in qualities of zirconium couti (NASA-TM-X-61277) ion, and thermal shock in Hastelloy 22 p3979 N68-35768 Thermal conductivity, thermoelectric power, Hall constant, and carrier mobility of n and p type alloyed FTD-HT-67-198) 22 p3952 N68-35928 Parallel plate calorimeter for measuring thermal conductivity, density and temperature dependence of helium gas at moderate pressures

[R-450]

23 p4188 N68-36723 23 p4188 N68-36723 Electrical resistivity and thermal conductivity of W-26Re (GEMP-562) 23 p4153 N68-36814 Thermal conductivity of magnesium stannide (IS-1712) 23 p4154 N68-36847 [NASA-CR-98014] nductance in vacuum 23 p4188 N68-36869 Thermal conductivity to error analysis for insula-[ALO-3632-29] 23 p4189 N68-37024 Interferometric study of nonequilibrium shock reflection process and thermal conductivity in ionizing INASA-CR-97252) 23 p4143 N68-37052 Thermal conductance in thermal insulation candidat [NASA-CR-92329] rements on space suit 23 p4190 N68-37110 Effect of neutron and electron irradiation on low monerature thermal conductivity of germanium and (CEA-R-3387) 23 p4156 N68-37136 Thermodynamic effects on stress wave propagation in viscoelastic solids 24 p4348 N68-37696 Thermal conductivity of uranium dioxide measured as function of density between 800 deg and 2000 deg C [GEAP-5493] 24 p4354 N68-37776 Mixing processes in system of two parallel jets [FTD-HT-23-989-67] 24 p4248 N68-38273 THERMAL CONDUCTIVITY GAGES High temperature parallel plate cell for measuring thermal conductivity of potassium vapors [COO-1352-28] 16 p2665 N68-28185 n of longitudinal com-18 p3076 N68-30364 THERMAL CONVECTION
U. FREE CONVECTION THERMAL CURRENTS
U CONVECTIVE FLOW THERMAL CYCLING TESTS Establishing allowable temperature gradients for tangeten-uranium dioxide fuel elements using experimental cyclic strain data [NASA-TN-D-4279] 03 p0697 N68-14986 Familility of 30 watts per pound roll-up solar array-design of engineering demonstration model with deployability of solected flight configuration and thormal cycling tests of array [NASA-CR-98243] 12 p1817 N68-21879 12 p1817 N68-21879 Equipment for analyzing behavior of sintered aluminum (EUR-3899.E) thormal stress fatigue 13 p2074 N68-23650

Thermal and hydraulic test program for fast sodium cooled reactor fuel element design.
[BNWL-599] 16 p2707 N48-28128

Cermet growth in refr

BMI-18241

16 p2707 N68-28128

17 p2913 N68-28366

ry metal matrices during

d teeting lightweight radio-rable reentry vehicle 19 p3377 1958-31427

Service life of chromium alloy I guide vanes determined from thermal cycling fulgue tests
[ARL/ME-295] 23 p4076 N68-36539 HERMAL DECOMPOSITION U PYROLYSIS THERMAL DEGRADATION Calculation methods and Fortran 4 program for pre-dicting chemical equilibrium composition of degrada-tion produces from phenodic reas-early abhative feat shelds [NASA-CR-90496] 02 p0285 N68-11599 02 p0285 N68-11599 Cooling properties, thermal decomposition, and mudoboiling in ethanol flowing through stainless steel 02 p0288 N68-11728 Accelerated aging effects on polyester urethane rub-bers, and polyether crethane rubber [ERDE-21/M/66] 04 p0525 N68-13077 High temperature degradation of metal ad (DLR-FB-67-49) to determine thormal res used for banded joints 04 p0515 N68-13275 ments on high tempera-oducts 05 p0682 N68-15002 reposition rates of pla-Thermogravimetric mea ture polycarbonate pyrolyt [NASA-CR-91659] sposition rates of pla-treams 07 p0956 N68-1646) Literature as mechanisms in cei (ODC-813.4) survey of thermal degradation 08 p1258 N68-18016 Technical feasibility of preparing chromium metal by thermal decomposition of bisbensone chromium (BM-RI-7112) 10 p1480 N68-19576 Lunar dust degradati removal/prevention concept [NASA-CR-94044] effects and dest 11 p1781 N68-21079 Curing temperature offs of epoxiste polymers [PA-TR-3624] on thermal degrada 11 p1720 N68-21490 Chemical analysis of dep bunization of polyaczylum [ERDE-9/M/66] 11 p1720 N68-21764 d thermal degradation butteries 12 p1837 N68-22565 in oliver size and oliv (NASA-CR-94382) (NASA-CR-94612) 13 p2156 N68-23889 embility, and ther-ne pulymeric films 15 p2490 N68-26874 mogravimetric analysis of Pyrro (NASA-TM-X-40323) eformance multilayer tank in vicinity of NASA-TN-D-47781 20 p3611 N68-33167 Thermal degradational by combined mogravimetric technique (NASA-TM-X-61159) 20 p3512 N68-33303 Thermal degradation applyvinyl fluoride by ove [C&OM-50] iene fluoride und 21 p3708 N68-34374 Stabilization methods to p tion of polyvinyl chloride poly [TRANS-1526] prevent thermal degrada-22 p3827 N68-35518 HERMAL DEFFUSION ic diffusion, and issis con-01 p0122 N68-10161 Sequential delay of (NSJ-TR-79) 01 p0065 N68-10713 Separation (inotopes by then [MLM-1409] of make pass 01 p0026 N442-1 molecular collisions in gr (AROD-5366-14-P) 04 p0595 N68-13312 ing on im NASA-TT-F-1140 06 p0094 NGB-13537 med characteristics of macional 04 p0928 NAB-14049 nion by thermal diffi-der team accumum, that, and be- tempor Heat transfer, and t diffuse bladed inverse [NASA-CR-92591] MLM-1419) 07 peess N66-16356 majored for thermo-philaries 09 p1410 NGS-19127 3AE-M-13/19671

SUL

ex

THE

de

fo

IC

MI

7

11

7

1

i

.

Nonequilibrium thermodynamic study of heat transfer in stationary systems with diffusion and chemi-ical reactions

09 p1451 N68-19351

Effects of form factors which define molecular in-ractions on thermal diffusion in EXP-6 Buckingham model of gas transport (MLM-1467/TR/) 14 p2307 N68-24828 Polarization in solids based on thermal mixing

(CEA-R-3290) 14 p2317 N68-25320 Quantitative separation of argon by thermal diffusion

14 p2219 N68-25607 MLM-1483/TR/1

Mass and thermal diffusion coefficient con-finr hinary helium nitrogen mixture 15 p2576 N68-26380

Thermoelasticity, thermal diffusion, internal friction, and relaxation in glass fibers 15 p2489 N68-26540

Thermal diffusion of impurities in germanium after irradiation and at high temperature [AFCRL-68-0213] 15 p2542 N68-26633 Bifurcation approximation for binary and thermal diffusion coefficients, mixture viscosity, and thermal

conductivity of lamin [NASA-CR-1063] lary layer 15 p2578 N68-26815 Solution for free convection of fluid enclosed between two heated coaxial cylinders

16 p2794 N68-27582 ster program for correction of intensities of liffusion of single crystals (-5725) 16 p2731 N68-28152 (AERE-R-5725)

Study of xeson isotope separation by thermal diffu-[MLM-1491] 17 p2845 N68-29409

ation on progress in separation and e gaseous isotopes and thermal dif-Summary information on purification of stable gaseou

[MLM-1430] 19 p3222 N68-31022 Grain structure model for precipitate dissolution and matrix material diffusion growth [AMMRC-TR-68-12] 21 p3705 N68-34499

Empirical functions used to determine thermal and nation diffusion equation parameters

22 p3920 N68-34858

on in stochastic electric ma heating and diffusion 23 p4137 N68-36058

Thermal and concentration diffusions of helium-krypton 85 mixture 24 p4353 N68-37699

THERMAL DIFFUSIVITY

ium oxycarbides at 100 to Thermal diffusivity of uranium oxycarbides at 100 to 1500 deg C as function of oxygen concentration [BNWL-SA-1494] 07 p1096 N68-16740

Spectroscopic analysis of lead, electron beam mea-erement of thermal diffusivity, and half life determination by decaying pairs [MLM-1405] 07 p0959 N68-17003

Thermal diffusive 325 to 1225 deg K [IS-1713] vities of gold samples measured from 07 p1099 N68-17078

rared radiation method of determining thermal ivity, heat capacity and thermal conductivity of (NASA-TT-F-11453) 08 p1257 N68-17901

Thermal diffusivity measurement, thermoelectric roperties of graphite alloys and compounds, super-onductivity in tungsten films, and gas pump based on

11 p1802 N68-21036 n and diffusivity, and

[BNWL-SA-1796] 20 p3533 N68-33289

Thermal diffusivity and thermal conductivity of (BNWL-704) 22 p3979 N68-35692

THERMAL DISSOCIATION

Thermal dissociation of di solocules, gas ionization, cho omic and polyatomic pe transfer, atomic ex-(FTD-MT-45-525) 01 p0118 N68-10604

Nucleation rate of solid phraction of magnetism carlo [NASA-TT-F-11477] resul dissociation 06 p0793 N68-15857

owth of metal cryst of halides in gas pho (CEA-908-9)) 07 p0954 N68-16252

of thermally dissociated discide gates through su-07 p0987 N68-16857

Kinetics of thermal dissociation of silver nitrite in vacuum and atmospheric conditions [NASA-TT-F-11732] 15 p2403 N68-25668

Reaction mechanism and decomposition rate in thermal dissociation of ammonium aluminum sulfate [NASA-TT-F-11479] 16 p2613 N68-28059

Theoretical kinetics of thermal reactions in gas phase unimolecular reactions, diatomic molecule dissocia-tions, and three body recombinations /approximation 22 p3822 N68-35168

THERMAL EFFECTS
U TEMPERATURE EFFECTS

THERMAL EFFICIENCY
U THERMODYNAMIC EFFICIENCY

THERMAL EMISSION NT THERMIONIC EMISSION

Directional characteristics of lu [NASA-CR-89980] 01 p0132 N68-10002

Reactor cooling studies on vertical motion of two share mixture in round ducts and on thermal crisis with nonuniform thermal flux in simple geometries EURAEC-1912] 07 p1027 N68-16298 [EURAEC-1912]

Reactor cooling studies on critical thermal flux pre-iction and on barmout crisis diction and on burnout crisis [EURAEC-1873] 07 p1027 N68-16410

Radio measurements of planetary nebulae thermal (AD-663168) 07 p1079 N68-16490

Spectral reflectance as ermal emission of conifer NASA-CR-93175] sture stress 08 pl 126 N68-17247

Calculations of nor lunar surface incident [NASA-TM-X-1567] nondiffuse infrared radiation from nt onto unit element above surface 11 p1780 N68-21731

Thermal emission of electrons, and cessum atoms and ions from large, flat, monocrystalline tungsten sur-faces 12 p1953 N68-22119

Thermal emittance from quarter-mil aluminized Kapton space suit material and from sun and protective

14 p2207 N68-25365 [NASA-CR-92133] Heat pipe method for abut emispherical surface emissi olute measurements of total vities

[LA-3834-MS] 16 p2798 N68-28294 Dust insulation model for blanketing of thermal and radio frequency emission in atmosphere of Venus
16 p2771 N68-28328

Radiative heat transfer in non othermal emitting, absorbing, and scatte [NASA-CR-95838] ering media 18 p3186 N68-29924

Thermal regime and radio emission of Mercury 21 p3771 N68-34307 NASA-TM-X-61185]

X ray photon fluctu urements for super-(NASA-TM-X-63331) 21 p3773 N68-34690 Collisionless absorption and netic waves by hot bounded pla d emission of electromag-23 p4115 N68-36325

THERMAL ENERGY

Radiative thermal energy incident effects on pressure-suited man on lunar surface [NASA-TN-D-4243] 02 p0267 N68-11636 02 p0267 N68-11630 nergy calculations for

Thermal, and vibrati neutron star during supe [NASA-TM-X-60773] 04 p0572 N68-12931

Thermal energy storage by utilizing heats of fusion for suitable materials 08 p1121 N68-17798

Asymptotic expansion for re adiative transport of ther-emitting walls mal energy between diff [TR-0158/3240-20/-7] 09 p1447 N68-18447

Index spectro cluster fuel elem (EUR-3736.E) ts in uranium carbide 09 p1374 N68-18534

Energy addition at surfaces of discontinuity in super-sonic flow using three front configurations [RAE-LIB-TRANS-1260] 09 p1267 N68-19058

Intermolecular potential and thermal elastic scatter-11 p1752 N68-20851

ased thermal efficiency and increased Diesel (REPT-1) 14 p2337 N68-24990 User manual for use with computer program to cal-culate neutron cross sections in high energy and ther-

WANE-TME-17511 14 p2318 N68-25427 General principles and theories on direct conversion of chemical, nuclear, thermal, or solar energy into electrical or mechanical power [FTD-MT-64-355] 15 p2390 N68-26786 15 p2390 N68-26786

Energy conversion efficiency of thermal and electric generative fuel cells 17 p2813 N68-28735

Eight static and dynamic energy conversion systems or spacecraft power sources for future missions 17 p2815 N68-28748 es and heat recovery system for thermal ener-

gy in Hanford power reactor [CONF-680204-2] 17 n2916 N68-29074 Radioactive isotopes as so ith applications for spacec and terrestrial uses in SNAP ources of heat and radiation craft power and propulsion

18 p3026 N68-30262 Effect of free flow thermal energy release, from ook wave induced exothermic reactions, on bounda-layer transition in shock tube flow

19 p3384 N68-31014

ts of thorium 230 in thermal energy region [ITEF-546] 21 p3741 N68-34434

Apparatus for measurin electron attachment and at high temperatures 23 p4123 N68-36889 electron swarm drift [ORNL-TM-1444]

THERMAL ENERGY STORAGE

THERMAL EXPANSION

Thermal expansion and strain rate effects on laminated ablative materials [TR-0158/3240-30/-2]

03 p0355 N68-12014 Thermal expansion characteristics of column of ranium oxide fuel pellets under radial temperature radients

GEAP-5284] 03 p0381 N68-12733 X ray reflection technique for measuring low tem-erature thermal expansion coefficient of sodium

[COO-623-120] 09 p1409 N68-19075

Fabrication and measurement of thermal expansion of conductivity, and tensile strength of molybdenum duranium oxide fuel types 10 p1554 N68-19595 [GEMP-545] Thermal expan in of tetrahedrally bonded solids at

(IS-T-114) 10 p1578 N68-20030

Irradiation effects on initial gap measured on urani-um oxide fuel elements sheathed in thick tubes [CEA-R-3358] 12 p1909 N68-22760 n measurements of yttrium,

Linear thermal expan scandium, and gadoliniu [IS-T-212] 12 p1895 N68-22828 Thermal-stress analysis of pyro [APL-TG-980] oceram radomes 16 p2775 N68-27040

Anomalous low temperature thermal expansion behavior in dilute iron-transition metal alloy solid solu-18 p3086 N68-29620

Coefficient of thermal expansion of construction aterials at low temperatures - evaluation of austenitic dipearitic steels, aluminum and copper alloys, ronzes, and brasses

20 p3498 N68-32674 Melting point, thermal expansion and diffusivity, and actrical resistivity of promethium sesquioxide BNWL-SA-1796] 20 p3533 N68-33289 BNWL-SA-1796 Approximative calculations for plasma expansions in aval nozzles

Laval nozzles [DLR-FB-68-36, PT. 2] 22 p3941 N68-35112

Thermal expansions and phase transformations in nic crystals 24 p4211 N68-37528

re errors in m ing diameter of gas turbine engine and compressor rotors (FTD-HT-23-992-67) 24 p4337 N68-38270

THERMAL PATIGUE

Thermodynamic parameters and equations for physical conditions affecting fatigue strength of comple 12 p1888 N68-22396

Equipment for analyzing behavior of sintered aluminum (EUR-3899.E) thermal stress fatigue m powder 13 p2074 N68-23650

Annotated bibliography on thermal fatigue [NASA-CR-94605] 13 p2161 N68-23652 THERMAL INSTABILITY

Neutron activation spectrum for thermal neutron energy variations in reactor cells [KR-103] 03 p0374 N68-12431

NDEX nvernion nto elec-

-26786 electric -28735 systems

-28748 al ener--29074 distion pulsion

, from 31014 m 230 34434

nt and res 36889

-30262

ts ce 12014 nn of 12733

tem 9075 maion 9595 ids at

0U30 Fati-2760 2828

620

674 and 289 is in 112

528 tur-270 ez-

i in

jue 50 52

196

on 31

Thermodynamic stabilities of liquid-gas two phase [RT/ING/68/1, PT. 1] 14 p2369 N68-24480

Equations of motion and boundary conditions for thermal instability of fluid layers heated from below [RM-416] 19 p3263 N68-31236

Primordial structure and instability hypotheses for explaining origin of large-scale structures in universe 21 p3767 N68-34208

Role of thermal instability in galaxy formation 21 p3768 N68-34210

THERMAL INSULATION

Spacecraft thermostatic fin thermal control system design analysis using Fortran computer program [NASA-CR-89989] 01 p0147 N68-10081 um and multilayer Mylar lant tank 01 p0138 N68-10328

Voyager spacecraft thermal insulation system development and testing [NASA-CR-90337] 02 p0274 N68-11264 Preparation of low density suffer foam. (CRREL-TR-206) 03 n0357 N68-12498

Thermal insulation for cryogenic containers, and TRG-1455/R/X/1 04 p0593 N68-12898

rmal control coatings for System requirements for the [TR-0158/3250-20/-2] 04 p0593 N68-12954

Overheating prevention of small instrument package when placed in high temperature environment - com-parision of thermoelectric cooling with passive insulation methods (RAE-TR-67034)

04 p0596 N68-13513 insulation requirements of cryogenic fuel tanks [DGRR/WGLR PAPER-66-043]

05 p0752 N68-13966 Degradation model of solar radiation damage to opti-cal properties of zinc oxide pigments used for spacecraft thermal control coatings [NASA-CR-61429] 05 p0753 N68-14171

05 p0753 N68-14171 Thermal insulating effects for multilayered metallic foil for blowdown type hypersonic wind tunnel [MTB-010050] 05 p0644 N68-14649

Design and performance of cryogenic insulation materials for spacecraft cryogenic storage tanks [NASA-TM-X-53670] 05 p0750 N68-14651

Cryogenic insulation for prolonged storage of liquid ydrogen in space flights

05 p0756 N68-14652

Thermal design of aluminized Mylar insulation system for cryogenic storage tanks - helium purging 05 p0756 N68-14653 uctural designs for

Cryogenic insulation a spacecraft using liquid propell 05 p0750 N68-14654

Manufacturing technology for application of high performance multilayer insulation systems to flight type cryogenic tanks .05 p0666 N68-14655 High performance multilayer insulation and micrometeoroid protection system for cryogenic tanks in outer space

05 p0668 N68-14656 Insulation system for nuclear ground test module -NERVA and Rover project

05 p0750 N68-14657 tion for spacecraft

05 p0756 N68-14658 Long term vacuum storage test and vibration effects analysis of multilayer super insulation blankets [NASA-CR-92589] 06 p0850 N68-15368

Performance test evaluation of foam thermal insula-

(REPT.-470) 06 p0857 N68-15459 Diffusion coefficients, outgassing studies, and cor-relation of complete system thermal model computer program predictions with 82.6 inch tank test data [NASA-CR-61456] 06 p0926 N68-15757

Mark 5 feel bundle design and fabrication to include bbed cladding turbulence promoters, lateral-type feel of spacers, thin thermal liners, and bimetallic process the loiests. rod spacers, the tube joints (GEAP-5408)

97 pl032 N68-17036 Equilibrium temperatures for solar cell configura-ons bunded to, but thermally insulated from spinning

[NASA-CR-73181] 07 p0941 N68-17084 Required surface area and pressure gradients in con-mer tube banks, regenerative and by pass lance, air

cooling, and sizing of air ejectors for condenser thermal design criteria [NEL-270] 07 p1100 N68-17142 07 p1100 N68-17142

er subscale rocket en-ation methods, nozzle essilation, and propel-

[NASA-CR-54869] 07 p1075 N68-17198 ng multilayer radiatio on of self shields for cryogenic ste (NASA-TN-D-4375)

08 p1258 N68-18046 protecting properties of

09 p1288 N68-18752 Spray deposition of the for high temperature ins powder on tungsten foil in radioisotope power

systems (TE-4059-77-68) 09 p1348 N68-19052 Thermal insulationous cones [NAL-TR-145] for rocket norzies and 10 p1541 N68-19566

Design, manufact prefabricated, vacuum 70-inch diam cryogenic (NASA-CR-61675) nd application of ed, insulation panels to 10 p1533 N68-19635

Thermal control system for balloon flight packages [NCAR-TN-32] 10 p1614 N68-20336 ulation for radioisotope Vacuum foil type therm

ALO-3634-6) 11 p1630 N68-21309 Thermal stabi minum insulation [ALO-3632-23] uctivity tests for alu 12 p1983 N68-22549

Fibrous type th tion for radioisotope [ALO-3633-5] 12 p1983 N68-22550

Passive thermal cou rigid and flexible extravehicular space end [AMRL-TR-67-128] 13 p2005 N68-23412 influence of normal tivity of insulators and f [CNEA-201] s on thermal conduc-

netic insulators 14 p2375 N68-25588 ne foam at cryogen t for long term storag of cryogenic propellant (NASA-TM-X-52332)

15 p2488 N68-26274 Three refractory fibers for insu nd allicon germanium radiois alation of lead telluride

ALO-3633-7, V. 1] 16 p2687 N68-27316 vity and open circuit volt-ials exposed to experimengon environment 16 p2687 N68-27317 tal insulation formula [ALO-3633-7, V. 2]

Goldized Mylar or Ka planetary vehicle therma [NASA-CR-95253] and other materials for ation systems 16 p2772 N68-27722

INASA-CR-732191 17 p2890 N68-28689

Thermophysical propelators measured at cryoge [NASA-TM-X-60999] of some multilayer insu peratures 17 p2986 N68-28802 Shrinkage, thermal conductivity, porosity, and sin-tering of aluminum oxide for thermal insulation in

ALQ-3633-11 17 p2904 N68-29115 Analytical method for fit lated OGO experiment pack data and without solar simul [NASA-TN-D-4644] ng heat balance of insu-es from thermal stability 17 p2870 N68-29478

of Ariel 3 autoilite 18 p3168 N68-29645 foil thermal insulation sotope powersystems 18 p3006 N68-30677 High temperature tungster fabricated and tested for rad [ALO-3634-8]

Tests on supersonic tion to insure thermal [ARC-CP-976] 19 p3198 N68-31205

Effective thermal in characteristics of in INASA-CR-732441

19 p3386 N68-31671 Thermal insulation development to reduce heat

NASA-CR-72413) 19 p3360 N68-31939 Spacecraft rocket engine de utilica fabric/motybde bric/tantalum foil, and fin n foil layer, ce 20 p3578 N68-33164 Thermal degradation of high performance multilayer essistion on liquid hydrogen tank in vicinity of

NASA-TN-D-4778] 20 p3611 N68-33167 Summary results on si estitial materials for the of low conductance in-

NASA-CR-732481 21 p3788 N68-34080 ion, and thermal shock in Hastelloy 22 p3979 N68-35768 (NASA-TM-X-61277)

Thermal entry length erature sensor placement in tubular rad [NASA-CR-1200]

23 p4061 N68-36530 error analysis for insule-IALO-3632-291 23 p4189 N68-37024

Thermal conducts thermal imulation ca [NASA-CR-92329] ements on space suit 23 p4190 N68-37110

Heat flow through pipe p tration into multilayer insulation [NASA-CR-72368] 24 p4354 N68-37852

THERMAL NEUTBONS

Measurement of high ene emitted after capture of therm potassium 46, vs 60 nuclei [ZFK-PHA-24] energy gamms radiation ermal neutrons by odd-od 6, vanadium 52, and cobs 01 p0108 N68-10481

Radiation damage in suc ar reactor ceramic materi

01 p0082 N68-10803 Activated cobult de al neutron flux (JUL-495-RX) 01 p0115 N68-10915

Energy spectra of long range neutron fission of uranium 235 {INR-822/IA/PL} ies from thermal 02 p0245 N68-11441

a 238 neutron capture 02 p0238 N68-11497

ing from light |BNWL-345| 02 p0245 N68-11498

al neutron scattering from 02 p0250 N68-11896

nod for measuring prompt mal neutron induced fusion

of uranium and 03 p0389 N68-12332

03 p0374 N68-12431 (EUR-3556.F) no rate in thin layer of uranium carbide 03 p0314 N68-12467

comparative studies on tron spectra, and pre-normali 03 p0377 N68-12578 [GA-8114]

04 #0536 NAE-12841

county species i 04 p0537 N68-12846

-04 p0561 N68-13719

04 p0540 N68-13721 ot pusts redisplaceds 04 pusts ress-13723

Cross section

WANL-TME-1640 04 p0551 N68-13837

oppressimation of ther-cross sections 05 p0705 N68-14073 ranks 234 and 235 (AERE-R-5336)

05 p0692 N68-14181 Project study current protes neutron facility [AliCL-2750] tion promises the

05 pas42 Neb-14338 BNL-11680] to 101 05 p0713 N48-14493

SUL

THE

at [II

experiments, and property measurements with second core load of fast thermal reactor [KFK-592] Single crystal neutron spectrometer with time of flight technique (KFKI-8/1967) 05 p0662 N68-14537 Monte Carlo calculations using albedo concept for determining subcadmium and epicadmium neutron fluxes, thermal neutron fluxes, and fast neutron dose rutes along center lie [ORNL-4]47] 05 p0721 N68-14983 Fast and thermal neutron flux measurements in test cavity outside HB-6 beam port in Plum Brook reactor using sulfur pellets and gold foils [NASA-TM-X-1497] 06 p0875 N68-15643 Average number and energy of gamma rays emitted as function of fragment mass in uranium 235 thermal neutron induced fission 06 p0886 N68-15887 [JUL-331-NP] Neutron spectrum effect on determination of Wigner doses in graphit [CEA-R-3226] 07 p1024 N68-16176 Reactor physics experimental and subcritical assemblies nts in thermal neutron [PB-175681] 07 p1024 N68-16209 Measuring thermal neutron heterogeneous system arameters, developing reactor physics experiments, nd uncertainties in cell and lattice parameters 07 p1025 N68-16215 ions of spectral indexes Transport theoretical calcula of thermal and epithermal neutr on spectra 07 p1025 N68-16216 Thermal ph flux distribution in water (NSJ-TR-93) 07 p1026 N68-16226 on transport of flusion neutrons through atmosphere (ORNL-TM-1819) 07 p1041 N68-16360 Exact solution for energy transport equation for thermal ture discontinuity [RM-5300-PR] 07 p1043 N68-16488 Computation of therm ater moderated reactors 07 p1030 N68-16607 [RCN-62] Compilation of thermal fission yields for U-235, U-233, Pu-239, and Pu-241 for use in nuclear fuel burnup [GEAP-5356] 07 pl047 N68-16637 FORTRAN 4 computer program for computing ranium and plutonium nuclear fuel burnup from man pectrometric measurements of uranium, plutonium 07 p1047 N68-16638 Thermal neutron beam densities measurement by elium proportional counter, and correction of gold ill activation method for determining neutron beam IRISO-1441 07 p1048 N68-16658 Space and energy distribution of thermal neutrons in cylindrical heterogeneous reactor cell (UJV-1836) 07 p1032 N68-16883 Relative cross section for thermal and resonance eutrons in energy spectra of long range alpha particles mitted in thermal neutron fission of uranum 235 INR-817/IA/PL] 07 p1054 N68-17120 emitted in thermal [INR-817/IA/PL] Integral measurements of epithermal neutron cap-ture to fission cross section ratios of uranium 233 and 235 irradiated with cobalt monitors in high flux facili-[WAPD-TM-613] 08 p1201 N68-17240 Compilation of abstracts fre proceedings on fast and thermal reacto [CONF-670431] 08 pl racts from conference 08 p1203 N68-17320 Continual fuel exch at central zone m fuel reactor with flat central (IBK-532) 08 p1205 N68-17667 Measurement of decay of thermal neutrons in water poisoned with non-1/v neutron absorber cadmium [AE-309] 08 p1205 N66-17675 ence in reactor ir-08 p1226 N68-17991 Fluxes and doses of filtered gamma and neutron radiation at horizontal experimental channel outlets in IRT reactors

g of thermal neutrons from

09 p1391 N68-18882

08 p1206 N68-17993

Thermal neutron propagation in cylindrical duct cooled by water [CEA-R-3196] 10 p1562 N68-19596 Diffusion of thermal neutrons in heterogeneous gra-hite cadmium assemblies studied by pulsed neutron surce technique DP-1122) 10 p1566 N68-19733 B beta current in core neutron flux detector [BNWL-395] 10 p1530 N68-19971 Digital compu or calculating neutron cross (ITF-67-45) 10 p1569 N68-19992 FORTRAN CO program for calculating [LA-3823] 11 p1741 N68-21172 mal neutron flux 12 p1873 N68-22383 alloy thermocouples ur [NASA-TT-F-11623] Distribution of fuel conc prescribed flux of there ation of active zones for neutrons and related cometries 12 p1907 N68-22584 um test reactor 100 beam hole using slow neutron (SRRC-21/67) Lattice physics research - angular thermal neutron (GA-8304) 12 p1934 N68-22690 Yields from thermal ar Yields from thermal and fast neutron induced fission uranium 233 and 235, and plutonium 239 and 241 as Il as fast neutron fission of thorium 232 and uranium [AERE-R-5096] 13 p2117 N68-23543 Neutron thermalization in graphite-water system at large temperature gradie [AERE-TRANS-1085] 13 p2107 N68-23559 Neutron diffusion paras rs in ANNA reactor gra-IBJ-853/IXA/PR] 13 p2107 N68-23759 Theory for triaxial and tin spectrometer for thermal neutr [EUR-3910.D] ne-of-flight polarization 14 p2254 N68-24487 Transition of 341 keV accompanying capture of thermal neutron by Ti 48 [ITEF-52] Thermal cross sections an ross sections of ytterbium is d paramagnetic scattering pes 14 p2305 N68-24718 (BNL-12263) nce of Battelle rot ing crystal slow neutron spectrometer [BNWL-SA-1536] 14 p2256 N68-24735 Thermal neutron fi nent in irradiation (CEA-R-3338) 14 p2308 N68-24840 capture neutron cross section estimation for (CONF-680307-18) 14 p2311 N68-25050 Thermal neutron scattering cross section data -[JAERI-4043] 14 p2312 N68-25064 Slow neutron scattering and rotational dynamics of olecules 14 p2313 N68-25080 Relative probabilities for fo states during radiation capture of [FEI-79] formation of isomeric 14 p2313 N68-25136 Neutron and absorpti resonance scattering for hol (BNL-12269) cross sections and 14 p2314 N68-25156 Tests of borazine and bo istors for slew neutrons [CNEA-206] de derivatives as scintil-14 p2220 N68-25652 density and chemical com-ng thermal neutron fluxes 15 p2513 N68-25813 In-plant measurement of deposition of hydrocarbons usin [EUR-3624.F] [DOC.-86] Identification and yield of p neutron fission of uranium 235 [USNRDL-TR-68-25] lium 117 in thermal 15 p2520 N68-26446 rving nuclear force by Determining parity-nonconst capture of polarized thermal 8-1 (RISO-167) 15 p2521 N68-26518 Nuclear data for p isotopes for fast and (IA-1152) 15 p2522 N68-26545 Identification and yield of ga neutron fusion of uranium 233 (USNRDL-TR-68-35) on isotope in thermal 15 p2524 N68-26765 al neutron cross sec-16 p2731 N68-28166

Thermal buckling and neutron reaction rates in study of lattice parameters after fuel burnup in heavy water 16 p2708 N68-28167 On-line digital transferometer for handling white oise problems arising from use of thermal neutron de-octor in pulsed regime tector in pulsed [CEA-R-3241] 16 p2665 N68-28291 attering in imperfect fer-17 p2952 N68-28395 Pulsed source method for determining vacancy ef-fect in moderator materials on thermal neutron diffu-sion constant, and evaluation of diffusion cooling ef-[JUL-518-RG] 17 p2913 N68-28428 Moderator material vacancy effects on thermal autron diffusion constant examined by pulsed source 17 p2913 N68-28429 Pulsed source and Willers method used in calculating diffusion parameters from decaying neutron field 17 p2983 N68-28430 Fission, neutron flux and capture, and prediction of lutonium 238 production using neutron cross section data [DP-MS-67-118] 17 p2931 N68-28935 Neutron thermalization, scattering, cross sectra, and related bibliography pectra, and related bibliography 17 p2935 N68-29160 Tissue irradiated with protons and thermal/fast eutrons to study induced radioactive isotope production in astronauts [NASA-CR-95722] 17 p2827 N68-29371 Epithermal neutron spectra and cross sections studied by means of thin resonance foils
[FTD-HT-23-821-67] 18 p3114 N68-30142 molecular dynamics of (EUR-4037.1) 19 p3329 N68-31383 Nuclear fission of ura nd fast neutrons to de m 235 by thermal neutrons nine kinetic energy of fast [ANL-TRANS-606] 19 p3332 N68-31577 Measurement of low energy part of alpha particle sectrom emitted in thermal neutron fusion of U 235 19 p3333 N68-31663 Description of SOFIE 3 program for determining volume of subsurface neutron probe [RISO-M-637] 19 p3335 N68-31886 Computer program to calculate thermal neutron dif-fusion length and group cross sections (LA-3893) 19 p3337 N68-32158 cs of hydrogenous compou 20 p3417 N68-32483 ctrometer designed for studies of inelasti-EPT.-898/II/PS] Integral method to determine energy departments of thermal entron spectra and integral parameters of thermal elitosis and thermal reproduction factors 21 p3734 N68-33749 [REPT.-898/IL/PS] 21 p3725 N68-33891 Evaluation of boron 10/n on, alpha/ cross section and branching ratio 21 p3740 N6B-34319 Helium 3 then 23 p4061 N68-36466 in water at 24 deg C 23 p4135 N68-37262 FORTRAN reactor cell co thermal neutron flux fine stru (BNWL-482) de JASON for calculating 24 p4294 N68-37/77 rmal neutron inelastic ingle crystals 24 p4313 N68-37778 (INR-P-898/IL/PS) pottrum measurements uranium 235 24 p4313 N68-37779 of formation of isomeric re of thermal neutrons 24 p4315 N68-37879 Statistical probabi states during radiation [ANL-TRANS-644] Reactor core th n flux estimation using 24 p4296 N68-37889

AERE 4-56271

s in study avy water 68-28167

INDEX

ng white SE-28291 rfect fer-

8-28395 ancy ef-on diffu-oling ef-8-28428 thermal

8-28429 id 8-28430 ction of

8-28935

section, l-29160 mai/fast produc--29371 one stu-

-30142 he:mal experi--30207 mics of 31383

utrons of fast 31577 article 235 31663 mining

31586 on dif-32158 ounds 2483 lastic single

3290 ndent ermal 3749 ional 3891

eric 879 THERMAL NOISE

Contribution of thermal noise to line width of osephson radiation from superconducting point con-(NASA-CR-93734) 10 p1557 N68-19578 Thermal noise in space charge limited current flow in solid state devices 11 p1696 N68-20651

Distorted wave Born approximation of inelastic elec-tron scattering involving Coulomb multipole transi-tions, and maser oscillator thermal noise analysis 12 p1883 N68-22120

Noise in metal oxide and space charge limited diodes

20 p3453 N68-33466

Junction transistor noise at high injection levels 21 p3667 N68-33896

Thermal and shot noise in quiescent plasma probes at or near plasma frequencies [IPPJ-71] 22 p3944 N68-35643 for determining thermal

Canonical field equation spine in spin-phonon syste (NASA-TM-X-63366) 23 p4154 N68-36923 THERMAL PLASMAS

Bibliography on spectroscopy of interest to high tem-perature chemistry and physics, and reactions between gases and condensed phases 01 p0118 N68-10592

and diagnostic techniques in hot plasma reses [INR-P-846/XVIII/PP]

09 p1402 N68-18942 Scattering of test particles by waves in plasmas con-taining suprathermal particles described by Fokker Planck equation including wave-particle interactions -particle interactions 12 p1944 N68-21962

Laser induced breakdow chanism in belium, arer pressure 14 p2321 N68-24433

Microwave cavity resonator used in study of gaseous electron attachment to carbon and sulfur fluorides and nitrous oxide

15 p2517 N68-26164 Design considerations and preliminary tests of diode for electron bombardment system of thermal plasma

15 p2533 N68-26732 [TID-24334]

Simultaneous excitation of electron and ion plasma diode [LOI-68-5] 19 p3337 N68-30905 Wave propagation in cold plasmas and thermal

19 m3339 N68-31231 ition to turbulence in

Periodic pulling and trans systems with discrete modes [BN-542] 19 p3340 N68-31430

Linearized equations and iteration used to solve propagation in waveguides with warm plasma 22 p3938 N68-34846 Radiation patterns for electric dipole in warm nisotropic plasma

22 p3939 N68-34957

Approximative solutions for shock wave parameters of thermal plasmas [DLR-FB-68-37, PT. 3] 22 p3941 N68-35097

Approximative calculations for thermodynamic dis-sociation and ionization functions in thermal plasma [DLR-FB-68-35, PT. 1] 22 p3941 N68-35113

Electron attachment of electrophilic gases for high temperature plasma queno [NASA-CR-66568] 22 p3943 N68-35358

Approximate method for calculating transport coef-ficients of thermal plasmas [DLR-FB-68-38, PT. 4]

22 p3944 N68-35569 Microinstabilities and diffusion processes in thermal 23 p4139 N68-36265

Momentum transfer solutions to Boltzmann transport equations for gas mixture and plasmas [NASA-CR-97148] 23 p4139 N68-36317

Electrostatic wave instabilities in thermal cesium plasma penetrated by lithium ion beam [SRRC-CR-68-33] 23 p4140 N68-36521

Suprathermal X ray bremastrahlung from proton electron collisions in galactic and solar cosmic radia-

[NASA-TM-X-63378] 24 p4314 N68-37856 THERMAL POWER
U TURBOGENERATORS

THERMAL PROPERTIES

U. THERMODYNAMIC PROPERTIES

THERMAL PROTECTION

nal protective textiles 02 p0224 N68-11131 High-intensity their (NADC-MR-6715) Glossery of terminology for thermal protection in high temperature environments of aerospace vehicle

[NASA-CR-92590] 06 p0926 N68-15621 Heat transfer, and thermal control characteristics of diffuse bladed louver system for spacecraft [NASA-CR-92591] 06 p0928 N68-16049

Thermal testing of two stage radiant cooler for day-night high resolution infrared radiometer [NASA-CR-93291] OS p1177 N68-17435

Effects of low density, temperature, proton radia-tion, and electromagnetic radiation on titanium oxide thermal control material

10 p1541 N68-19604 Hypervelocity heat protection, surface heat shield-ing, and internal temperature rise of Teflon, phenolic nylon, epoxy resin in glass honeycomb, and silicone

[NASA-TM-X-61088] 13 p2167 N68-23395 Aircrew protective methods for improving thermal derance and physiological responses to hot hamid en-14 n2205 N68-24879

Ablative thermal protection system for X-15 aircraft operating at hypersonic speeds [NASA-CR-82003] 15 m2383 N68-25717

Flight test and performance analysis of abiative thermal protection system for X-15A-2 aircraft [NASA-CR-82004] 15 p2384 N68-25886

Operational process manual for ablative thermal pro-tection system of X-15A-2 aircraft [NASA-CR-96000] 15 p2384 N68-25889

Assessing cryogenic fluid requirements and storage methods for manned earth orbital and Mars flyby mis-sions, and parametric data on thermal protection INASA-TN-D-46191 17 p2809 N68-28420

Attachment methods for thermal control composite system comprised of optical solar reflectors and mul-tilayer insulation to minimize heating from incident NASA-CR-732191 17 p2890 N68-28689

AIMP-D spacecraft thermal design and mission NASA-TM-X-632821 18 p3170 N68-30070

Design, development, and testing lightweight radia-tive heat shield for maneuverable reentry vehicle [GDC-ERR-AN-1133] 19 p3377 N68-31427

Temperature control design, instrumentation, and performance characteristics of Marinor 5 spacecraft [NASA-CR-96708] 21 p3777 N68-34070 ge coatings for thermal

Development of phase control of spacecraft surf [NASA-CR-66695] 23 p4185 N68-36113 NT PHONON BEAMS

Heat transfer by both gray radiation and conduction in Oseen-like free mixing flow [PIBAL-1005] 01 p0151 N68-10388

Chorisoretinal burn thresholds for rabbits were determined from 66 various combinations of thermal radiation exposure duration and retinal image disameters (AD-659146) 01 p0013 N68-10683

Thermal radiative and convective heat transfer in turbulent boundary layer of high temperature gas to flat plate 02 p0284 N68-11560

Thermal behavior of rocks on lunar surface during lunation and eclipse (D1-82-0641) 04 p0573 N68-13025

Local lunar crater density calculated from geometrical model of crater effects on full moon directionality of lunar thermal radiation [NASA-CR-61413] 04 p0577 N68-13660 04 p0577 N68-13660

al infrared mapping and non-te for reliability screening 06 p0816 N68-[5692 Effectiveness of thermal infi destructive electronic tests for [NELC-1512] tere, and thermal radii

Magnetosphere, innosphere, of planet Jupiter [NASA-CR-92559] 06 p0914 N68-15973 Black, and visible thermal radiation measuremen on magnesium flames ISL-5/66) 07 p1094 N68-161

07 p1094 N68-16158 Uncertainty analysis for designing calorimetric ex-eriments, and equations for measuring properties of

Planetary radiation NASA-TN-D-43541 07 p0997 N68-16529 last interchange within orption 07 p1060 N68-16604 Predicted full scale exhaust plume length and ther-mal radiation flux at proximate surfaces from scale model data [NASA-CR-91270] 08 p1203 N68-17314

Determining equation of state of parallin by therma easure measurement during heating by laser radiation

08 p1255 N68-17544

unitrium phenomena in air subjected to large amount 09 p1446 N68-18307

Thermal radiation effects on oundary layer of absorbing an laminer free convection of non-absorbing gas 10 p1612 N68-19847

radiative transfer in ng fluxes 10 p1569 N68-19979 Approximation models isotropic and Rayleigh scatte [RM-5537-PR]

n radiation with applica-

10 p1587 N68-20180 Mathematical model chavior of ESRO I satell determining thermal der stimulus of external

heat radiation (ESRO-TN-20/ESTEC/) 10 pi614 N68-20241 High energy countic ray spectrum interaction with sicrowave thermal radiation for production of

NASA-TM-X-631451 10 p1571 N68-20484 Emission and refle mal radiation propert [NASA-TT-F-497] ats of surface ther

11 p1805 N68-21536 Thermal radiation propage suit materials [NASA-CR-92087] operties of Lexan and other

12 p1829 N68-22779 Scattering in radiant he [PB-177585T] lange processes 13 p2168 N68-23496

Absorption characteristics of infrared, laser, and thermal radiation in planetary atmospheres [NASA-CR-94659] 13 p2064 N68-24137

14 p2200 N68-24887

Radiation effect on lami flat plate in gas medium 15 p2574 N68-26007

Intrinsic thermal radiation of moon by photoconductive cell telescopes with optical acoustic receiver [FTD-MT-67-25] 16 p2754 N68-27058

Radiant heat flow of gas volume with arbitrary arameter distribution outside nourle 16 p2793 N68-27252

Thickness and space environment simulation on thermal radiation properties of high emittance ceramic and inorganic contings for space uses [NASA-Thi-X-59389] 16 p2793 N68-27441

fer data, radiative pro-tromagnetic theory Thermal radiation heat tra perties of black bodies, and el NASA-SP-1641 17 p.2984 N68-28530

State-of-the-art survey of low pressure and therm distion environment space simulation test chamber 17 p2868 N68-290 Absorption and scattering of thermal radiation by aid of small particles

18 p3128 N68-29758

utation of radiant power incident upon earthorbiting satellit ICNES-NT-61 18 p3159 N68-30146

Thermal radi a energy transfer in solids at low 19 p3384 N68-31212

Thermal radiation in metals as related to optical and electrical properties [RE-335] 19 p3354 N68-31366

tion and electromagnetic wave ort of energy and momentum by 20 p3555 NAA-32706

Radiation heat flux from high [AEDC-TR-68-146] 20 p3611 N68-33260 ne mapping of grow 20 p3473 N64-33400

20 p3481 NSS-33402 in to local therm

21 p3634 N68-33924 State of emission of thermal radiation from nuclear same determined at low altitude, and relationship to

21 p3643 N68-34236

SUB

CHI

ïБ

(EL

(F)

THE

7

10

steady radiation gas dyna [MIT-DSR-76052] 21 p3796 N68-34715 Thermal radiation hyd cs in high temperature air from nuclear exp (LMSC-3-27-67-1, V. 5) 22 p3978 N68-35338 Thermal radiative and e um sulfide solar cell at lo rical properties of cade and temperatures [NASA-TN-D-4818] 22 p3808 N68-35467 rial radiation in space Simulation of solar and to [ESRO-TM-116/ESTEC/] 23 p4041 N68-37141 Pyrometric methods for a ctual temperature mea-bermal radiation 24 p4353 N68-37611 [NASA-TT-F-11932] Airborne filter wed earth spectral radient of lava in it to 16 microns ([NASA-TM-X-63375] rometer recording of of desert terrain and 24 p4251 N68-37874 Heat dissipation of re ebicles by radiation and [FTD-HT-23-590-67] 24 p4356 N68-38225 THERMAL RADIO EMISSION

U RADIO EMISSION THERMAL REACTORS of natural uranium con-s of thermal reactors 21 p3723 N68-33991 Program for assessment of imption of different types of th THERMAL RESISTANCE Thermal contact con function of pressure, and piotted as function of applied [NASA-TM-X-60588] ol p0151 N68-10508 Dry heat resistance of Bacillus subtilis var. Niger spores on stainless steel strips, between mated steel sur-faces, and relationship of water activity of spores on NASA-CR-90097] 01 p0012 N68-10628 Thermal and electrical resistivities of rhenium at cryogenic temperatures and role of dissolution in cor-rusion assisted cracking of titanium alloys resion amisted [PB-174294] um alloys 04 p0399 N68-13065 Thermal and electrical resistivities of rhenium at cryogenic temperatures 04 p0556 N68-13066 Surface roughness and waviness effects on thermal resistance between contacting solids [NASA-CR-91440] 04 p0594 N68-13170 Thermal resistance of heat flow through two dimensional symmetrical, and eccentric constrictions [NASA-CR-92574] 06 p0927 N68-15872 ents of Bacillus subtilis Dry heat resistance measures var. Niger in and on various mat [NASA-CR-92720] 07 p0941 N68-16109 Preparation, and evaluation of polyimide sulfone resins, graphite-silica reinforced polyamide resins, and resin resistance in FLOX- methane, and fluorine lipidrugum fuels [NASA-CR-72022] 09 p1355 N68-18535 09 p1355 N68-18535 Dry heat resistance of b cterial spores from sterilization and assembly laboratory [NASA-CR-94340] 12 p1824 N68-22532 thermal conductivity in Electronic compo 13 p2132 N68-23306 [ECOM-2932] Dry hest resistance of Bacillus spores lyophilized on ter paper, dry heat destruction of spores embedded in paxy plastic, and rehydration and water effects on [NASA-CR-94681] 14 p2195 N68-24369 Fluid relaxation on itive to pressure ure changes for tis and temperature (HDL-TR-1381) er application 16 p2661 N68-27395 ve system and sintered slip 16 p2691 N68-27774 Color-change and sethods of determining inductivity measurement est resistance of polyvinyl chloride [NASA-TT-F-11758] 17 p2903 N68-28425 Vulcanization of viton a agents to increase elastomer [D-MAT-150] analysis of vulcanizing hermal stability 18 p3098 N68-29746

in bolted flange join [NASA-CR-73248] ture materials [NBS-TN-447] THERMAL SHOCK NASA-CR-751841 R-7525] ELDO/5P/64/19] lumped parame of planetary lan [R-68-2, V. 3] Thermal and space Gemini extravehicula [NASA-CR-65935] Verification of n Thermal math termal vacuum THERMAL STABILITY Thermal and hydra cores cooled by no (RT/ING/67/2) TR-2] (RIA-67-2254) Synthesis and charac mally stable ferrofluids [NASA-CR-91060] fuels [BMI-1789] 30 percent ammoniu [NASA-CR-91438]

mmary results on s tial materials for th ts on studies of low conductance in-for thermal isolation and application ties of thermally [ARL-67-0178] stabilized cascade arcs 05 p0724 N68-14334 21 p3788 N68-34080 testing of heat pipe apudies of high tempera-06 p0768 N68-15338 TG-922) 21 p3709 N68-34664 on reaction of tungsten trioxide analyzed are range from 700 deg to 900 deg C 06 p0787 N68-15415 of heat-resistant fer-23 p4081 N68-36370 Ultraviolet irradiati mal control zinc coat [NASA-CR-61502] 07 p1011 N68-16124 ot press fabric physical proper ation effects on phase equilibrium rties of refractory metal carbide-gra-In situ reflectometer for al control coatings exp roton, and ultraviolet env ermining stability of ther-09 p1353 N68-19220 NASA-CR-73160) 07 p1099 N68-16904 Two dimensional dyn xirymmetric problem ock applied along or media of constant to l powder burning rate in 08 p1256 N68-17709 11 p1799 N68-21604 licting temperature and ry metal phases 09 p1351 N68-18419 Thermal shock problems in thermoelastic cylinders and ap tually coupled field equations ermoviscoelastic and res studied with mucomposition stability of ref [AFML-TR-67-397] 15 p2567 N68-25899 Thermal stability rmoelasticity and dy to thermal shock lar coolant chann [AERE-R-5601] ic response of spherical 09 p1376 N68-18897 19 p3375 N68-31058 ty, and wettability stuand equilibrium oxygen irconia and thoria 20 p3512 N68-33154 Thermal shock res of oxygen-deficient 09 p1298 N68-19258 Stability, and heat of fo n, and thermal shock qualities of zirconium c [NASA-TM-X-61277] and its hydrates [NASA-TT-F-11619] 09 p1300 N68-19483 22 p3979 N68-35768 Thermal stability of eth Shock effects in iron meteorit crystallographic alterations in kan rites with emphasis on (NRL-6674) 10 p1492 N68-20251 23 p4166 N68-36242 Evaluation of co rials for use as gaskets THERMAL SIMULATION in high pressure and [AFCRL-67-0592] ature environments 11 p1718 N68-20828 aracteristics, appl thermal propulsion ns and technology of isotopic propulsion en-Thermal stabilities of ad cadmium chelates ric copper, nickel, zinc, 05 p0691 N68-14026 12 p1833 N68-22176 ermal analysis and test effects for Technology bility Spacecraft /TFS/, and three models using ed parameter approach to simulate configurations ty of astronomical mir-n alloy with chromium [NASA-TT-F-11659] 12 p1889 N68-22401 07 p1086 N68-16874 Thermal stability a minum insulations [ALO-3632-23] ctivity tests for aluimulation testing of 12 p1983 N68-22549 07 p0951 N68-17162 and mechanism of of river temperature fluc-r cooling system outflow 09 p1378 N68-19076 tuations below power reac (BNWL-628) 13 p2014 N68-23568 Micro fuel coker and radiotracer labeling used to determine thermal and storage stabilities of high tem-perature jet engine fuels [AFAPL-TR-68-32, PT. 1] model to study thermal behavior of ESRO I satel [ESRO-TN-21/ESTEC/] 23 p4177 N68-37004 13 p2142 N68-23807 del of support used in secraft similar to ESRO High n compounds as (ESRO-TN-16/ESTEC/) 23 p4189 N68-37032 low drive temperatur (NASA-TN-D-4573) mory cores 14 p2229 N68-24388 ition and th bility of rare earth carrothermochemistry ribrational relaxation on, flow field charact rch programs dealing rmal stability, wave ex-ics, and other aspects of bonates of yttrium gro [NASA-TT-F-11710] 14 p2214 N68-24732 and design of atomic equency standards 15 p2477 N68-25753 Thermal control, to nonequilibrium nozzle fi [AGARD-CP-12, V. 2] 01 p0048 N68-10107 hydrogen maser for tim (NASA-TM-X-63223) es in nuclear reactor stability, and ther-ne polymeric films 15 p2490 N68-26874 Thermal degra 01 p0149 N68-10340 mogravimetric analysis [NASA-TM-X-60323] ties of new metal phosthermal stability of Polymer chemistry 01 p0023 N68-10644 [NASA-TM-X-59061] polymers 6 p2607 N68-27171 Test methods for co-plubility, vapor pressure and for property analysis 02 p0224 N68-11413 rization of colloids of ther-ith higher magnetization and [FTD-MT-66-99] 03 p0310 N68-11938 16 p2747 N68-27850 Laboratory equipment for thermal stability analyses on jet fuels Vapor densities and dissociation pressures used to stermine thermal stability of zirconia and thoria base 16 p2748 N68-27853 Pressure drop analysis for thermal stability of filtered sircraft fuels 03 p0382 N68-12749 ty of solutions of 10 to 16 p2748 N68-27854 te in hydrazine 04 p0362 N68-13031 Rocking autoclave for fuel fuel thermal stability analysis ion simulation and Static method for dete hydrocarbon fuels [FTD-MT-65-320] ng thermal stability of 16 p2748 N68-27855 04 p0563 N68-13227 ooxidizing stability of d for thermal stability 04 p0449 N68-13228 Magne roium wafer cells test 16 p2670 N68-27862 Thermal stability of the thermodynamic data (DP-1116) oxides calculated from Temperature effect on their sal stability of lubricat 16 p2670 N68-27863

05 p0617 N68-14009

Flaw detection by eddy curre

[FTD-HT-23-252-67]

nts in nonmagnetic heat

20 p3484 N68-32388

and equilibrium exygen zirconia and thoria 20 p3512 N68-33154

-14334 ipe ap--15338 nalyzed 15415 e ther-

VDEX

-16124 of ther-16904 rate in 17709

re and 18419 18897 ty stu-

19258 oxide 19483 c acid 20251

akets tts 10828 pinc. 2176 mir

2401 alu-2549 s of 3568

d to 3807 . ..

874 of 171

850 253

red 154 and 155

of 62

ricating oils and effect of sits on thermal stability ic phosphorus or ornasion preventic 17 p2895 N68-29280 her heat treatme 17 p2902 N68-29435 Properties and appirength dispersion p [AMRA-MS-67-07] 18 p3087 N68-29748 18 p3184 N68-29784 Synthesis and mole cular structure of thermostable soluble polyimides [NASA-TT-F-11768] 18 p3025 N68-30213 (HDL-TR-1384) ining 12 memory cells 18 p3042 N68-30404 bilizing agent added to Tricarbonyl manga silicone fluid lubrican [FTD-HT-67-226] 18 p3099 N68-30482 Thermal stability and poxy polymers from pher nical resistance data for se oxides 20 p3511 N68-32898 epoxy polymer [D1-82-0681] on at high specific ratings 20 p3531 N68-33001 Thermal behavior of cert um oxide fuels under irradia (EURAEC-1999) Effect of chain and cre and oxidative stability of lo [ONR-TR-RLT-106] sk structure on thermal naturated elastomers 21 p3707 N68-33978 Recipe and methods of productive refractory thermostable mater fucing high temperature [FTD-HT-67-300] 22 p3894 N68-35280 [FTD-HT-67-301] 22 p3895 N68-35348 Stabilization methods to pretion of polyvinyl chloride polym [TRANS-1526] vent thermal degrada-22 p3827 N68-35518 stability of polypropylene sum residues Epoxide effects polymer containing titan TRANS-1508] 22 p3827 N68-35559 THERMAL STRESSES Integrated heat shield analysis for high performance reentry vehicles [R67SD65] 02 p0281 N68-11370 ed to solve thremal stress calcula-04 p0588 N68-13298 Luminescence effect on generation capacity of soli-state lasers, and thermal deformation of laser resonato (FTD-HT-67-59) 04 p0518 N68-13426 Thermal deformation of laser 04 p0518 N68-13428 Stress analysis for viscoelast cylinder with star shaped cavity [FTD-HT-23-591-67] nonuniformly heated 06 p0923 N68-15946 Hypersonic wind tunne emispheres to obtain ter el tests of Plexiglas and nylon imperature, stresses and abla-(PIBAL-939) 07 p1089 N68-16414 Temperature rise and stresses due to internal heating 09 p1440 N68-18506 [AFTT-TR-68-1]

Thermal-vacuum stre of replica diffraction NASA-CR-93782]

10 p1559 N68-20053 Elastoplastic analysis of ture dependent yield stress [AFOSR-67-2836] lar rings with tempera-10 p1608 N68-20244

thermal stresses for [R-372] 10 p1608 N68-20269 be, and plate-fin radio

11 p1803 N68-21148 Stress relaxation method for determining thermal and athermal components of flow stress from flow stress relaxation

(BARC-313) 11 p1796 N68-21299 Thermal stresses and elastic-plastic stress deforma-tion for bonded dissimilar media with straight cracks

12 p1975 N68-22100 is of pure aluminum sub-creep and pressure 12 p1892 N68-22963 (SC-RR-67-2975)

zed to include in mic structural analysis 13 p2158 N68-23345 13 p2074 N68-23650

Annotated bibliog 13 p2161 N68-23652 Stationary and trans bine rotor disks under [FTD-HT-23-705-67] lare stress 13 p2164 N68-24305

is from wind tun-15 p2570 N68-26284

wind tunnel tests 15 p2571 N68-26629

iring and prior to extra-16 p2668 N68-27360

permal stresses in stain-paid hydrogen 16 p2650 N68-28312 [LA-DC-9163] Linear thermoelastic pro-stress and displacement weakened by external circ fiacontinuity tic problems solved for thermal ement fields in elastic solids nal circular crucks or plane of

INASA-CR-954111 17 p2979 N68-28626 Solving problem of cir plate vibrations due to 18 p3174 N68-29648

brium equations in displacements and bounda-tions for ribbed cylindrical shells under ther-18 p3174 N68-29673

ering large structural termal stresses 19 p3380 N68-31789 herative method for systems subjected to stati [AFFDL-TR-67-194]

20 p3577 N68-32709

ly creep assessed by theory 21 p3784 N68-33796

21 p3663 N68-33977 Heat deformation of tant

n alloy single crystals 22 n3888 N68-35089 Electric strength of epoxy re perature and mechanical stress [C.E.-TRANS-4773] ne as function of tem-22 p3894 N68-35211

um control of nuclear Distributed parameter of scket with thermal stress of 23 p4099 N68-36085

23 p4085 N68-37249

on free vibrations of thin 24 p4346 N68-37424

c functions to solution of see circle 24 p4347 N68-37623 ling, and buckling after

[NASA-TM-X-61300] 24 p4261 N68-37857 HERMALIZATION (ENERGY ABSORPTION)
NT NEUTRON THERMALIZATION

(EUR-3350.E) ttices 01 p0096 N68-10939

ization measurements using or light scattered by plasma 12 p1945 N68-22028

Computer solutions of grav [NASA-TM-X-60431] ional N-body problem 15 p2555 Net-25685 Feasibility of power by a (ORNL-TM-2204) 18 p3143 N68-30162

HONIC CATROL

Fabrication and testing of diodes for pore-type ispenser, costed particle, and barium streeting [NASA-CR-90327] 02 p0187 N68-11101 Performance evaluation of operation of cestum ther-mal emission converter with molybdenum cathode is

02 p0162 N68-11322

of thermionic cuthodes have one simenhore 07 p1038 Nd8-16362 Current carrying capabilitie in nitrogen at pressure levels at [NASA-CR-73186] cathode, pore-disper (NASA-CR-93672)

ctor sheaths for cosium (NASA-TN-D-4419) 11 p1765 N68-21623

uticle distribution of burium athode formed by nickelste 16 p2632 N68-27786

Design evaluation of heli-filaments for heating cylindri (NASA-TM-X-1630) 20 p3531 N68-32

hode alloys with axide hades in test diode 23 p4031 N68-36583 Life capabilities of ni cathodes and control par (NASA-CR-97194)

Design and open mercury cathode ins [NASA-CR-97210] 23 p4161 N68-36638

MIONIC CONVERTERS

(DLR-FR-67-991 02 p0251 N68-11139 ocial uses of el pe and cesium ther-

mal emission convert 02 a0292 N68-11321

of operation of cenium ther-th molyhdenum cathode in 02 p0162 N68-11322

of pissma diodes 03 p0401 N68-12343 Digital computer [ECOM-02269-F3]

Ot p0449 N68-13221 in cesium plasma ther-AD-6614551

(AFCRL-67-0500) 06 p0890 N68-15633 Six convertes solu [NASA-CR-92586] 06 p0769 N68-15766

Thormal energy of thermionic convertes [NASA-CR-93177] 08 p1118 N68-17233

for direct conversion 08 p1206 N68-17803

ermionic emitters, ad excitation of gas 08 p1121 N68-17805

08 pl122 N68-17807 ration and radiative at values of electron rium plasmas in ther-

09 p1400 N68-18401

[NASA-CR-93664] 09 p1278 N68-19392

(ANL-7377) 11 p1629 N68-21211

11 p1631 N68-21597

cal thermionic conver (NASA-TN-D-4533) 11 p1632 N68-21766

s for direct conversion 12 pi 908 N68-22701 (CEA-R-3418)

ce of solar therm collector-radiator in [NASA-CR-94402] 12 p1821 N68-22991

s of variable spaces on emitter and nichi-INASA-CR-10331 13 p1995 N68-23476

matical model for cal-riatics of solar ther Computer program and dating performance ci

(NASA-CR-94615) 13 p1996 N68-23987 Efficiency and steady at al thermionic tonverter te performance of cylindri

(NASA-TN-D-4582) 14 p2192 N68-25059

Code tol tong 14 p2194 N68-25619

U

THER

Pi alloy [NA

THER

T

T

CE

moc [CO

Pres

Fe

al re als, meta [GE

met

for ? [NA

relati (RA

INA

Fi and (OR

moc (AE

M

(EU

used mitro [NA

D

L

turb (RD

D

SUB.

THERMOCHEMICAL PROPERTIES

NT HEAT OF COMBUSTION

NT HEAT OF FORMATION

NT HEAT OF VAPORIZATION Optical emissivity, low energy electron diffraction, and other properties of thermionic energy converters [5-68-1036] 16 p2592 N68-27340 Surface properties of thermionic emitter and collec-08 p1122 N68-17806 Out-of-pile thermionic converter for electric space Reactor materials and effects of radiation environ-ent on physical properties Cesium oxides as electronegative additives, single crystal tungsten converter, vapor-deposited tunsten emitter materials, and thermodynamic meaning of elec-tronegativity and work function LA-3813 16 p2710 N68-28223 Plasma reaction kinetics, and electron energy and mairy in plasma studied for direct conversion of ther-ionic nuclear fission energy in plasma diodes 3MR-767] 18 p3005 N68-30443 01 p0082 N68-10802 Effects of molecular structure on thermochemical properties of phenolic resins and related polymers [NASA-TR-R-276] 02 p0280 N68-11038 14 p2194 N68-25619 18 p3005 N68-30443 using converters with rhemium emitters [NASA-CR-96013] Fuel and fission product transport through chemi-ally unpor-deposited fluoride tungsten NASA-CR-97118] 23 p4099 N68-36100 Computer program for calculating thermochemical gas flow properties
[SCL-DR-66-75] 03 ±0336 M48-12173 cally vapor-deposited [NASA-CR-97118] THERMIONIC POWER GENERATION Composition, test temperature, and temperature of deformation effects on tensile properties and strain hardening of metastable austenitic steels Single crystal molybdenum and rhenium electrodes for low work function collectors in thermionic conver-Reactor heat pipe flow system with external diode for thermionic generator power supply [NASA-TM-X-32370] 03 p0373 N68-12426 hardening of me [UCRL-17805] 05 p0677 N68-14742 [NASA-CR-95979] 19 p3205 N68-31488 Computer programs for analyzing performance data on thermionic isotope space power system [NASA-CR-91354] 04 p0447 N68-12989 m cryopump for neutral injec-uclear research machine 05 p0668 N68-14744 Beam line liquid heliu on, controlled thermon Performance testing and fabrication of solar ther-[UCRL-70590] mionic converter [NASA-CR-95980] Design and performance of flat and curved radiators for thermoelectric power sources of spacecraft [REPT.-5-39] 06 p0924 N68-15042 19 p3205 N68-31490 Molecular structure effects on thermochemical pro-perties of phenolic resins and related polymers [NASA-TM-X-59844] 15 p2487 N68-25684 Thermionic research and development program - im-provement of performance of low emitter temperature cesium vapor thermionic converters (NASA-CR-96148) 19 p3207 N68-32185 Testing, fabrication, configuration selection, and electrical performance calculations in solar thermionic generator development Chemical change in 3,5-diphenylimidazoline-4
esponsible for thermochromism
SC CP. 68, 35201 Design evaluation of helical electron bombardment filaments for heating cylindrical thermionic converters [NASA-TM-X-1630] 20 p3531 N68-32968 NASA-CR-92520) 06 p0771 N68-16074 Radiation effects on thermionic insulator materials -evaluation of beryllia, alumina, thoria, zirconia, and yt-Testing of yttria in molten barium and lithium for essible use as high heat resistant material for ther-[NASA-TN-D-4414] 07 p1033 N68-17095 [LA-3822-MS] High temperature, and radiation field effects on physical properties of ceramic insulators for nuclear thermicone systems [NASA-CR-71913] 09 p1378 N68-19131 20 p3512 N68-33237 Cesium surption tests in porous materials for ther-mionic converters [GA-8574] 22 p3809 N68-35962 Physical properties of some pluton pounds - data manual [TRG-1601/R/] 21 Thermionic and photovoltaic energy conversion 11 p1629 N68-21052 NT CESIUM DIODES Performance and life test on them onic converters NASA-TT-F-11914) High strength, thermal conductance cermet seal for termionic diode [NASA-CR-94154] 11 p1631 N68-21597 Determination of alumin carbide heats of formation [R.163/SR-5] [NASA-TM-X-52373] 02 p0215 N68-11045 Design studies and efficiency evaluations for five apacecraft thermionic reactor systems [REPT.-68-007] 12 p1902 N68-21856 Reactor heat pipe flow system with external diode for thermionic generator power supply [NASA-TM-X-32370] 03 p0373 N68-12426 THERMOCHEMISTRY NT AEROTHERMOCHEMISTRY Design and output calculations for direct conversion Current-voltage characteristics of zenon filled nuclear irradiated thermionic diodes [NASA-TM-X-52377] 03 p0380 N68-12718 thermionic power generator for space application {CEA-R-3418] 12 p1908 N68-22701 Thermionic space power reactor design critical ex-Electrical properties of xonon filled thermionic diodes in nuclear reactor radiation field [NASA-TN-D-4368] 06 p0890 N68-15747 GA-83091 ynamic study of potas water system 15 p2502 N68-26455 Principles, characteristics, and technology development status of convertion systems for converting reactor heat into space electric power [NASA-TM-X-52472] 18 p3113 N68-29921 [PA-TT-62] Development of nuclear thermionic space power stem using thermionic diodes, and heat pipe flow for Analytical methods of predic rocket exhaust plumes based o of flow regimes and chemical m [NASA-TN-D-4299] 09 pl378 N68-19146 Solar Energy Thermionic /SET/ generator design using converters with rhenium emitters [NASA-CR-96013] 19 p3204 N68-31407 of flow regimes and a [NASA-CR-91061] Point-kernel computation and experimental mea-rements of gamma heating effects during thermionic Thermionic power generation spacecraft power supply applicatio [UCRL-70816] n systems analysis for diode irradiation [NASA-TM-X-1539] 12 p1903 N68-22022 23 p3994 N68-36908 cteristics of discharges in ther-ning mercury and potansium 14 p2321 N68-24449 Anomalous characte ionic diodes containin THERMIONIC REACTORS

U ION ENGINES

U NUCLEAR ROCKET ENGINES Nuclear reactor space power using out of pile thermionic diodes and heat pipes cooling with control rods [NASA-TM-X-52446] 16 p2702 N68-27003 THERMISTORS Anemometric performance of semiconductor flow-Emitter and collector sh aths for cesium thermionic (JAERI-1142) 01 p0066 N68-10780 Godes with polycrystalline tungsten electrodes [NASA-TN-D-4744] 19 p3341 N68-31640 Temperature sensing telemi ments using unrestrained rhesus [SAM-TR-67-63] etry system measuremonkeys 01 p0013 N68-10808 Thermionic cathode dc life capabilities [NASA-CR-97322] 24 p4200 N68-38001 Thermistor chain for mea structure of upper layers [NEL-1395] iring sea temperature THERMONIC EMISSION Work functions, thermionic and field electron emis-ons, and adsorption, description, and migration on etal surfaces for simple and complex electron emit-(FTD-MT-64-358) 03 p0340 N68-12486 Thermister temperature control circuit for space biological sample refrigerator [Y-1602] 12 p1877 N68-22755 Thermochemical as and uranium plutonium [STI/DOC-10/79] 02 p0257 N68-11124 [AD-6602111 Development of germanium detector for Nimbus radiomete [NASA-CR-94613] immersed thermistor Electronic work functions of tangster, tantalum, niobium, and rhenium refractory metals containing dissolved amounts of hafnium and zirconium [FTD-HT-66-766] 02 p0259 N68-11467 13 p2070 N68-24165 Thin film temperature sens sounding rockets to measure at [ECOM-5188] r, /thermistor/, used in nospheric temperature 18 p3076 N68-30415 02 p0259 N68-11467 Single crystal elec [AFCRL-67-0669] 10 p1578 N68-20086 Design and performance of the internal proton current in synchr [R-619] ce of thermistor for measuring synchrocyclotron 19 p3279 N68-31733 es of collisionless cylin-esnitied electrons 11 p1677 N68-21122 Current-voltage che drical diade with there [NASA-TN-D-4516]

Electrical and magnetic properties of high tempera-ure thermistor based on-zinc oxide-iron oxide-nickel

THERMO-PHOTOVOLTAIC GENERATORS

U PHOTOELECTRIC GENERATORS

U THERMOELECTRIC GENERATORS

THERMOAERGELASTICITY
U AEROELASTICITY
U THERMOELASTICITY

23 p4034 N68-37318

THERMIONIC EMITTERS

Thermochemical stability of uranium and plutonium faciled graphite during irradiation [AECL-2783] Thermochemical and electrical properties, crystal structures, and stoichiometry of uranium oxides [JAERI-4045] 18 p3120 N68-30764 ium ceramic com-21 p3649 N68-34000 FRG-1601/N/1
Calculating thermochemical and thermocyroperties of nickel and cobalt alloys
roperties of nickel and cobalt alloys
22 p3890 N68-35224
berytlium im carbide and beryllium 23 p4008 N68-36398 Chemical problems associated with thermodynamic nalyses of lattice defects for nonstoichiometric phases a uranium dioxide 01 p0082 N68-10805 m chloride rubidi-02 p0281 N68-11415 dicting electron dens d on detailed descrip 03 p0425 N68-12019 Thermal cross sections and resonance integrals, decay and isotope half lives, gamma ray transitions, excitation levels, and related nuclear chemistry studies or chemistry studies 05 p0619 N68-14142 High temperature thermochemistry of lanthanum chlorides, calorimetric evidence for complexing in fused salt systems, and molten salt-metal solutions 05 p0620 N68-14148 Heat of formation of gold antimonide and partial enthalpies and enthalpy interaction coefficients of an-timony and gold in liquid tin 09 p1292 N68-18420 ure chemistry and 13 p2128 N68-23913 Soviet articles on nuclear and solid state physics, rophysics, thermodynamics, and chemistry 13 p2020 N68-24058 ot of plutonium-oxygen nium oxygen systems 14 p2371 N68-24821 sotope effect and thermodynamic properties of aid hydrazine, diborane and hydrides in structural ory of liquids 15 p2419 N68-26737 Heat of mixing measured for branched hydrocarbons 18 p3019 N68-29792 Thermochemical research for enthalpy, bonding nergy, and vapor pressure of aliphatic diamines and fluorocarbons [AFOSR-68-0984] 18 p3023 N68-30136 Thermodynamic properties of several polynoclear romatic hydrocarbons and bicyclic globular molecules 18 p3188 N68-30235 Heat of combustion of trins sublimation and fusion, and nitroform in thermochemical (TRANS-2605) ion of trinitromethane, and heats of sion, and enthalpy of formation of schemical study 18 p3029 N68-30560

orintor thin film NCEL-TR-575)

(NASA-CR-95980)

and current-voltage data on voltage regulators 16 p2630 N68-26982

d fabrication of solar ther-

ic energy converters 16 p2592 N68-27340

19 p3205 N68-31490

sivity, low energy electron diffraction, erties of thermionic energy converters

SUBJECT INDEX Relative partial molar heats of solu-seler and solutes in liquid plutonium (LA-3951) 24 s tion calculated for 24 p4211 N68-37562 THERMOCOMPRESSION U COMPRESSING U HEATING THERMOCOUPLE PYROMETERS Performance characteristics of tungsten-rhenium alloy thermocouples under thermal neutron flux [NASA-TT-F-11623] 12 p1873 N68-22383 THERMOCOUPLES Measurement of the and inorganic materials [RT/EL/67/3] cence on orga 01 p0067 N68-10996 Thermocouple exposure to neutron flux density levels in Experimental Breeder Reactor 2 [BNWL-SA-1227] 02 p0237 N68-11478 Tungsten-rhenium alloy thermocouples for nuclear reactor temperature control [CEA-R-3182] 03 p0344 N68-12648 Measurement of thermal cycles in weld heat affected zone of mild steel parent plates with embedded ther-[COA-NOTE-MAT-13] 04 p0589 N68-13318 easuring discharge tube Battery-powered gage for m LRP-32/67] 05 p0664 N68-14820 of thermocoupie capable of temperatures up to 2000 deg C in oxidizing media an Feasibility of then [FTD-HT-23-746-67] 06 p0853 N68-15090 High temperature reactor and thermocouple materi-research, fast reactor cladding and structural materi-s, carbides for fuels and structures, and refractory als, carbides metal alloys [GEMP-69] 06 p0872 N68-15351 High temperature thermocouple, electrical, and ectronic materials for reactor components and reac-06 p0873 N68-15354 Radiation correction for thermal equilibrium of metal wires coated with silica in hot gases [ERDE-TM-11/M/66] 08 p1255 N68-17305 Immersion type copper for NERVA [NASA-CR-91271] 08 pl203 N68-17313 Thermodynamic electromotive force of mercury relative to platinum [RAE-TR-67185] 09 p1408 N68-18627 Use of high purity m (NASA-TT-F-11548) thermometry 09 p1449 N68-18813 Fabrication of instand in-pile capsules [ORNL-4190] i nuclear fuel elements 10 p1555 N68-19664 Design, and calibration of iridium versus iridium-todium thermocounies [NASA-CR-61683] 10 p1529 N68-19864 Installation and error and mocouples used in surface terr (AECL-3062) alysis methods for ther-nperature measurements 13 p2172 N68-24123 Thermoelectric heat [FTD-HT-23-689-67] 13 p2071 N68-24228 Measuring thermal con temperature by thermoco (EUR-3909.E) tivity of graphite at room is in vacuum 14 p2369 N68-24359 Photographs, thermocouples, and emission spectra used to study mining and reaction of hydrazine and nitrogen tetroxide [NASA-TN-D-4467] 14 p2372 N68-24965 Design and calibration of for study of flow field in super [TAE-79] n of total temperature probes 15 p2466 N68-26060 Laser beam technique to initiate single bubble around thermocouple, and bubble growth rate and sphericity using high speed photography [NASA-CR-81597] [6 p2793 N68-27440 Material systems for high temperatury sensors of gas (RDR-1479) 19 p3282 N68-32172 d for measuring heat flux Single-thermocouple in thermally thick walls [NASA-TN-D-4737] 20 p3611 N68-33208 NASA contribu al-purpose thermocou-

EX

0802

1038 nical

172

e of

742

jec-

744

pto-

684

ne-4

781

790

764

000

224

198

115

in

19

als,

42

48

20

13

9

58

21

17

12

17

15

ple design and applications NASA-SP-5050

Design analyses on fis

(IDO-17268)

FFTF coolant (BNWL-SA-1857)

Design of differential amplifier for thermocouple (RT/EL/68/2) 22 p3849 N68-35721

22 a3878 N68-35620

on thermocouples for

22 p3937 N68-35910

cts on thermocouples for

23 p4064 N68-37160

THERMODYNAMIC COUPLING Stable transition of superco aperconducting states rs from normal to 09 p1408 N68-18965 nar pipe flow with Heat and mass transfer in its ermodynamic coupling effects 22 p3976 N68-34886 Thermodynamical methods polarizing protons and proferences [CERN-68-32] ds and optical pumping for oducing nuclear spin dif-23 p4111 N68-36015 Thermodynamic effects on stress wave propagation in viscoelastic solids 24 p4348 N68-37696 THERMODYNAMIC CYCLES NT BRAYTON CYCLE NT RANKINE CYCLE TURBOCODE program for thermodynamic cycle liculations on digital computer calculations on digit (COA-AERO-198) 01 p0036 N68-10865 Design and development for operating in thermal-an [NASA-CR-91390] nt of silicon solar cell panel mealing cycles 04 p0449 N68-13101 Thermomagnetic and thermoprove energy conversion odynamic cycles electric effects used to efficiency of thermodynamic cycle (DGLR-68-005) 12 p1818 N68-22013 Thermodynamic design of diesel engines [DED-2-MCB-1] 14 p2338 N68-25373 Heat transfer analysis of pulsed laser rod of finite 19 p3287 N68-31425 Electrochemical performance data for automatic continuous cycling of sealed nickel cadmium betteries [NASA-CR-9601] 19 p3204 N68-31473 Thermodynamic cycles with multistage injection for magnetohydrodynamic generators [AFTRANS-263] 19 p3342 N68-31667 Thermal energy produced by thermal cycling fer-rimagnetic suspension in magnetic fields [EUR-4039.E] 21 p3628 N68-34441 Digital computer thermodynamic calculations using ALGOL programming of TURBOCOPE scheme [COA-AERO-203] 24 p4352 N68-37580 THERMODYNAMIC EFFICIENCY Flow equations for evaluating efficiency of convec-ve heat transfer by gas flowing over surface 02 p0290 N68-11749 Thermal stability of thulium oxides calculated from thermodynamic data [DP-1116] 05 p0617 Nes-14000 05 p0617 N68-14009 Weight, heat transfer, and tankine cycle space radiate trent finned tube geometric NASA-TN-D-441)] ifer, and efficiency comparison for radiators constructed of three dif-07 p1094 N68-16324 Parametric analysis of effects of concentrator surface errors and rim angle, collection system orientation error, and receiver temperature on paraboloid solar collector thermal efficiency [NASA-TN-D-4415] 09 p1276 N68-18998 09 p1276 N68-18998 Axial power tailoring to obtain constant fuel-centerline temperature in nu (NASA-TN-D-4638) or 16 p2711 N68-28304 Experimental there ic and gas-dynamic study of combustion process [DLR-FB-68-49] 23 p4187 N68-36543 THERMODYNAMIC FOURLINGIUM Steady one dimensional gas flow with thermodynamic relaxation 01 a0049 N68-10109 Laminar boundary layer solution for zero pressure ident and local thermodynamic equilibrium condi-as - radiation and absortion effects 06 p0925 N68-15611 ing general inequalities at thermodynamics durethod for d 07 p1097 N68-16855 Gray optically thick pi ecephere in convec-INASA-CR-931621 06 p1235 N68-17235 thermal equilibrium of in hot games 06 p1255 N68-17305 Radiation correction for ti metal wires coated with silics in (ERDE-TM-11/M/66) report processes in to-08 p1217 N68-17387

Capacitive discharge welding machine for remote pairing of thermocouples attached to in-pile irradia-

23 p4070 N68-37164

repairing of thermocouple tion experiments [Al-AEC-MEMO-12710]

thermodynamic study of heat any systems with diffusion and chami-09 p1451 N68-19351 etmodynamic equilibrium parameter method of puting decomposition rate of composite coating 12 p1894 N66-22264 processes for plans re-nickel alloys at los MLM-1307/19/0 12 p1838 N68-22624 Einstein absorption of NASA-TN-D-44791 12 p1870 N68-22861 quilibrium potential etary space determ a and thermal pinar 16 p2764 N68-27513 n mear th 16 p2645 N68-27597 um correlation ions for high tempera-17 p2947 N6B-2B596 [NASA-CR-95884] 18 p3144 N68-30283 Mathematical models bber spherical shell und 18 p3179 N68-30314 18 p3029 N68-30520 in the uranium nitr [AABC/TM-447] 19 p3227 N68-31561 INASA-CR-961601 equilibriums of integral (NASA-TM-X-61232) 21 p3639 N68-34324 steady state behavior of all experimental verifica-[NASA-CR-9030] 23 p4110 N68-37283 r multicomponent gar 24 p4243 N68-37502 nitrogen, and exyge (ORNL-TR-1942) 24 p4354 N68-379 ic data for 112-02-He (UTIAS-TN-128) 24 p4355 N68-38083 CRITICAL POINT CRITICAL PRESSURE CRITICAL TEMPERATURE CRITICAL TEMPERATURE
EMISSIVITY
ENTRALPY
ENTRALPY
ENTROPY
FREE ENERGY
GIBBS FREE ENERGY
HEAT OF FORMATION
HEAT OF SOLUTION
HEAT OF SOLUTION
HEAT OF SOLUTION
HEAT OF VAPORIZATION
MELTING POINTS
PYROELBE TRICITY
SPECIFIC HEAT
SUPERCRITICAL PRESSURES
SUPERCRITICAL
THERMAL BUFFLIND
THERMAL DIFFUSION
THERMAL DIFFUSION
THERMAL DIFFUSION
THERMAL EXPANSION
THERMAL EXPANSION
THERMAL EXPANSION
THERMAL EXPANSION
THERMAL EXPANSION
THERMAL EXPANSION
THERMAL EXPANSION THERMAL EXPANSION
THERMAL INSTABLITY
THERMAL STABLITY
THERMOCHEMICAL PROPERTIES
THERMOCHEMICAL PROPERTIES
THERMOCHYSICAL PROPERTIES
VACOR RESPUBLY VAPOR PRES FTD-HT-44-251, V. 21

01 p0149 NSE-10240

Then

UCID-

Syste

propert

Com

Mass

ANL-

irradiat

High 57 in i

Math

(TR-2)

modyni NASA

Hype physico layer

Data

INASA

modyn PVT re [BM-K

Ther

Abla

Com

high te

Com

The

KAPL

Covi

[LNF-

Prep

Rese guided TR-4

Ther vapor a

Bibli

Handbook on methodology for calculating ther-modynamic properties of individual substances and constants necessary to calculate tables [FTD-NT-66-251, V. 1, PT. 1]

01 p0149 N68-10297 Convergent bounding Pade approximation procedures generalized for applications to thermodynamic properties of ferromagnetic laing model [BNL-11648] 01 p0108 N68-10487

Chemical potentials and activity coefficients of bi-ary solid solution components by third component [PA-TT-59] 01 p0025 N68-10823

Handbook containing calculation methods and reference material for thermodynamic properties of individual substances

[FTD-HT-66-251, V. 1, PT. 3] 02 p0280 N68-11073

Mechanics and thermodynamics of plastic deforma-tion analyzed in terms of general assemblage or con-tinuum of elastic perfectly plastic elements or states [TR-54]

Thermal properties and chemical kinetics of solid phase in combustion process of ammonium perchlorate propellants during steady state and transient pressure

[NASA-CR-66487] 02 p0292 N68-11784 Microscopic Landau model for thermodynamic pro-perties of Fermi fluid

02 p0250 N68-11880

Computer program for two dimensional analysis of thermodynamic behavior of boiling liquid [CEA-R-3141] 03 p0425 N68-12167

Preparation, characterization, and thermodynamic properties of lanthamum oxide carbide [COO-716-027] 03 p0312 N68-12211

Statistical mechanics used to calculate ther-sudynamic functions of diatomic gases LA-3597] 04 p0592 N68-12815

A-3597] Simplified theory on anharmonic contributions to termodynamic properties of metals 04 p0555 N68-12856

Thermodynamic properties and activity of aluminum udied in Cr-Al and V-Al systems between 1170 and

04 p0520 N68-12980

ic properties of tungsten from zero to 2400 deg C [ANL-TRANS-452]

04 p0594 N68-13057

nilarity theorem for calculating thermodynamic erties of moist lithium vapors 04 p0598 N68-13855

Thermodynamic calculations for hot equilibrium wake behind hypersonic reentry vehicle 05 p0752 N68-13912

Magnetohydrodynamic energy converters, and elec-tric plasma acceleration - arc currents, electrodeless plasma generators, supersonic jet flow dynamics, and

DLR-MITT-67-17] 05 p0721 N68-13924 Effects of axial current flow on velocity and energy if supersonic plasma jet

05 p0722 N68-13930

ometric measure ics during imping ts on plasma jet theros p0723 N68-13932

rical equation of state for gassures arious temperatures and pressures 05 p0618 N68-14081 (NRC-9855)

Thermal diffusivity, heat capacity, thermal conductivity, and electrical resistivity of SNAP fuel materials [NAA-SR-11959] 05 p0753 N68-1409

Experiments, and property measurements with second core load of fast thermal reactor [KFK-592] 05 p0695 N68-14536

Tables of thermodynam ganic metal-ion complexes (UCRL-50200) stability constants of or-

05 p0625 N68-14552 Feasibility of simulation processes - atmospheric trans of dust and sand, absorpti on of Martian atmospheric ransportation and deposition option properties, and ther-

INASA-CR-STISS 05 p0738 N68-14583

thermodynamic properties for kaclinite
[UCRL-17820]

Equations for calculating various thermodynamic sections of two component system liquid-vapor (MM-R1-7076)

25-7076) rmal properties of gold germanium silicon array-, amelian into glam-liquid phase 05 p0678 N68-14776

Thermodynamic measurements for liquid structure [LA-DC-8804] 05 p0757 N68-14856

Effects of various energy environments on zirconi-um-oxygen-carbon system, solid state ceramics, surface properties, and ceramic materials process: 18 [NASA-CR-91660] 03 p0682 N68-15001

Thermal constants of inorganic and organic com-pounds containing no more than two carbon atoms [PB-175626] 06 p0792 N68-15751

Numerical procedures and computer program for calculating real fluid and thermodynamic properties of normal and parahydrogen [NASA-TN-D-4341] 06 p0812 N68-15798

Thermodynamic and mechanical properties of sodi-m liquid and vapor, with bibliography ANL-7323] 07 p1097 N68-16777 [ANL-7323]

Analysis and design of thrust chamber with gas enerator, and thermodynamic-combustion charac-cristics of lithium-fluorine hydrogen tripropellant [NASA-CR-72325] 07 p1072 N68-16788

Thermodynamic parameters of cesium behind in-dent and reflected shock waves 07 p1061 N68-16843

Optical and anharmonic thermal properties calcu-ted and verified for diatomic molecular solid UCRL-70723] 07 p1100 N68-17216 [UCRL-70723]

Thermodynamic and optical properties of uranium plasma in proposed gaseous core nuclear rockets [NASA-CR-72348] 08 p1217 N68-17430

Surveyor 5 data on lunar surface temperatures and ermodynamic properties

08 p1239 N68-17849 Molecular structure, thermodynamics, and forma-on of uranium carbides tion of uranium [JAERI-4042] 08 p1143 N68-18032

High temperature research program recommenda-om on thermodynamic and thermophysical proper-es, and crystal structure of refractory metals 08 pl 189 N68-18214

Bibliography on thermal, mechanical, and stress pro-perties of coated particle fuels

[LA-3791] 09 p1374 N68-18530

mic electromotive force of mercury relative to platinum [RAE-TR-67185]

09 p1408 N68-18627 Thermodynamic rate equations for boundary analysis at liquid-vapor interface of mercury [NASA-CR-61628] 09 p1448 N68-18630

Thermodynamic properties of Martian atmosphere with respect to vertical profiles of composition, temperature, number density, and pressure (9) p1421 N68-18845

Engineering criteria for thermodynamic im-rovement of liquid hydrogen turbopumps for rocket

[NASA-CR-61682] 09 p1414 N68-19048 Debye temperature determined from X ray data and used in calculating thermodynamic properties [MLM-1396] 10 p1611 N68-19556

Thermal modeling of cylindrical systems in simulated acc environment based on geometric scaling laws 10 p1611 N68-19627

Thermodynamic properties of hypothetical fluids-ugacities, specific volumes, and enthalpies of real omponents and mixtures of binary vapor liquid and olid liquid systems 10 p1612 N68-19666

Approximate equations for computing enthalpy and elecity derivatives at surface of flat plate, cone, or (NASA-TN-D-4484) 10 p1613 N68-20065

ter program for det mining thermophysical aspects of Jupiter atmospheric entry [NASA-CR-93814] 10 p1592 N68-20073

Mathematical model for determining thermal clusvior of ESRO I satellite under stimulus of external IO-TN-20/ESTEC/) 10 p1614 N68-20241

Magnetothermodynamic properties of aqueous solu-tion of copper sulfate at temperatures below 4.2 deg K and in magnetic fields to 90,000 gauss 10 p1581 N68-20313

Gas-liquid chromatographic analyses of volatile inor-ganic fluorides and thermodynamics of solution of selected metal halides 11 p1645 N68-20682

Solid electrolyte studies on thermodynamic proper-ties of pulladium-copper alloys and pulladium-tin alloys (AD-665821) 11 p1711 N68-20688 Statistical thermodynamics of polyphenyls and heat capacities in critical phase transition regions
11 p1645 N68-20707

Thermal properties of ideal, monatomic crystals in terms of Born-Von Karman theory of lattice dynamics [1 p1768 N68-20739

Entropy, enthalpy, and Gibbs free energy of polymethylacrylate and polymethylacrylic acid [NOLTR-67-171] 11 p1648 N68-20937

Crystal structure and thermodynamic properties of raphites and carbons, and radiation effects on struc-11 p1739 N68-20985

Thermodynamic behavior of plutonia-urania sonu solutions at high temperatures | 11 p1802 N68-20998 | 11 p1802 N68-2098 | 11 p1802 N68-2098

Mathematical simulation of solution-gas drive per-ormance of volatile oil reservoir using digital com-11 p1649 N68-21048

Thermodynamic properties of thermal breeder fuels with ternary thorium and uranium matrices [ORNL-TM-2015] 11 p1713 N68-21093

Partition functions and thermodynamic properties to high temperatures for hydrogen triatomic and diatomic molecular ions [NASA-TN-D-4523] 11 p1806 N68-21732

High temperature thermodynamic properties of CU-2660-39] 12 p1983 N68-22542

Fabrication and test performance of solar thermionic collector-radiator heat pipe structure [NASA-CR-94402] 12 p1821 N68-22991

Intermolecular interaction for polar and nonpolar solecules correlated with thermodynamic and trans-ort properties of gases 13 p2165 N68-23070

Thermodynamic properties of several liquid ferrous 13 p2166 N68-23175

Thermodynamic properties and equilibrium com-position of kerosene/air - kerosene and hydrogen fuels 13 p2140 N68-23629

Thermodynamic properties for fuel-weak mixtures of kerosene/air - kerosene and hydrogen fuels 13 p2140 N68-23630

Thermodynamic properties for stoichiometric and fuel-rich mixtures of kerosene/air - kerosene and hydrogen fuels

13 n2140 N68-23633 Thermodynamic properties for fuel-weak mixtures of hydrogen/air - kerosene and hydrogen fuels 13 p2140 N68-23636

Equilibrium composition for fuel-weak mixtures - kerosene and hydrogen fuels

13 p2140 N68-23637

Thermodynamic properties for stoichiometric and fuel-rich mixtures of hydrogen/air - kerosene and hydrogen fuels 13 p2140 N68-23639

Vessel and shell fabrication, prototype thermal, and structural models, and cryogenic vessel thermal/ther-modynamic design and management [NASA-CR-92118] 13 p2074 N68-23659

Performance tests on apparatus suitable for high temperature differential thermal analysis. [BMWF-FBK-67-86] 13 p2169 N68-23666

Survey of diagrams and graphical methods for ther-modynamic analyses of jet propulsion [AGARDOGRAPH-98] 13 p2169 N68-23693 Cryogenic storage system and pressure vessel design [NASA-CR-92119] 13 p2075 N68-23792

Computation of thermodynamic properties for nickel base solutions 13 p2083 N68-23826

Thermodynamic properties of solid solutions in sodium chloride-potassium chloride-cadmium chloride system 13 p2021 N68-24072

Tabulated state variables and thermodynamic values for isentropic discharge phenomena of water, starting with saturation (DLR-FB-68-11) 13 p2172 N68-24136

THESEE-1 - FORTRAN computer program for cal-slating thermal and thermohydraulic performances of culating thermal and the organic cooled reactor [EUR-3905.F] 14 p2288 N68-24469

Kinetic interpretation of glass transition - glass tem-peratures of alkane liquids and polyethylene [REPT.-67-C-091] [4 p2276 N68-24504

A-1292

heat 0707 als in nics 0739

DEX

y of 0937 es of true-0985 solid

per-048 fuels 693 n to

070 ous 175 inof 30

37 99

3

TR-46)

aluation of thermodynamic ing austenitic steels and al ain casings of supersonic ai

amic performance of heat d alloys used in construct-ic aircraft jet engines 20 p3579 N68-33338

33 36

SUBJECT INDEX odynamic properties of sodium and potassium 14 p2371 N68-24795 (UCID-152711 Systematic study of thermal properties of proposed aircrew protective uniform 14 p2205 N68-24878 Equilibrium phase compositions and thermodynamic properties of solid solutions in magnesium oxide-iron oxide-silicon dioxide system 14 p2216 N68-25019 Shock wave generated thermodynamic data for hydrocarbons, organic compounds, explosives, and other alloys and mixtures [UCRL-50108, V. 2, SUP. 1] of saturated liquid and vapor pot (NASA-CR-96741) 15 p2565 N68-25693 Compendium of shock wave [UCRL-50108, V. 1, SUP. 1] odynamic data 15 p2506 N68-25705 Mass spectroscopy studies on thermodynamic properties of uranium-oxygen system [ANL-TRANS-561] 15 p2414 N68-26305 [AA&ES-68-1] Literature survey of thermodynamic properties and irradiation behavior of carbide fuels [LA-3799] 15 p2501 N68-26431 Tabulated data of vibration tation of ideal gas thermodyn [NSRDS-NBS-17, PT. 3] High pressure effects on Mossbauer spectra of iron 57 in iron and sickel metal, and zero pressure ther-modynamic properties of aluminum Selected values of chemities of first thirty four elem (NBS-TN-270) 16 p2674 N68-27099 nerical solution of abla-elastic cylinder 16 p2793 N68-27243 nematical model and nu d thermal effects in visco Research program on physi-transport properties of alkali m [AGN-8284] (TR-2) Bibliography of low temperature mechanical, ther-modynamic, and transport properties of methane [NASA-CR-95219] 16 p2793 N68-27412 Thermodynamic properties stoichiometric uranium dioxide [AECL-3072] Hypersonic flow over slender blunt body with hysicochemical gas transformation in high entropy Approximative calcul sociation and ionization [DLR-FB-68-35, PT. 1] 16 p2646 N68-27599 Data correlation of thermophysical properties of saturated liquid lithium as function of temperature [NASA-TN-D-4650] 17 p2898 N68-28365 Charts of thermodynamic ing effects of ionization, part ture, and atmospheric pressu [NASA-TN-D-4754] Thermodynamic and transport properties of water vapor and mixtures of water vapor and nonpolar gases 18 p3021 N68-29978 Molecular force field and the of simple polyatomic molecule Bibliographic review of experimental data on ther-modynamic properties, compressibility, isotherms, and PVT relations for helium [BM-IC-8388] 18 p3024 N68-30195 Calculating thermochemical properties of nickel and cobalt al [NASA-TT-F-11914] termodynamic properties of several polynuclear natic hydrocarbons and bicyclic globular molecules ermal, structural, and stermetallic compound (NYO-3454-22) 18 p3188 N68-30235 Ablation thermodynamics of silicon carbide vapor at high temperatures and pressures [RM-3592-PR] 18 p3189 N68-30617 in analying perfo (NBS-TN-362) Computer program for three dimensional nuclear thermal-hydraulic characteristics of reactor core [JAERI-1159] 18 p3120 N68-30761 Computer programs for steady state thermal design calculations on space radiators (UCRL-17767) Equilibrium thermiconcentrations of ce cident and reflected a [HDL-TR-1388] 19 p3383 N68-30884 Single particle parameter distributions in interaction energies, volumes, and enthalpies of water 19 p3225 N68-31322 Thermodynamic properlium-nitrogen mixture ressures between 14.69 odynamic behavior of condensation nucleus 19 p3277 N68-31474 Algebraic fits to thermo (KAPL-M-6734/WBJ-5/) odynamic properties of water 19 p3387 N68-32156 Review and unalysis of modynamic properties of pi [ORNL-TM-2106] Covariant statistical mechanics, and relativistic anaformation properties of thermodynamic quantities 19 p3387 N68-32165 (LNF-68/311 Bibliography on physical chemical, transport, and thermodynamic properties of zeron [JUL-BiBL-13] 23 p4013 N68-36963 High temperature thermodynamic properties of rare earth fluorides 20 n3607 N68-32242 Preparation, characterization, and thermodynamic properties of landhanium oxide carbide 20 p3426 N68-32862 Evaluation of rate data for homogeneous, gas-phase reactions in carbon monoxide, and thermodynamic Heat capacity of scandium from 1 to 23 deg K 20 p3570 N68-32879 ic calculations on ther-um chloride crystals 20 p3610 N68-32947 monic and anharmonic namic properties of sodio Thermodynamic properties of polymer solutions 24 p4271 N68-37550 ic paradox and theory of sotropic media 20 p3538 N68-33157 Titration analysis on iron-oxygen system ther-odynamics in high temperature galvanic culis 24 p4215 N66-37783 Resolution of thermodynamided wave propagation in ar

Thermodynamic property data tables for CHNOPS compounds and heats of combustion and formation for organic compounds of biological interest [NASA-CR-96468] 20 p3432 N68-33427 re, electrical properties, ther-and mechanical properties of 20 p3513 N68-33601 of thermodynamic pro-21 p3792 N68-33862 and nuclear properties 21 p3794 N68-34076 Thermodynamic analysis of spacecraft thermal control and pressurization requirements for Mars Orbiter and Mars Excursion Module missions [NASA-CR-96740] 21 p3758 N68-34079 ic theory of materials with 21 p3756 N68-34681 al frequencies for compu-mic properties 21 p3654 N68-34705 cal thermodynamic proper-21 p3655 N68-34724 al, thermodynamic, and 21 p3796 N68-34795 of oxygen in non-22 p3976 N68-34875 22 p3941 N68-35113 c properties of helium show-article interactions, tempera-22 p3857 N68-35117 odynamic properties 22 p3822 N68-35142 and thermodynamic iloys 22 p3890 N68-35224 22 p3952 N68-35794 Thermodynamic property data for helium 3 - helium solutions at cryogenic temperatures and applications analying performance of dilution refrigerators on refrigerators 22 p3980 N68-35807 Selected thermodynamic and transport properties of inary electrolytes in aqueous solution compiled from 22 p3831 N68-35921 23 p4138 N68-36158 mic properties of helium, nitrogen, and n mixtures from 240 to 930 deg R for een 14.696 and 3000 psia 23 p4186 N68-36342 23 p4083 N68-36636 ase behavior and ther-23 p4189 N68-36876 Reignition and thermodynamics of dark phase in ectric wire explosion 23 p4189 N68-36985 23 p4014 N68-37008

Gas adsorption and thickness effects on ther-modynamic properties of thin nickel films expused to carbon monoxide

24 p4332 N68-37985

THERMODYNAMICS Cutting properties of steel tools as function of defor-ation during thermodynamic treatment mation during thermodynamic treatment
24 p4269 N68-38097

Lunar surface temperatures and thermal classracteristics at Surveyor 7 landing site
24 p4343 N66-38251 THERMODYNAMICS NT AEROTHERMODYNAMICS NT COMBUSTION PHYSICS Solutions for systems of ordinary differential equa-ons into which partial differential equations of heat adaction are split by discreting space but not time coordinates (SAAB-TN-63) 01 p0151 N68-10539 Formulas for limiting heat exchange law when temical reactions occur on entrainable surfaces as ell as within boundary layers 01 p0052 N68-10611 Temperature and thermal stress distribution due to termal neutron flux peaking near end plags of field da are determined for smooth and fissued casmings SUR-3557.E) 01 p0094 N68-10784 rods are determ (EUR-3557,E) Nonlinear the and shells [AM-67-8] sic theories of rods, plates, 01 p0145 N68-10833 Simple melting oquations determined for relating melting temperatures of solids to room temperature volume of solid phases [NASA-CR-90215] 01 p0083 N68-11003 Soviet articles on plasma physics, fluid mechanics flid mechanics, detonations and thermodynamics unstated from journal of applied mathematics and chairca industry. [FTD-HT-66-261] 02 p0241 N68-11661 ance of pebble bed resc Thermal and stress perfe IAAEC/TM-3441 03 p0368 N68-11984 Thermodynamics, electrochemistry and interneting lomes of operational, satellite nickel cadmius TG-9421 03 p0303 N68-12150 Computer progressions [EUR-3633.E] ms for thermodynamics of liquid 03 p0376 N68-12540 omagnetic field 04 p0592 N68-12829 n macro and micro [TR-55] 04 p0595 N68-13225 rmedynamics used to a of gas dynamics 04 p0494 N68-13254 118-31 Differential equations for thermodynamic changes in gas flow with variable mass flow density under heat addition [DLR-FB-67-48] 04 p0494 N68-13274 Chemistry of aqueous a amotic coefficients, physi-olyte systems, and water re ns - thermodynamics homistry of polyelec ch program 05 a0620 N68-14146 Conference on thermal a and radiation, boiling and c turbulence and diffusion (ORNL-TM-1975) Criterial equation transfer in mout mai [FTD-HT-67-475] ly heat and more 06 p0924 N68-15119 06 p0897 N68-15130 06 p0897 N68-15131 of turbojet, me 06 p0897 N68-15133 Pigginesic superior of 04 person Nat-15244 uri scale model NASA-TN-D-4387) 06 p0025 N68-15329 Gravity effects on b nucleate bailing [NASA-TN-D-4301] 06 p0925 N68-15330 of transpiers trionide analyzed on 700 dag to 900 dag C Ok p0787 NAS-15415

ny of solid look systems on p0792 1962-15750

IAROD-S107-13-MC1

SUL

er

40

NEKKER

Vo [N

[M

the [A

N N

soi in N

fec dat

THE

THERMOELASTICITY ri tube for determining effects of ther-nic properties of liquids on cavitation FTD-MT-67-40] 97 p0986 N68-16758 Thermodynamic prope ctroe collectors, and ic mic energy conver 08 p1121 N68-17805 thermodynamics and ap-nical energy conversion 08 p1124 N68-17826 Microscopical approach to thermodynamics and phase transitions in ferroelectrics [NASA-TT-F-11468] 08 p1225 N68-17902 Thermochromic materials for display devices and their application as screen materials in cathode ray tobe phosphore (RASA-CR-86031] 08 pl 154 N68-18022 Thermodynamic effects of cavitation in low tempera-ture liquid hydrogen over range of flow coefficients using flat plate helical inducer [NASA-TN-D-4423] 08 p1232 N68-18221 Thermody sorption of m [LA-3819] nt of anion exchange abic tre 09 p1296 N68-18956 Analysis of coolant temperature transients by Laplace transform solution to spatial time dependent coolant heat balance equation in reactor channel [KFX-618] 09 p1377 No8-18966 Terms due to infrared emission and absorption by omic oxygen and carbon monoxide in thermal conduction equations [NASA-TM-X-60925] 09 p1423 N68-19006 minimization and optimal shapes for bodies of an entering earth atmosphere at hyperbolic NASA-CR-73203] 09 p1451 N68-19241 Thermodynamics of liquid normal paraffin hydrocar-ns and their binary mixtures 09 p1298 N68-19270 terature survey of, and test procedure for deter-tion of thermodynamic properties of AeroZINE INASA-CR-659951 09 p1413 N68-19466 Thermodynamics of liq-injection and mixing proce [NASA-TM-X-5239]] and solid propellants, and es for liquid propellants 10 p1612 N68-19840 Vaporization wave hypothesis for thermodynamics and resistance rise in exploding wires [BRL-1383] 11 p1766 N68-20653 Thermodynamics of partially ionized hydrogen 11 p1759 N68-20696 Thermodynamics and fluid dynamics of saturated water flow discharge from ducts
[AEC-TR-6928] 12 p1863 N68-22790

of fuel element burnup 12 p1912 N68-22960 (ANL-TRANS-558)

Design, construction paratus for thermody [COO-1707-1] n, and testing of experimental ap-amics of alkali metal mixtures 12 p1984 N68-22966 [CU-2660-34] 13 p2170 N68-23812

Theoretical and experience (AFOSR-68-0240) nental study of thermal 13 p2054 N68-24044

Soviet articles on nuclear and solid state physics, geográpsics, thermodynamics, and chemistry [FTD-MT-64-358] 13 p2020 N68-24058 ies of liquid-gas two phase Thermodynamic stab

[RT/ING/68/1, PT. 1] 14 p2369 N68-24480

ranient thermodynamic analysis for development athematical model that predicts transient tempera-and voltage-response characteristics of fuel cell (NASA-TN-D-4601) 14 p2193 N68-25304

Cesium oxides as electror crystal tungsten converter, emitter materials, and thermo-tronegativity and work functio [NASA-CR-94764] pative additives, single por-deposited tunsten namic meaning of elec-14 p2194 N68-25619

sing principle of max-[NASA-TN-D-4621] 15 p2528 N68-25920

n of mercury metal in unds, ethers, water, and 15 p2575 N68-26226

sstants, thermodynamic data, and is of group 5A and group 6A com-ORO-2733-131 15 p2419 N68-26727

m for solutions to equilibrium and mical state relations for open and closed thermodynar [NASA-CR-1064] 15 p2579 N68-26816

Soviet textbook or amics and heat (FTD-HT-67-182) 16 p2792 N68-27176

podynamics of nickel cad-Electrochemistry and th [NASA-CR-95252] 16 p2593 N68-27548

a physics, mechanical U.S.S.R. studies in ap (FTD-MT-63-[61] 16 p2714 N68-27575

16 p2798 N68-28326

16 p2617 N68-28329

scattering, thermistor, force temperature mea-nts and effects, stress-strain diagrams, and ex-eter in rubberlike elasticity study ity study 17 p2903 N68-28544

Thermodynamic eq in mixed biamuth in m sistivity, Hall, Seebec ons on conduction processes tic field to find electrical re-d Nernst effects, and related 17 p2957 N68-28680

Thermodynamic, spectral, and structural studies of metal ions (MIT-1965-63) 17 p2841 N68-28956

ng point of plutonia and rature research on (GEAP-5395) 17 p2987 N68-29232

Man spectrome modynamics of pra [COO-1182-24] of sublimation and ther-nd gadolinium sulfides 17 p2843 N68-29234

Nuclear data, optical nu odynamic properties and empounds in reactor phy ar model, reactivity, ther-action kinetics of various ed res 17 p2917 N68-29353

namics, chemical analysis, s sections, and burnup, elec-ety, and studies on uranium Progress in thermodynamics nuclear fuel fission, cross section trolytic cells, reactor safety, and and obstonium are reported. [ANL-7375] 17 p2845 N68-29355

ratios, and Hugoniot and Mie-Gruneisen equal [UCRL-70670, REV. 1]

17 p2922 N68-29381 Orthogonal polynomial sets for representing partial and total thermodynamic excess functions for binary

18 p3184 N68-29782 Variational formulation odynamics based on fluct on for non-equilibrium ther-18 p3 84 N68-29790

Activities, /thermodynamic properties relative to ideal system/, in liquid Fe-Cr and Ni-Cr, and liquid Fe-Cr-Ni systems are found

18 p3089 N68-30037 olutions of Percus-Yevick es potential, and statistical and fluid systems ick equation for Lennard-al thermodynamics of rare

18 p3187 N68-30062 ons of state for n ized Fermi gas derived on busis of thermodyna [NASA-TM-X-61034] 19 p3384 N68-31093

Thermodynamic, design of high pre-compound phases [AFCRL-68-0109] and entropy data for iis technique for new 19 p3223 N68-31143

Average width of he dicted by thermodynas [ISS-68/11] m mass spectrum pre-19 p3332 N68-31595

tinuous media 20 p3602 N68-32912 [CAM-100-1] 21 p3752 N68-33705

Radiol tim d other solutions of radial 21 p3794 N68-33999 Bremsstrahlung, thermodynamic, muni-mag-quark models of high energy production processes 22 p3923 N68-34985

cedure and correlation to to form basis of com-reign point performance of axial turbines [NASA-CR-1181] 22 p3953 N68-35101

Set theory app ious phases of ther-22 p3978 N68-35397

and assessment of validi-of elastic stability 22 p3974 N68-35790 Thermodynamic principles and ty of classical energy criterion of a [WTHD-NR-7] ory of electrocapillary curve in-

23 p3996 N68-36044 rtics and thermodynamics for

23 p4012 N68-36902 Thermodynamics of p tory metals, and vacu ics of pilot scale purification of refrac-

(CEA-R-3390) 23 p4078 N68-36938 Statistical mech ally driven systems 23 p4190 N68-37205

Thermodynamics of proton ionization in aqueous solution, using calorimetric and entropy titration methods 24 p4211 N68-37545

THERMOFILASTICITY

Analysis of structures with n-fold symmetry
13 p2157 N68-23249

Dynamical theory of thermoelasticity using form of transport equation that includes time required for ac-celeration of heat flow 13 p2157 N68-23270

Infrared radiometric stress for estimating detectable stress [NASA-CR-1067] instrumentation system neasurements 14 p2357 N68-24971

Thermal shock problems in therm termoelastic cylinders and spheres nermoelastic cylinders nally coupled field equi 15 p2567 N68-25899

stic effect for peak stress mea 15 p2568 N68-26162

Thermoelasticity, thermal diffusion, internal friction, and relaxation in glass fibers 15 p2489 N68-26540

Effects of buffer gas pressure, concentration, and termal elastic collisions on hole broadening in gas thermal elastic coll

16 p2673 N68-27716 Linear thermoelastic problems solved for thermal stress and displacement fields in elastic solids weakened by external circular cracks or plane of

(NASA-CR-95411) 17 p2979 N68-28626

18 p3186 N68-29965

amic response of spherical 19 p3375 N68-31058

of axially unrestrained transversely internal heat

20 p3530 N68-32703 elastic effects in rubber

22 p3897 N68-35808 tic properties of fiber reinforced com-Therm

FTD-HT-67-422) 24 p4273 N68-38305 THERMOELECTRIC COOLING

Cryogenic heat sinks for cooling electronic circuits and equipment [FOA-2-2480-51] 01 p0147 N68-10040

Overheating prevention when placed in high tem-parision of thermoelectric n of small instrument package perature environment - com-c cooling with passive insula-(RAE-TR-67034) 04 p0596 N68-13513

lers for electronic equipment 06 p0926 N68-15786 [NASA-CR-61455] Pettier heating, and cooling molecular kinetics of solidcurrent measurements quid interfac. 09 p1406 N68-18392 on molecular [NRL-6637]

eat removal in water cooled space suits [NASA-CR-1085] 15 p2402 N68-26701 DEX

4985

5101

ther-

5397

alidi-

5790

re im-

6044

6902

frac

and

5938

205

eous

345

249

a of

270

971

and mu-

t in

162

540

716

mai

26

63

cal

58

ed

03

08

03

10

13

is

2

Cascaded silicon-gr

Jet condenser design and Rankine cycle power convers [AGC-3484]

development IMND-3607-239-3, V. 3]

SNAP 19 thermoelectric generator technology

n systems 24 p4199 N68-37637

24 p4297 N68-37951

moelectric test general [NASA-CR-95996]

INSTRU-

INSTRU-

prements on single sce oride and ammonia 21 p3720 N68-34786 Thermoelectric power mean crystals containing hydrogen flu nt of atmospheric dewpoint by ad hygrometers thermoelectrically cooled hygrometers (NRL-6725) 23 pt 094 N68-36436 THERMOELECTRIC GENERATORS SNAP 9A SNAP 10A SNAP 15 SNAP 19 NT SNAP 21 NT SNAP 23 Voyager project study summaries on spacecraft owered by radioisotope thermoelectric generators, lanetary quarantine, redundancy, and data manageplanetary quarantin ment and control [NASA-CR-89994] 01 p0139 N68-10370 Design and impler moelectric generator Voyager spacecraft be (NASA-CR-89995) of radioisotope ther-ng electric power to 01 p0139 N68-10371 Deep sea radioisotope fuele tor power supply system desig [MMM-3691-20] thermoelectric genera-02 p0237 N68-11382 Requirements and state of art review of thermoelec-ic power generation and materials for space applica-02 p0164 N68-11891 Thermoelectric and m ical performance of sil-[NASA-CR-72340] 03 p0303 N68-12252 Parametric analysis of re-celectric generators with radioisotope cascaded ther-th Si-Ge first stage and PbTe second stage [NASA-TM-X-1501] 05 p0695 N68-14585 Effective volume dioisotope power ge density analysis for ith silicon germanium [NASA-TM-X-1453] 05 p0607 N68-14630 Effect of radiois al generators in flight onfiguration 09 p1433 N68-19099 (NASA-CR-93563) Fabrication of three fl germanium solar the NASA-CR-723861 generator 10 p1459 N68-19707 Radiation mapping an radioisotope thermoelec [NASA-CR-93919] nding modules with 11 p1626 N68-20832 Design concepts, ps tion problems of radio tors in space missions [NASA-CR-94042] c analysis, and integra-thermoelectric genera-11 p1741 N68-21204 tion for radioisotope Fibrous type therm (ALO-3633-5) 12 p1983 N68-22550 PbTe-PbSe and PbTe-GeTe materials for ther-(NYO-3886-1) 16 p2683 N68-28090 Low power thermoelect design for supplying underw [REPT.-299] tric radioisotopic generator water accustic beam 17 p2816 N68-29289 Design problems of radi pic generator for space (REPT.-301) 17 p2816 N68-29322 Circuit development for improving low input voltage conversion regulation from primary /radioisotopic fueled thermoelectric generators/ and secondary /bat-(NASA-TM-X-63118) 18 p3005 N68-30197 study of flat plate ther-Design and perform INASA-TM-X-524511 19 p3202 N68-31018 Effect of boost environ solar array, its release as in space, and electrical po [NASA-CR-95999] nt on design of large area ployment on ground and source analysis 19 p3284 N68-31404

n/lead telluride ther-19 p3207 N68-32103 Electrical and physical factors and environmental effects on system performance of silent, multi-fueled dethermoelectric generaturs
[ECOM: 2979]

22 p3807 N68-35221 22 p3807 N68-35221 performance for organic

THERMOELECTRIC MATERIALS ic power converters for spacecraft ap nents and state of art review of thermoelec-generation and materials for space applica FTD-HT-23-796-671 23 p3994 N68-36645 02 p0164 N68-11891 Carinnium sulfide FTD-HT-67-199) rdware for space 23 p4152 N68-36709 NASA-CR-92703] 06 p0771 N68-16071 cts on electrical and ther-moelectric materials 07 p1070 N68-17091 (CEA-R-3399) 23 p4156 N68-37122 m and girconium car-Thermoelectricity bides in cesium vapors (FTD-HT-23-898-67) nt, thermoelectric compounds, super-23 p4157 N68-37191 RECORDING INSTRUMENTS
TEMPERATURE MEASURING
MENTS 11 p1802 N68-21036 Electrical properti cal correlation studie [REPT.-67SD336] pelectric legs - statisti-RIAGGRAPIS
RECORDING INSTRUMENTS
TEMPERATURE MEASURING
MENTS 11 p1746 N68-21269 Thermoelectric pov m oxide 14 p2333 N68-25241 THERMOGRAVIMETRY ivity and open circuit volt rials exposed to experimen Room temperature re age for thermoelectric a tal insulation formulatio [ALO-3633-7, V. 2] NASA-CR-91659 05 p0682 N68-15002 argon environment 16 p2687 N68-27317 THERMOELECTRIC POWER GENERATION of zinc, thermogravimet-de, and rate of solution of Nuclear fuel materials 01 p0095 N68-10806 12 p1840 N68-22890 Engineering and design data verter for SNAP-23A, and pro [MMM-3824-0009] Thermal degradation mogravimetric analysis (NASA-TM-X-60323) subilty, and ther-ne polyments films 15 p2490 N68-26874 ct management plans 03 p0369 N68-12058 Aluminum bonde modules for long-terr [NASA-CR-91349] fluride thermoelectric Thermogravim lower nitride of of [ARL/MET-66] 04 p0446 N68-12831 16 p2615 N68-28190 Research, product tial applic for analyzing cla ermogravim tride mesti ower conversion 04 p0449 N68-13221 16 p2616 N62-28263 [AD-661455] [ARL/MET-69] Portable 560-[AD-662770] tric power module 06 p0767 N68-15230 Thermal degradate nalyzed by combine as in thermoelec-NASA-TM-X-61159 20 p3512 N68-33303 08 p1123 N68-17820 al conductivity, and 24 p4211 N68-37586 SNAP 23A post-test and [MMM-3824-0002, V. 21 09 p1374 N68-18563 THERMOLUME SCENCE Thermomagnetic and therm nprove energy conversion nodynamic cycles electric effects used to efficiency of therand inorganic s 01 p0067 N68-10996 modynamic cycles [DGLR-68-005] 12 p1818 N68-22013 of lithium bornts 04 p0556 N68-13069 SNAP 23A therr converter developme on optical properties MMM-3824-00131 12 p1820 N68-22840 SNAP developm tric power sources in 04 p0558 N68-13683 pace missions SC-DC-67-21191 12 p1911 N68-22898 Thermoelectric power ge tion and heat pumping, electric properties in 04 p0511 N68-13683 AERE-M-1768) 12 p1821 N68-22974 letermine thermolo-thine fleeride 04 p0558 N68-13684 Thermoelectric conv [BMWF-FB-W-68-10] nuclear energy system 13 p1996 N68-24189 SNAP 23A thermo [MMM-3824-0017] 14 p2191 N68-24624 Tollins. of thermionic electric Design and deve 04 p0559 N68-13685 [NASA-CR-54703] 16 p2749 N68-26981 dor centers in lit Three refractory fit of eilicon germani tion of lead telluric 04 p0559 768-13686 ALO-3633-7, V. 1) 16 p2687 N68-27316 04 p0559 N68-13687 m Recride thermole-Electronic energy band str alloys determined by specifi moelectric power, and resistive ecture of vanadium-iron c heat, enthalpy, ther-18 p3151 N68-29906 04 p0559 1668-136 borste for thermo SNAP 23A thermoe [MMM-3824-0620] ctric converter development 21 p3728 N68-34747 04 p0559 NGS-13689 THERMOELECTRICITY Electrothermal and th des of regeneration 08 p1124 N68-17825 04 p0559 N68-13690 Materials, plasma, as unconventional energy ([NASA-CR-93979] ochemical research on on techniques 11 p1628 N68-21035 a of natural calc Thermoelectric power in ce 14 p2333 N68-25241 04 p0380 N62-13693 Temperature and pressure of power and electrical resistivity ductor NiO [AFOSR-68-0982] ffects on thermoelectric of metal oxide mexico-OA p0560 N69-13 18 p3048 N68-30636 electric behavior, and arth monocarbides 20 p3571 N68-32889 Electrical resistivity, thermo-nametic susceptibility of rare or

SUBJE NT CONT IN THE STATE OF THE STA

NAS/

Low and the and pla (PLAS

Thei ablatos spacec (NAS/

Thei tion of ablator (NAS/

The

The

[NASA

FID

NASA

TO ALL

metals IAGN-

Parti [DI-82

Phys

TRG-

Bibli mophys als [AGA]

Tabe

THERM!

readout instrument for mea-04 p0511 N68-13697

single crystals 04 p05 | 1 N68-13698

04 p0561 N68-13699

04 p0561 N68-13700

ce due to applying high

04 p0561 N68-13702 ms, and mea-

04 p0511 N68-13703

04 m0512 N68-13706

try of gamma rays from Nagazaki 04 p0561 N68-13708

04 p0512 N68-13709 n fluoride powders and for thermoluminescent

04 p0512 N68-13710

04 p0456 N68-13711

m of absorbed dose by lithium cent dosimeters for radiation 04 p0512 N68-13713

04 p0456 N68-13714

04 p0457 N68-13715

a rays from ingested cesium 137 in 04 p0457 N68-13716

04 p0463 N68-13717 inescent domineters for igh energy charged parti-

04 p0457 N68-13718

of lithium fluoride to n, and charged particles 04 µ0561 N68-13719

cent docimeters for

04 p0512 N68-13720

04 p0540 N68-13721 lithium fluoride

04 p0513 N68-13722

inescent dosimeters for r measurements in tiny sponse to beta radiation 04 p0513 N68-13724 one to heavy ionizing consurements of anciers alpha and bets irradia-

04 p0562 N68-13725

effectiveness in produc-egual absorbed does in 04 p0503 N68-13726

05 p0727 N68-14055

erite crystal thermo sensitive amplifiers ent dosimeter with charge sensitiv 08 p1181 N68-18006

State of art in soil [BNWL-SA-1543] escence dosimetry 09 p1409 N68-19086

Quantitative investigation termoluminescence, electro of lunar topography, tatic and space charge 11 p1783 N68-21352

recording thermoluminescence glow curve (BNWL-SA-1575) 12 p1917 N68-22600

luminescent dosimeter of readout after manual 12 p1880 N68-23014

m fluoride t ent responses to 13 p2135 N68-23674

nnese activat rate as thermo (RISO-161) 16 p2614 N68-28104

ter characteris (BNWL-741) 20 p3411 N68-32943

cts on photographic, therebotoluminescent dosime-

ters [BNWL-SA-1569] 20 p3413 N68-33498 Phosphor and equi-toring thermolumines [TID-24522] ign for personnel monieters 22 p3818 N68-35959

23 p4152 N68-36709

[FTD-HT-67-199] THERMOMAGNADYNAMICS
U THERMOMAGNETIC EFFECTS

THERMOMAGNETIC COOLING

Cryogenic heat sinks for cooli and equipment [POA-2-2480-51] 01 p0147 N68-10040

THERMOMAGNETIC EFFECTS nagnetism of Marys Peak sill, Oregon, relates og history to its remanent magnetization in

18 p3065 N68-29622 usen effects for pure ty alloys in low magnetic

18 p3087 N68-29772

specific heat measured 22 p3976 N68-34821

THERMOMAGNETISM
U THERMOMAGNETIC EFFECTS

U THERMODYNAMICS

THERMOMETERS
NT RESISTANCE THERMOMETERS

infrared thermometers for evaluating perform of extruder scr [AD-661401] 04 p0515 N68-13300

Cryogenic sensor errors in measurementure in cryogenic fluids
[NASA-CR-92741] 07 ring transient tem-07 p1036 N68-16729

a thermometer surveys of 10 p1523 N68-20264

response of thermon. [AD-667730] r predicting dynamic

13 p2071 N68-24270 neutron counters used as channel power det [HPR-75]

15 p2468 N68-26459 n of deep sea reversing his temperature measur-acquatic studies (NUWC-TP-27)

U TEMPERATURE MEASUREMENT

THERMONUCLEAR EXPLOSIONS

Comparison of multiple neutron capture in nuclear explosives with alternative techniques for producing heavy stements
[LA-3738] 05 µ0704 N68-14041

Summary and reference list of Air Force studies of levices for protecting eyes of flying personnel from hermonuclear induced flash blindness and chori-21 p3643 N68-34539 THERMONUCLEAR POWER GENERATION

Lecture series on nuclear, thermal, and electric ocket propulsion systems and space mission applica-

[AGARDOGRAPH-101] 03 p0370 N68-12184 ic and nuclear thermal propulsion ned space flights and interplanetary

03 p0370 N68-12185

sion systems, and flight dy propulsion systems 03 p0370 N68-12186

ies of radioactive isotope of with nuclear reactor, I propulsion systems 03 p0371 N68-12187

and costs with various d converters, and fast thermal conve breeders with p [KFK-566] ters, adv 07 p1027 N68-16366

10 p1556 N68-20431 (CLM-R-85) 14 p2325 N68-25016

Plasma production and heating by laser radiation with plasma control and production of thermonuclear 18 p3084 N68-30330

THERMONUCLEAR PROPULSION U NUCLEAR PROPULSION

NT CONTROLLED FUSION NT NUCLEAR FUSION

Laser used as energy source for creating ultrahigh temperatures by implosion [ARL-67-0134] 01 p0072 N68-10582

Auto-oscillations of Cepheid model and hypothesis of thermonuclear production of stellar energy 07 p1082 N68-17034

Index spectrum is cluster fuel elements (EUR-3736.E) its in uranium carbide 09 p1374 N68-18534

Mass yield values and kinetic energy distribution ob-tained in thermal fission experiments with uranium 235

09 pl398 N68-19319 **ICEA-R-33091** Scylla experis ts on controlled thermonuclear [LA-3831] 11 p1753 N68-20948

Pulsed thermonision of dense plass [IIF-LA-4] r system for adiabatic compres-

13 p2125 N68-23373 ing skew controlled ther-hinques for creating, heat-

14 p2322 N68-24608

ng combined codes for hermal reactors ermal reactors 14 p2291 N68-24779 (NASA-TT-F-11671) ctivity for high energy physics and con-nuclear research programs

16 p2741 N68-27198 [WASH-1081] Ita interaction in spherical odd mass nuclei [SGAE-PH-64/1968] 16 p2723 N68-27740

physics, thermosuclear Research studies in 19 p3343 N68-31928

[ORNL-4238] 19 p3345 N68-32090 s in thermal cesium

SRRC-CR-68-331 23 p4140 N68-36521 High temperature plasma p soliation of lithium hydrides, production using laser ir-, and plasma interaction

23 p4145 N68-37324 [AFCRL-68-0364] r of population 1 24 p4342 N68-38063

Technological level try in U.S.S.R. and othe [NIC-TRANS-2653] on of atomic indus-24 p4320 N68-38243

THERMOPHILIC PLANTS
U BLUE GREEN ALGAE

13 p2062 N68-23867

NASA-THE-X-431961

Rocket-borne mass spe-outral density and composi-

EX	SUBJECT INDEX	
tric ica-	NT CRITICAL PRESSUR NT CRITICAL TEMPER/ NT EMISSIVITY NT HEAT OF SOLUTION NT MELTING POINTS NT PYROELECTRICITY NT SPECIFIC HEAT	Decoupling
tion tary 185 pul- tric	NT PYROELECTRUTY NT SPECIFIC HEAT NT SUPERCRITICAL PR NT THERMAL CONDUC NT THERMAL DIFFUSIONT THERMAL DIFFUSIONT	ESSURES TIVITY ON
186 ope tor,	NT THERMAL STABILIT NT VAPOR PRESSURE NT VOLATILITY Mathematical model for in multilayer systems with va- perties [NASA-TT-F-11444]	heat conduction problem riable thermophysical pro
Cus fast 066 bic	Low temperature effects and thermal properties of the and plastic fears. (PLASTEC-30)	on mechanical, electrica hermoplastics, thermoset 04 p0526 N68-1322
131 ear 016	Chemical and spectral and mophysical properties, reac- lar studies for materials resea Pressing and sintering effe mophysical properties of the	or p1000 Nos-1033 ects on electrical and the rmoelectric materials 07 p1070 Nos-1709
ion ear 130	Thermophysical propertie ablators, insulations, seals, i spacecraft [NASA-CR-65979] Thermal properties of spa- tion of aluminum homoyou ablator materials.	s of structural material and adhesives for manne on place NAR-1846
	[NASA-CR-65980] Thermophysical property materials for Apollo spacecr feauration	09 p1449 N68-1885 measurements on abiativalt propulsion system cor
82 sis 34 ide	(ÑASA-CR-92018) Microstructure and physic ties of carbons and graphites (LA-3758) Mathematical models for p	al and mechanical proper 11 p1718 N68-2089
34 35 19	Mathematical models for p creep, stress-strain, and fat AGARD material property is (AGARD-\$10) Thermal analyses of antim- brouside reactions with corre- clements	ony chloride and antimon esponding halides of alka
48 m-	Extrusion casting of thin	walled namels and ther
73 er- nt- 08	Thermophysical properti	ies, specific heat, an 16 o2668 N68-2736
79 n-	Thermophysical properties lators measured at cryogenic (NASA-TM-X-60999) Semiempirical equations of thermophysical properties in flows of various fluids.	for incorporating variable nonisothermal turbulen
al 40 ar	(FTD-MT-24-115-67) Cyclic incident radiation m mal emittance and absorptic cryogenic temperatures [NASA-TM-X-1618]	properties of metals a 19 p3385 N68-3149
in g- on	Thermophysical and heat to metals [AGN-8195, V. 1] Particulate thermophysical [D1-82-0729] Physical according of some	19 p3386 N68-31743 model of lunar soil 20 p3588 N68-33023
m li r-	Physical properties of some gounds - desia manual [TRG-1601/R/]. Nonstationary thermal co- variable thermophysical pro- and radiative heat transfer (FTD-MT-66-173]	aduction in metals with perties during convective
3	Bibliography on measurem mophysical property data of als [AGARD-AR-12]	22 p3978 Pets-3534: sent techniques and ther high temperature materi 24 p4354 N68-3776
3	Tabulated thermophysical (AFML-TR-48-98) THERMOPHYSICS U THERMODYNAMICS THERMOPLASTIC FILMS U FOLYMERIC FILMS	fata for meterials 24 p4355 N68-38210

9

THERMOPLASTIC RESINS

NT POLYMETHYL METHACRYLATE s on bonding to polyethylene PA-TM-17971 02 p0224 N68-11270 16 p2590 N68-27946 noplastic solid feels by te combustion 17 p2985 N68-28607 techniques with ther-Photographic reco monitoric media (FTD-MT-66-75) 18 p3075 N68-30176 Manufacture, testing, and calculation of composite outructions of glass fiber reinforced plastics and ther-(M-7352) 21 p3707 N68-33615 ng and coloring agent in thermoplastic polymeric (TRANS-1536) 22 p3896 N68-35525 Chlorinated polyethylene and polyvinyl chloride ad-tions to thermoplastic polymer blends 23 p4082 N68-36534 THERMOPLASTICITY stresses in variable face formed by rotation of X axis 18 p3173 N68-29611 of elustoplastic deforma-erhods of solving ther-seding considered 18 p3174 N68-29647 tions, and approximate mapparticity problems with it THERMOREGULATION Thermoregulation med work [NASA-TT-F-11635] 10 p1462 N68-19749 Respiratory systems role in thermoregulation during 10 p1466 N68-20161 Critical points of basermomodulated refle re of graphite by using [155-67/32] 13 p2136 N68-23779 Dynamic aspects to a discountries of the same appearance of the same and behavior ture regulating system, al system, central nor-namels (NASA-CR-97316) 24 p4202 N68-37722 NT EPOXY RESINS NT PHENOLIC RESINS NT POLYAMIDE RESINS em for producing air-Feasibility of thermoels craft prototype wing tanks 16 p2590 N68-27946 Effects of nuclea thermosetting polyn (AD-671093) mical properties of 19 p3297 N68-31115 THERMOGPHERE Structure of thermosp [NASA-TM-X-60604] here and its diurnal variations 01 p0061 N68-10850 zide cooling in Atomic oxygen and ca planetary thermospheres [NASA-TM-X-60766] 04 p0574 N68-13262 Vertical motions in upper thermosphere deduced from tures and infrared heating rat [NASA-TM-X-60767] r mesosphere and lower rocket measured tempera-04 p0500 N68-13279 Radiative host tra d thermal structure of NASA-CR-925421 06 p0911 N68-15662 for glow clouds resulting grenadus in lower ther-

Oreen function solutional equations of consistency in thermosph

[TR-0158/3260-10/-3]

Analytic Greens for response of thermosphe [TR-0158/3260-10/-5]

Satellite measuremen neutral thermosphere (NASA-TM-X-43198)

MIT-2241-35)

13 p2064 N68-24117 [BMWF-FB-W-68-05] Full wave calculation spheric model of high a [NASA-TM-X-63227] 15 a2458 N68-25776 midistitude and survey (NASA-TM-X-63291) 19 p3270 NGC-31337 Collecting lower the re data by global satel-[NASA-CR-45641] 21 p3684 N68-33666 Chemical heating a mation of helium bulg [NASA-CR-96815] Black Breat 3 probe ad temperature of low BMWF-FB-W-68-53) on density, comp 22 p3871 N68-35649 U THERMAL STABILITY THERMOSTATS Spacecraft thermosis design analysis using Fo [NASA-CR-39909] Ol p0147 1968-10081 U ANSOTROPY U TEMPERATURE EFFECTS THERMOVESCOELASTICITY Thermal shock problems in termoclastic cylinders and up tally coupled field equation 15 p2567 N68-25899 or of styrene-butadiene rebber, and equal biaxial deformations, 21 p3708 N68-33982 AD-6636991 08 p1228 N68-18007 Industrial and univ possible cummercial a [NASA-CR-95703] ion of theses for 17 p2991 N68-29257 or viacous surface waves 24 p4244 N68-37584 THETA PINCH or controlling inegatoule frame of carcillescapes 01 p0039 N68-10882 to achieve collisionless (PP-[/71] [IPP-1/70] 04 p0552 N68-12863 rats of argon pi 04 p0535 N68-13902 Numerica places with IPP-1/72] Q5 p0725 1468-14767 d planter by fast mag-09 p1401 N68-18572 NP-16754) ection of Inhomory sciral lines 15 p2126 N68-23781 NRL-66381 07 p0992 N68-16778 characteristics of approximate one dimen-tion of man, momentum, and expressed in isobaric 16 p2737 1688-27817 Time dependence of county floated in these agnetic field CTO-446] energy and the primary charge with manufacture 09 p1332 N48-18371 solution for dynamic impulsive heating 18 p3144 768-36264 20 p3554 N68-32432 11 p1687 N68-20751 e scale motion in thermo-[177-1/80] 12 p1868 N68-22628 wave propagation in (199-1/78) 20 p3555 1968-32502 13 p2061 N48-23695 A-1297 Two dimensional passed by transverse m [IPP-1/81]

plasma by Mach-Ze AFOSR-68-08781

SFT-2582-25

IPP-4/651

Plasma preheating in megajoule theta pinch device for subsequent magnetic compression [NASA-TN-D-4708] 20 p3559 N68-33372

Plasma dynamics, Mach-Zender interferometers, remastrablung, fast scintillators, and theta pinch SIT-2582-25 23 p4141 N68-36669

Operational and service life experience with Isar 1

ma rotation in theta pinch netic fields 20 p3559 N68-33449

24 p4328 N68-38500

n in theta pinch deuterium

der interferometer 22 p3943 N68-35430

SUB

0

B

Ele tric s layer [FTL

Fai icon I (BCC

Nor

CONDU

Thi

Phy device [AFC

proper

Cad (TN-I

Bibl applica NOL

Thie

electro [JPRS

film tu

Tran

Heat

(HDL

ECON.

for mic (ECON

Then

UCILL

Thin

NCEL

ECOM

Trans tion stu-titanium

11 p1667 N68-20973

Kinetics of oxide film growth on metal surface [SC-DC-67-1632] 11 p1651 N68-21090

Then

Thin

THICK FILMS Thick film vacuum deposition of silicon dioxide by sputtering for solar cell coverslips [NASA-CR-97123] 23 p3992 N68-36241 THICK WALLS Single-thermocouple in thermally thick walls [NASA-TN-D-4737] e method for measuring heat flux 20 p3611 N68-33208 THICKENED LEADING EDGES U LEADING EDGES THICKENERS [MATERIALS] Thickening effect of lith soup in oil-soup filler three component systems [FTD-HT-67-225] 07 p1012 N68-16725 Poly/metal phosphinates/ coatings and lubricant thick [AD-671882] / as antistatic and protective 20 p3511 N68-32957 THICKNESS

NT FILM THICKNESS

NT TARGET THICKNESS Equivalent material thickness n for gar ORNL-TR-1666 01 p0114 N68-10840 Electrolysis cell for electrock dution thicknesses mical studies of small 10 p1488 N68-20099 Airfoil pressure gradient perturbation effects on tur-bulent boundary layer thickness [ARC-CP-986] 15 p2382 N68-26566 Thickness and space on hermal radiation properties and inorganic contings for sp nt simulation on emittance ceramic and inorganic coatings [NASA-TM-X-59389] 16 p2793 N68-27441 Comparing microbalance weight measurement, X ray fluorescence, and Rutherford dispersion, for measuring small ([NP-17365] 18 p3075 N68-30340 Using gamma ray excited X rays for measuring hickness of electrolytic deposits [NP-17351] 18 p3027 N68-30392 Relation of adhe (ERDE-5/M/68) on joint strength 20 p3509 N68-32517 THICKNESS RATIO ical parameters, and ef-surbulent flow 06 p0826 N68-15458 Analogy between meteorological fact of streamline curvature on turb [NPL-AERO-1231] 06 THIN AIRPOILS NT INFINITE SPAN WINGS Thin airfuil theory for predicting effect of varying axial velocity on quasi two dimensional flow through 15 p2453 N68-26204 Simple method for calculating smoot on thin airfoils with small angle of incid (EE-TRANS-1684) 20 p3: th subsonic flow 20 p3391 N68-32479 Hydromagnetic flow past thin symmetric airfoil in uniform magnetic fields 22 p3939 N68-34947 THIN BODGES magnetohydrodyna nwardly diffusing magnetic field 15 p2528 N68-26013 nic flow past thin notic field THIN PILMS NT ENERGY ABSORPTION FILMS NT FERROMAGNETIC FILMS NT MONOMOLECULAR FILMS Crystal structure, solids-electromagnetic interac-tions, and physical properties of single crystals, thin films, and bulk solids [NASA-CR-89535] 01 p0121 N68-10097 Electrical and op perties of amorphous thin [NASA-CR-89982] 01 p0123 N68-10300 fectrical design and scho film personal comm ling of components for (NASA-CR-914) 01 p0037 N68-10420

superconducting thin films of tin and indium used in nuclear particle detectors [Al-67-74] techniques for fabricating thin film capacitors [NASA-CR-65805] 01 p0125 N68-10671 Rare earth dielects [NASA-CR-90301] thin film capacitors 02 p0257 N68-11024 Thin-films for imp icon integrated circuit ECOM-01230-91 02 p0187 N68-11197 Sputtered molybde ulfide film deposition and friction characteristics in vacu [NASA-TN-D-4269] m 02 p0222 N68-11644 Growth and analysis of thin film piezoelectric trans-ucers in study of electron phonon interactions in [NASA-CR-90540] 02 p0259 N68-11809 Materials, technique eramic thin films to blems in application of actors, dielectrics, and [AFML-TR-67-226] 03 p0328 N68-12093 Thermal detector based on thin film capacitors capa-ble of approaching theoretical maximum detectivity at 03 p0329 N68-12312 Low energy sputtering method for thin film produc-[AAEC/TM-349] 03 p0334 N68-12530 Thin film develop for superconducting com-ORO-2430-401 03 p0409 N68-12590 in film optical filter evalua-display device 04 p0542 N68-12909 Multilayer, dielectric, th tion using cathode ray tube di [NASA-TM-X-58013] Dynamic model for photove taic mechanism in this film solar cadmic [ARL-67-0190] 04 p0555 N68-13015 otovoltaic solar cells 04 p0449 N68-13216 Thin film gallium: [NASA-CR-72308] High frequency three-measurements on thin se [FTD-HT-66-414] tor for parameter ucting films 04 n0508 N68-13224 Ellipsometric measurement on refraction index of single silicon crystal [NASA-CR-91509] 04 p0474 N68-13798 Film flow model applied or predicting burnout time d to transient flow conditions [AEEW-R-542] 05 p0755 N68-14605 Radiation effects on thin film integrated circuit ele-[REPT.-8] 05 p0639 N68-14677 Carbon monoxide adsor-nickel, and iron film surface n heterogeneity on thin 06 p0786 N68-15043 Field-ion microscopic study of thin film deposition of iridium on molybdenum [AERE-R-3608] 06 p0853 N68-15113 n on thin gold films, and 06 p0786 N68-15203 Calorimetric measurer on thin nickel film surface of hydrogen adsorption 06 p0786 N68-15214 Adsorption and effects on electronic properties caused by carbon monoxide on copper films of various thickness 06 p0787 N68-15269 cope study of thin zirconium oxide fil [AECL-2794] 06 p0894 N68-15702 High performance thin on for microcir-06 p0816 N68-15789 [ECOM-01230-10] Interference optical me radiation by increased thick (ISL-T-25/66) ements of microwave on impacted thin film 07 p1034 N68-16156 Formation and properties of oxide films on silicon 07 p0953 N68-16196 m telluride vapor deposited thin film electrical FTD-HT-23-634-67] 07 p1065 N68-16278 Computerized electronic semiconductor thin film active d [NASA-CR-92929] circuit design, and 07 p0973 N68-16548 circuit for thin film per-lemetry system 07 p0963 N68-16583 Voice operated sw [NASA-CR-65938] electron activated application to data 07 p0974 N68-16621

Thin film, solid state material deposition and fi tion techniques for star detector strips with elec readout for star pattern recognition from ap [NASA-CR-92671] 07 p1068 N68-16822 Design, and perform nce of gold-silver-gold film 07 p0975 N68-16961 Assembly and development of radio frequency po-tions of transmitter and receiver in thin film personal communications and telemetry system [NASA-CR-65937] 07 p0967 N68-17170 97 p0967 N68-17170 Thin film solid rege-sorber plate to determin [NASA-CR-66529] e adsorbent for use with 07 p0952 N68-17175 Simultaneous dete thickness of very thin [NASA-CR-93[74] of refractive index and 08 p1208 N68-17268 germanium, and silicon n, and thermal annealing 08 p1223 N68-17613 Structural changes [NASA-TT-F-10466] Radiation effects on th [CERTS-NT-02-2] solar cells 08 p1120 N68-17650 and X ray analyses on ybenzyl glutamate films 08 p1191 N68-17893 Swelling, birefring layered structure of so [ONR-TR-RLT-103] als for thin film dielectric in con-umidity sensing element in elec-Hygroscopic materia enser to be used as he tric hygrometer [AFCRL-67-0543] 08 p1180 N68-17905 Deposition of integral quartz coatings on silicon solar cells by radio frequency sputtering [NASA-CR-93408] 09 p1273 N68-18451 Development, and evaluation containing sodium niob niobate dielectric material [NASA-CR-65986] n of thin film substrates capacitors, or sodium 09 p1314 N68-18502 Transmitter audio amplifier todule, summing network m mplifier for thin film person er module, low pass filter modules, and operational telemetry system [NASA-CR-65989] 09 p1302 N68-18543 Technique and app effect in thin films [AFML-TR-67-299] is for measuring Mossbi 09 p1341 N68-18555 System package design for thin film radio frequency transmitter receiver circuit modules [NASA-CR-65988] 09 p1303 N68-18780 Thin film transport in polymer dielectrics, fabrica-tion of semiconductor devices having digital or discon-tinuous responses, and chemical vapor deposition of enoutic dielectric films. exotic dielectric film [NASA-CR-93543] 09 p1342 N68-18931 Use of surface replication, extraction replication and thin film electron microscopy in study of microstructures of dispersion strengthened materials [NASA-TN-D-4461] 09 p1353 N68-18999 09 p1353 N68-18999 Magnetic properties, and lattice dynamics of solids, ad thin films [COO-623-127] 09 p1409 N68-19080 Superconductivity of dis formed by vapor deposition [NOLTR-67-168] tered tin and lead films sition at low to 10 p1578 N68-20062 Electrical impedance cha films at infrared frequencies [NASA-CR-93772] nce characteristics of thin bismuth 10 p1581 N68-20347 ign criteria 10 p1461 N68-20410 Cadmium sulfide ([NASA-CR-72382] Construction and performan sulfide thin film solar cell arrays [NASA-TM-X-1519] e of active cadmium 10 p1461 N68-20432 and nuclear magnetic 10 p1582 N68-20504 New method for preparing thin films of Alnico alloys or electron transmission studies - characterization of lectron diffraction and microstructure during phase 11 p1710 N68-20603 rized thin film probes and application 11 p1638 N68-20663 e performance of thin magnetic films in etric amplifier operating over extended tempera-11 p1672 N68-20792 Nucleation, condensation rates of single crystal thin fit [AFML-TR-67-410] n, and subsequent growth 11 p1770 N68-20808 Design feasibility of integrating small magnetic memory on single substrate [NASA-CR-61702] 11 p1667 N68-20973

INDEX 68-16822 gold film 68-16961 ency por-68-17170 use with 68-17175 index and 68-17268 nd silicon annealing 68-17613 68-17650 alyses on te films 168-17893 ric in con-68-17905 licon solar 68-18451 r sodium 68-18502 68-18543 Acusbauer 68-18555 frequency 68-18780 , fabrica-or discon-outtion of 68-18931 plication of micros 68-18999 of soli 68-19080 lead films re 68-20062 n bismuth 68-20347 68,20410 cade 68-20432 magnetic 68-20504 nico alloys rization of ing phase 68-20603 pplication 68-20663 films in tempera-

68-20792

nt growth

68-20808

magnetic

68-20973

68-21090

(NOLC-745)

Cold substrate deposition of thin film resis Thin films of deposited by reactive and carbon coated gr [AFAL-TR-67-345] [NASA-CR-86044] 11 p1673 N68-21230 Optical profilor film circuit element [SC-CR-67-2509] ruring precision thin Chemical vapor deposition crystal lithium ferrite thin fi (NASA-CR-86063) 11 p1698 N68-21244 Balloon and sate thin film solar cells [ARL-67-0282] tests of cadmium sulfide Structure and compositi mperature oxidation of al 11 p1631 N68-21602 um, aluminum, and y [RD/B/N-1006] for thin film tantalum re-it design for resistor net-using metal foils for space turing pr and capacitors, circ and printed circuits BMWF-FB-W-67-221 11 p1675 N68-21687 centered on this cir-magnetic fields for and mobility in this Square array of point c lar samples with perpetermining charge carrie miconducting layers 12 p1952 N68-21914 nmary data on deposition and endurance lives of metallic films used for lubricating sliding and g element electrical contacts in vacuum environ-(NASA-TN-D-4476) 12 p1881 N68-21979 balloon flight test de Electrical breakdown tric materials and thin fi layers, and oxide surfac [FTD-MT-24-148-67] characteristics of solid dielec-ns - organic glass and celluloid 12 p1954 N68-22135 kali halides, and thin [NASA-CR-95725] Final stage of pulse ele dielectric discharge ctrical breakdown during solid Optimum supercor devices applied to extre [NASA-CR-66633] 12 p1954 N68-22137 Electrical breakdown of oxide layer on aluminum surface as function of film thickness 12 p1954 N68-22138 Measurement of sh hin magnetic films on techniques for, and thin film transistors 12 p1848 N68-22145 Vacuum deposition fabrication properties of, evaporated silicon th Fabrication and cha s of hafnium and sil-(ECOM-01230-11) (NASA-CR-86084) for microcircuits 13 p2039 N68-23185 thin permalloy films thin film sandwich str [AFAL-TR-67-347] 13 p2134 N68-23529 Thin film tempers sounding rockets to (ECOM-5188) Nonlinear microwave effects in superconducting films with respect to rectangular waveguides with thin conducting film [UTEC-MD-68-029] 13 p2134 N68-23557 Preparation and optical properties of semiconductor comporters on electronic control of the cont Thin film widehand t de amplifier 13 p2040 N68-23677 and CdSe (HP-22) ctronic materials, devices, and thin film [AFCRL-68-0091] 13 p2137 N68-23849 for determining fear [AGC-1166-01-3] Surface structure, and electrical and photoelectrical properties of thin lead sulfide films obtained by cathode sputtering 13 p2139 N68-24081 lar cella 13 p1997 N68-24297 n sulfide thin film a Optical and electrical pro [TN-1967-52] reparation, properties, conducting thin films 14 p2328 N68-24349 ographical survey or tions, and theory of se Thin film vacuum d n in microminiaturized [NASA-TM-X-52458] electronic circuits [JPRS-45406] 14 p2230 N68-25408 tests of cade Space environment in fide thin film soinr cells (NASA-TM-X-52436) Electron microscopic study of deterioration in thin film tunnel cathodes [NASA-CR-66617] 15 p2436 N68-25757 Jet chemical polishing applicon thin samples for obe thin gold films by low Transmission sput energy hydrogen ions electron microscopy [ESRO-TM-112] 15 p2539 N68-26336 Heat transfer analysis of thin film resistor pulsed to cause low power explosion [HDL-TR-1376] 15 p2436 N68-26442 waveguide windows at a [NASA-CR-66655] 15 p2436 N68-26442 Silicon oxide film prod pyrolysis of tetraethoxysila (ECOM-2918) (AD-671049) n by low temperature 15 p2490 N68-26573 Optics conference protion, diffraction and spaceborne television eq. (REPT.-00015/PR/ED) ices and electron optics use device 15 p2435 N68-26736 Thin film mosaic st for microminaturue [ECOM-01261-11] technique of preparing oft X ray spectroscopy 15 p2525 N68-26829 Fabrication of thin fli ent in far ultraviolet rmal vac Thermal vacuum evap pure plutonium thin layer [UCRL-TRANS-10232] Fabrication of concave diffraction gratings on beryl-Thin film optical trans [C7-929.1/501] 15 p2438 N68-26957 Thermionic emission, and varistor thin film diode for vo [NCEL-TR-575] d current-voltage data on oltage regulators 16 p2630 N68-26982 er program for qua rographic photopla (ECOM-2968) Radiation effects on thin film integrated circuit ele-Dielectric properties of the and neodymium fluoride film (FTD-HT-23-507-67) ECOM-02431-F) 16 p2631 N68-27076 Transmission electron microscopy and X ray diffrac-on studies of phase transformations in thin films of tunium-nickel

16 p2676 N68-27270

Method for measuring di lophane exposed to moisture [PUBL-250CE] nul changes of culnitrogen compound g on quartz substrete 19 p3299 N68-32186 16 p2744 N68-27453 l ion pumping concept for vacuum deposition of thin Footibility of different ducing pressure during wth of epitazial single 16 p2745 N68-28034 [NASA-CR-93949] 19 p3287 N68-32187 n of oxide films after high CdO films used as t CdS single crystal and fi [RTS-4335] ent obnic contacts for 20 p3561 N68-32291 16 p2614 N68-28107 n layers of indian antimo-metic field measurements 20 p3562 N68-32324 Hall effect gages using d transport in this nide with applications to magne [FTD-HT-23-996-67] 17 p2953 N68-28406 Optical and electrical pr perties of yearbine this and charge, discharge and cs of thin film nickel oxide 20 p3570 N68-32883 nium sulfide thin Development and test film solar array subpanels [NASA-CR-72439] 17 p2810 N68-28717 g of cade lar cells, and relative efficien-nd thin film cadmium sulfider 20 p3403 N68-33207 Optical absorption ts in thin semiconduc-17 p2814 N68-28739 Mesign of infrared tra MgO thin films [GR-8] 21 p3752 N68-33619 er cell models, and oron filters using LiF and 17 p2814 N68-28742 21 p3661 N68-34408 taxy of fee metals on al-Critical field behavior of superconducting thin fit lead, tin, and indium quenched on substrates at 17 p2959 N68-2907E ICOO-1054-411 thin film tunneling frequencies 17 p2960 N68-29425 21 n3757 N68-34741 Vacuum ultraviolet cryogenic thin film rare go 22 p3946 N68-34816 ced biaxiel anisotropy in Soft X ray diffraction by a yered thin film struc 18 p3148 N68-29578 Nucleation and growth of iron and vanadium thin ms to observe polymorphic transformation using 22 p3947 N68-34892 Product developm ting of thin film oxygen 18 p3153 N68-30196 NASA-CR-11821 22 p3875 N68-35149 in evaporated aluminum and properties and ap-radio frequencies 22 p3949 N68-35178 18 p3046 N68-30230 r, /thermistor/, used in nospheric temperature 18 p3076 NoS-30415 morphology and light Polytetrafficoroet scattering diffractio (ONR-TR-1081 22 p3917 N68-35325 al properties of epitaxial the compounds, and effects electron diffraction of Crit Thin film hybr it design principles and 22 p3847 N68-35372 18 p3154 N68-30427 Measurement of ski means of heated this fit [ARC-R&M-3490] c electronically tuned receiver tuner estibility of thin film microelectronics 18 p3037 N68-30478 22 p3861 N68-33475 Extrusion met chloride films [TRANS-1534] scturing rigid polyvinyl Strain effects on superconducting transition tem-nature of vacuum deposited thin indium film 19 p3346 N68-30909 22 n3883 N68-35615 ties of thin files of rare 22 p3952 N68-35890 19 p3349 N68-30973 y of magnetic domain storage application 23 p4025 N68-36167 in film solar cell 19 p3202 N64-31068 23 p4149 N68-36280 19 p3202 N64-31095 a of this polycrystalline Structure and grown oxide films on metal or [NASA-TT-F-11903] us for preparation of tion by transmission 23 p4075 N68-36323 19 p3283 N68-31192 re of titonium-oxygen te by reactive evaporanaion in thin film high frequencies 19 p3352 N68-31240 23 p4078 N68-34917 RAE-TR-680121 were of this (line [BNL-11901] 19 p3353 N68-31334 23 p4155 N68-37019 ngs on thin film fabrica-ference gratings, and Technological pro-23 p4158 N68-37301 19 p3316 N68-31528 Integration and testing of th nications and telemetry system [NASA-CR-92323] h high reflection coeffi-23 p4023 N68-37330 19 p3284 N68-31529 24 p4266 N68-37480 19 p3285 N68-31531 of order Named Side tive interpretation of 24 p4244 N68-37679 19 p3253 N68-31619 eadymium, cerium, 24 p4262 N68-37983 19 p3355 N68-31654 tion magnetic field for -24 p4217 1968-37964 19 p3356 N68-31967

SUE

[N

THEN

THE

THE

49

th

18

THI

10

U

d

0

THE

Gas adsorption and thickness effects on ther-modynamic properties of thin nickel films exposed to carbon monoxide 24 p4332 N68-37985

Review of production and physical properties of thin metallic films /10-1000 A thick/ [FTD-MT-24-261-67] 24 p4334 N68-38226

Wave conditions of thin layer viscous fleid flow under gravitational effects [FTD-MT-24-243-67] 24 p4247 N68-38262 Optimization of magnetic properties of thin fer-

(FTD-HT-23-784-67) 24 p4334 N68-38299 THIN LAYER CHROMATOGRAPHY

charides, and sugar derivatives 01 p0021 N68-10453 ic methods for analyses of Thin layer chrom sugars, higher polysacci [SGAE-BL-20/1967]

Laters, quantum mechanics, ion exchange properties of zirconyl phosphate, electrochemical processes, thin layer chromatography, chemical analyses, reaction (FTD-MT-64-359)

06 nO 202 http://dx.doi.org/10.1001/10.1001/10.

ver chromatography of 2,4-risomeric ketones 06 p0794 N68-15964 Aluminum oxide thin layer clutrophenyl hydrazones of ison

Electrochemistry in thin layers of solution, and verification of theory of chronopotentiometry, chronocoulometry, and voltammetry in simple systems etry in simple systems 10 p1490 N68-20126

of thermal styrene Cromatographic ana polymerization reactions 14 p2209 N68-24430

Thin layer chromatographic techniques for labeling [CNEA-235] 21 n3650 N68-34105 THIN PLATES

Flexure problems for thin rectil ilinear plates 01 p0145 N68-10782

Sensitivity of hypervelocity impact mechanisms to projectile-plate configurations 03 p0424 N68-12665

onation wave structure for condensed explosives servations of free surface velocities of thin metal 04 p0598 N68-13880

Stability theory for thin elastic heterogeneous anisotropic plates of variable rigidity [NASA-TT-F-11346] 05 p0747 N68-14349

Matrix method for static calculations on thin elastic 06 p0918 N68-15212

Matrices for approximate an thin plates subdivided into elen e analysis of inhomogeneous

06 p0920 N68-15436 Soviet research on thin plate and shell theories for nicraft and engine design applications 08 p1251 N68-17683

ar system of partial differential equations for ng dynamic stability of plate 11 p1794 N68-20918

Linear stability criteria for panel flutter of thin plates nd thin-walled cylinders and thin-walled cylin [NASA-CR-89183] 14 p2359 N68-25338

d strain distributions in ute under load 14 p2360 N68-25387

onary combustion of 16 p2794 N68-27605

er programs for bending of plates of arbitary I mixed boundary conditions of free vibration Com tapes and mix

16 p2790 N68-28318 all elastoplastic deforma-

18 p3173 N68-29630 of spectro of isotropic thin, flut, and elastic AE-21651

18 p3179 N68-30292 Theory and design of the stability of shells and plates [FTD-HT-66-571] in walled shells, including

18 p3180 N68-30362 n of hypervelocity projectile

Laboratory simulation of impact on thin structural plan [UDRI-TR-68-18] 20 p3601 N68-32754

Croep stress concentration at finite thin plate subjected to un n at small circular hole in o uniaxial tension 20 p3604 N66-33153

ed vibrations of thin plates, and free vibrations (FTD-HT-66-648) 20 p3605 N68-33326 Forced vibrations of thin plates with random loads, ad acoustic fatigue considerations 20 p3605 N68-33327

Momentum distributi debris cloud produced by (GSF/MC/68-4) 24 p4349 N68-38076

na for orth otropic thin plates 24 p4351 N68-38234 1FTD-HT-23-624-671 THIN WALLED SHELLS

Edge effect theory for postcritical deformation and stability of aloping spherical segments of thin walled convex shells

02 p0278 N68-11678 Instability of thin skin cylinders in compression toac-ing - ELDO launch vehicle first stage 02 p0279 N68-11834

Differential system and transfer matrices of bending theory applied to general rotating shells 03 p0418 N68-11910

odal response of thin cylindrical shells 7] 03 p0419 N68-11967 [NASA-CR-897] Analysis of linear elastic thin shells of revolution su jected to arbitrary temperatures and loads - comput program users manual [NASA-CR-65862] 03 p0419 N68-120

03 p0419 N68-12052 Second order correlations thin shell displacement lateral pressure relation function of linearly elast ment field subjected to rando

[TR-6] 04 p0588 N68-13313 Stress states of thin walled cylindrical shells sub-cted to transverse bending and internal pressure 04 p0591 N68-13847

Vibrational characteristics of thin shells - review of salytical methods, fabrication methods, and publica-

[NASA-CR-91681] 05 p0747 N68-14199 Linear theory of this (NASA-TT-F-11562)

06 p0920 N68-15319 tion of stresses at opening in thin walled cylindrical pres

07 p1088 N68-16180 Membrane shell theory and digital computer program for determining impedance characteristics of thin conical shells under axial excitations [NASA-CR-92989] 07 p1089 N68-16339

Contour plots tabulated for stress resultants and eformations brought about by sinusoidal in plane line ads acting along great circles of spherical sa Echo type [NASA-TN-D-4425]

10 p1599 N68-20198 Axisymmetric vibration of walled conical shells 10 p1609 N68-20536

Elastic and plastic response of shell to axisymmetric internal in of thin walled cylindrical impulsive load 10 p1609 N68-20540

Resonant frequencies and nodal pattern modes of vibrating cylindrical and conical frustum shells [NASA-TN-D-4428] 11 p1794 N68-20954 Analytical method for ob

ing shape and thickness um weight 11 p1795 N68-21056

dels manufactured by amate bath 11 p1705 N68-21214 Thin walled wind tunnel mo electroforming using nickel-sulfa [DLR-FB-67-94] Finite element analysis of thin shell, convergence of approximations obtained, and stiffness matrix expressions for triangular curved shell element

12 p1976 N68-22240 Dynamic stability of thin walled elastic shells and ap-

trol problems 13 p2159 N68-23453 NASA-CR-9491 dure for thin walled circu-Stability calculation procedure for thin walled circular cylinders in post-buckling region [DLR-FB-67-70] 14 p2355 N68-24684 Stability calcule

Transverse shear deformation in thin shells of revolu-14 p2357 N68-24956

Stress analysis of initial post-buckling behavior and sperfection sensitivity of thin walled cylinders in tor-[NASA-CR-88232] 15 p2565 N68-25683

rotational thin walled Stress analysis met shells and domes by me [NASA-CR-87648] ite element procedure 15 p2566 N68-25746

Mathematical method for investigating stability of in walled cylindrical shells of infinite length under (SUDAAR-329) 15 p2567 N68-25999

on nonlinear flexural cylinders 16 p2776 N68-27211 Extrusion hot mold easting of thin v thin walled panels 16 p2667 N68-27359

Alloy casting of thin walled panels by slowing extru-

16 p2668 N68-27361 Stress analysis and functions in membrane analysis of scalloped thin walled shells like parachutes [NASA-TN-D-4687] 17 p2981 N68-28832

Theory and design of thin walled shells, including stability of shells and plates
[FTD-HT-66-571] 18 p3180 N68-30362

Stability analysis for thin closed cylindrical glass fiber shells under axial compression [FTD-HT-67-387] 19 p3377 N68-31308 19 p3377 N68-31308

Linearized shell theory las for correlation functi critical deformations quations and general formu-ns of thin elastic shell sub-

19 p3378 N68-31709 Axisymmetric buckling of thin walled spherical shells

(SUDAAR-332) 20 p3600 N68-32538 Residual stress effects on fracture strength of AISI 301 stainless steel and Ti-5AI-2.5Sn titanium cracked thin walled cylinders [NASA-TN-D-4777] 20 p3604 N68-33191

Forced vibrations of thin plates, and free vibrations of thin shells.

[FTD-HT-66-648] 20 p3605 N68-33326 Free vibrations of primatic shells of monocoque type airplane wing in supersonic flow 20 p3605 N68-33328

Computer program for stress analysis of cylindrical essels with flat ends 21 p3783 N68-33791

Formulation of general equations of linear thin shell ory in terms of complex combinations of dependent (NASA-CR-89179) 21 p3788 N68-34036

Surface wave propa ninum cylinder submery tion over thin walled aluperged in water 22 p3913 N68-34818

Approximation rical temperature distribution thin spherical, conical, and sp oximation methods for determining axisymmet-mperature distribution and thermal stresses in rically-blunted shells 22 p3971 N68-35205 thin spherical, o [PIBAL-68-21]

Thin shell wall analy triangular finite element ag application of refined 23 p4182 N68-36687

Energy formulation for elastic stability problem of thin orthotropic shells of revolution subjected to static axisymmetric loading [SC-CR-67-2709] 23 p4183 N68-36961

Dynamic and stress characteristics of thin-walled, short, closed cylinder under arbitrary moving pressure wave of short duration

24 p4347 N68-37599 THIN WALLS

Succesive approximation weakly conic, thin walled he losed cross section outlines ation methods for designing led hulled rods with open or 04 p0592 N68-13857

Stress analysis of cylindrical and conical elements of offset wall tank using thin shell membrane and bending 10 p1608 N68-20236

Asymptotic solution of partial differential equations in thin domains

11 p1722 N68-20641 ating mandrel technique for extrusion of thin walled tungsten tubing [NASA-TM-X-1638]

20 p3488 N68-32977 Fuel dynamics of thin wall reactor assembly ed metallic uranium tubu-HPR-89] 20 p3531 N68-32981

Bucking of thin-walled electroplated copper and Mylar circular cylinders under axial compression and [NASA-CR-1160] 20 p3604 N68-33226

Torsional-flexural buckling of thin-walled open sec-ons under eccentric axial loading 21 p3781 N68-33620

Relaxation method for computing stresses in thin wall structure 21 p3785 N68-33800

Preparation of filament wound glass microtape for runing thin walled tubes for containing cryogenic [NASA-CR-72459] 22 p3884 N68-35715

Thermal gradient effects on strem rupture behavior of thin walled stainless steel tubing [AI-AEC-12695] 24 p4348 N68-37908 ects on stress rupture behavior

68-27359 ing extru-68-27361

analysis of 68-28832 68-30362 cal glass

58-31308 al formu-hell sub-8-31709

cal shells 8-32538 of AISI cracked 8-33191

brations 8-33326 ocoque 8-33328

indrical -33791 in shell pendent -34036 ed alu-

-34818 mmet-sses in hells -35205

refined 36687 iem of 36961

valled, 37599

13857 nts of nding 0236 stions 0641

thin 2977 tubu-2981

1620

thin 1800 for enic 715

and 3226 sec-

vior

Manufacturing process for seamless, thin walled maraging steel cylinder by roll forming [NASA-CR-72451] 24 p4263 N68-38199 THIN WINGS NT INFINITE SPAN WINGS

Profile optimization of thin supersonic wing for inimum average heat transfer coefficient at given erodynamic characteristics aerodynamic charac [FTD-HT-66-491] 01 p0152 N68-10732

Velocity field near thin, non-lifting delta wings calculated using supersonic linearized theory

[ARC-CP-96] 04 p0434 N68-13156 theory 04 p0434 N68-13156

Nonlinear approximation for three dimensional lift-ing surfaces in transonic gas flow applied to symmetric body and thin wing for two and three dimensional cases 07 p0934 N68-16547 [TR-47]

Theoretical studies of aerodynamic components to obtain configurations having high lift to drag ratios in viscuous interaction regime
[GASL-TR-647] 09 p1265 N68-18330

Free flight hypersonic wind tunnel tests with thin, delta wing configurations [AROD-7065-1-IR] 10 p1457 N68-20461

Method for calculating reaction of gust of wind on thin wing of arbitrary planform [TIL/T-5760] 17 p2801 N68-28439

New method for calculating two dimensional sub-onic flow on thin wing profiles with small angles of in-[TIL/T-5753] 17 p2801 N68-28450

Wing and cone calibrat on models for aerodynamic [AGARD-563] 24 p4193 N68-37762

THINNERS U SOLVENTS

THIOLS

Estimating thiol esters from decomposition with methylamine and sodium hydroxide followed by titra-on in presence of dithiofluorescein 10 p1485 N68-19963

Conformational equilibria of cyclic sulfites and 18 p3019 N68-29788

Elution method and spectrop thiocyanate in uranium solutions [NIM-167] hotometric analysis of 19 m3222 N68-30003

Nickel mercaptoamine alkylation with alkyl halides 22 p3820 N68-34936

Infrared spectrum of methanethiol and methanethiol /SD/ in gas liquids, and solid phases 24 p4298 N68-37422

Spectrophotometric determination of rhenium con-tent with thiourea in rhenium-tungsten alloys [NASA-TT-F-11735] [6 p2615 N68-28245

THIXOTROPIC PROPELLANTS
U GELLED ROCKET PROPELLANTS

THIXOTROPY

Thixotropy of viscoelastic media with continuous distribution of relaxation time 02 p0278 N68-11673

Effect of water prope es in thizotropic clay systems on biological activity [NASA-CR-95220]

16 p2597 N68-27438 Microrheological study of flow behavior of thiz-otropic suspensions, assuming spheroidal aggregates in shear flow 19 p3263 N68-31196

THOMAS-FERMI MODEL

Thomas Fermi statistical methods for calculating average properties and shell effect of nuclear masses [UCRL-17725] 02 p0244 N68-11305

Thomas-Fermi model for determining average nuclea properties and nucleon-nucleon interactions [UCRL-17724] 05 p0708 N68-14227 Calculated cress sections, and polarization correla-tions for shell atomic photoeffect of screened potential models

09 p1394 N68-19135

Constant density and Thomas-Fermi models for equations of state in dense, ionized gases [LGI-67/14] Computer programs and numerical solution of homas-Fermi equation for positive valence dif-

[NRC-MK-21] 15 p2517 N68-26155 Thomas-Fermi-Dirac model for calculation of omic hyperfine splitting and unpaired electron densi-17 p2927 N68-28632

Asymptotic relations between Thomas-Fermi-Dirac and Thomas-Fermi atomic models [NASA-TM-X-63284] 18 p3130 N68-29989

Quantum mechanical study of aluminum and iron at arious compressions using Thomas-Fermi model and [FOA-4-C-4346-23] 19 p3331 N68-31554

HOMSON EFFECT
U THERMOELECTRICITY

THOR AGENA LAUNCH VEHICLE

Height, weight, payload, stages, thrust, engine type propellant used, and type guidance systems for Scout Delta, Thor-Agena, Atlas, Gemini, and Saturn launch whiches [NASA FACTS 8-12-67]

06 p0915 N68-15240 THOR DELTA LAUNCH VEHICLE

Thor Delta launch vehicle configurations, and performance in launching communication, geodetic, geophysical, and meteorological assetties [ELDO-TM-106] 05 p0742 N68-14016 satellites 05 p0742 N68-14016

THORAD LAUNCH VEHICLES

U THOR AGENA LAUNCH VEHICLE

U THOR DELTA LAUNCH VEHICLE

THORAX

Physiological changes in lung and thorax due to pro-lunged space flight effects 10 p1465 N68-20153

THORIUM

Delayed neutrons in fusion of thorium 232, uranism 235 and uranism 238 [LA-TR-67-16] 01 p0113 N68-10786

Comparison between /neutron, gamma/ cross sec-ons for thorium and copper in energy interval 0.1 to 3.4 eV [AE-304] 07 p1031 N68-16880

Effects of cold work on X ray diffraction line posi-tions of rolled slabe of thorium and of thorium fillings in terms of stacking fault probabilities determined by peak shifts. BARC-298) 11 p1711 N68-20823

Determining uranium and thorium content in rocks by measurement of alpha particles and gamma rays with a citillation counter [NS-TR-103] 13 p2025 N68-24334

Gamma ray measurement from neutron capture in iron, sodium, and thorium as function of neutron ener-

14 p2311 N68-25051 Precipitation of thorium and uranium by ion schange resim in nitrate solutions
CEA-R-3222] 14 p2217 N68-25142 [CEA-R-3222]

Physical, mechanical, and irradiation properties of horium and thorium alloys, and application to nuclear [ORNL-4218] 16 p2674 N68-27071

Phase diagrams and crystallographic data for inter-mediate phases of 63 binary thorium systems [IS-1752] 17 p2901 N68-29122

Plastic deformation of magnesium and magnesium alloys with thorium and lithium 21 p3702 N68-33755

Paper chromatography and electrophoresis used in study of thorium, protactinium, and transuranium ele-[CEA-R-3411] 22 p3828 N68-35651

THORIUM ALLOYS Flow stress measurement for carbon effect on strength of thorium 15 p2480 N68-25905

THORJUM COMPOUNDS

n of neodymium from High temperature volu-thorium carbide particles [JUL-502-RG-RW] 01 p0095 N68-10869 Synthesis of thorium chlori ide, nitrate, sulfate, and oxala (IS-T-150) le by chlorination of ox-03 p0313 N68-12341

Vaporization of thorium exides, carbides, silicides, primarides, nitrides, phosphides, and sulfides with application to reactor technology LA-TR-67-511 03 p0316 N68-12587

Diffusion coefficiency on in beta thorium [IS-T-189] mts of carbon, nitrogen, and ox-04 p0473 N68-13752 Spray deposition of thorium powder on tungsten foil or high temperature insulation in radioisotope power

[TE-4059-77-68] 09 p1348 N68-19052 om dispersion stability in berylli-Tungmen and the UM [TR-0138/3250-10/-9]

10 p1539 N68-19998

Determination of fluoride in th (NLCO-1004) 12 p1838 N68-22719

Chemical analysis of behavior of thorses perchlorates in aquoous solutions [UCRL-TRANS-10236] 19 p3227 N66-31569

m dicarbonate, uranyl car sesquicarbonates from cor-20 p3426 N68-32861

tive method for burn up determination of m and thorium nuclear fuels 22 p3912 N68-35845 coated uranium (JUL-529-RX)

Complex hydrocarbon mixture from hydrolysis of ixed thorium-eranium dicarbides CEA-R-3215) 23 p4013 N68-36997 mixed thorium-u (CEA-R-3215)

THORIUM FLUORINES

Reduction of iron content in molten lithium fluoride/thorium fluoride [ORNL-TM-2036] 07 p0955 N68-16358

THORIUM ISOTOPES

Angular distribution of fission fragments of thorism 232, uranium 238, plutonium 240, and plutonium 242 [FEI-73] 07 p1041 N68-16348

charge distribution in sion in thorium 232 10 p1568 N68-19948 of charge distribu

Spectrum analysis of beta and internal electron con ersion at 25.6 keV transition in thorium to uranium [NP-17208] 12 p1941 N68-22907 of thorium 231 to pro-

Low energy gamma tactinium 231 decay [NP-17285] 14 p2307 N68-24811 ants of therine 230

Neutron cross section in thermal energy region [TEF-546] 21 p3741 N68-34434 ternal conversion elec-

23 p4118 N68-36626

onic X rays measured in synchrocyclotron for m 232 and uranium 238 charge distributions 23 p TROON68-37338

Mean number of fast neutrons in uranium 235 and torium 235 fission events recorded by buron floride 24 p4306 N6B-37493 [LA-TR-68-20] THORIUM OXIDES

Electron microscopic studies on nickel structures strengthened with thorium oxide [AFOSR-67-1577] 02 p0221 N68-11312

al stability of p m thorium uran ides in high temperature (AABC/TM-352) 03 p0310 N68-12047

Mechanical properties of dispersed with uranium dioxis [AAEC/TM-338] es of beryllium exide facili floxide and thorium dioxide 03 p0381 N68-12729

Vapor densities and di termine thermal stabili timocration pressures used to lity of zircoma and therin bear 03 p0382 N68-12749 BMI-1789)

suckling, fine structure, and nowtons specimenrameters measured for heavy water moderated lates of 19 element roth of thorium district curiched to the structure of the structur Buckling, fine stre AECL-2778 04 p0538 N68-13373

04 p0560 N68-13693

Chemisorbed games description rate from penso thoris pol pollets measured using pellet isotherm length decrease as time function at imperature fro Z to 500 deg C

stability of thorium diox-toria dispersed in nickel

olid airconium-calcium 12 p1953 NGB-21959

Adaption of gas chromatography to identification of estimation of residual pages in high fired thorism NLCO-1806)

13 p2011 1460-2330 X ray analysis of variation of lattice parameters of IALRE-R-5674)

13 p2008 N68-23577 Post irradiation bel elements BAW-3809-11 14 p2287 N68-24372

NAS/

The

NAS/

Spec

[NSRI

HREE!

APP

Fini

WAP

Navier [MRC

Plan er tra

REP

Rotatio

Dire

The

The

INAS

Ext and a of fou

[NPS

The stabil [NAS

Apment zirco [TR-

Vo

THREE

Dules NA

ties,

No.

THRE

D.

three [AF

22 p3854 N68-34853

(NAS

chara metric [NAS

Zero power experiments with U-235 enriched the and thorium metal lattices for Heavy Water Orga Cooled Reactor/HWOCR/ (DR-1125) [DP-1125] 15 p2499 N68-25715 Low angle X ray scat enide colloidal solution [RT/MET/68/1] ed in study of thorium le processes 15 p2413 N68-26176 Crack and void elimin um oxide pellets by irradi [AECL-3008] on thorium oxide urani-15 p2505 N68-26799 Preparation of thorisons of low nitrate contr n exide-uranium exide solu-nt from therium uranyl nitrate [ORNL-TM-2128] 16 p2612 N68-28021 and uranium and plutonium our fuel elements 17 p2840 N68-28797 Preparation of thorium oxide gels and sols as mucle [ORNL-TM-2205] stering and grain growth of th horta grit 19 p3296 N68-30887 Mass transfer of water from single thoria sol droplets fluidized in 2-ethyl-1-hexanol [ORNL-TM-2163] 19 p3231 N68-31908 Europium positive ion fluorescence in non rare earth 20 p3568 N68-32848 Thorium dioxide and uranium dioxide sol-gel materi-(ORNL-TM-1809) 20 p3430 N68-33079 and equilibrium oxygen irconia and thoria 20 p3512 N68-33154 Thermal shock re pressure of oxygen-deficient a [R-7525] Thorium reson integrals for homogene-21 p3723 N68-33949 [JAERJ-1160] te chromium in vapor ium oxide Hydrogen reduction of iod deposition of chromium on the [NASA-CR-72404] 21 p3650 N68-34022 Gas evolution study to determine sources of gases from sol-gel thorism oxides
[ORNL-TM-2268] 21 µ3654 N68-34615 Sequential chemical separation procedure for post-irradiation examination of thorium oxide and uranium riside fluels [BAW-3809-2] 23 p4100 N68-36162 Simultaneous dimelut its aluminum alloy conta [BNWL-240] n of thoria fuel element and 24 p4292 N68-37434 THORON U RADON THREADS ng, design evaluation of seasment of design rules Principles of commercial come for threaded connec [NASA-CR-93924] 11 p1704 N68-20976 THREE BODY PROBLEM Numerical analyses of tra roblem of three bodies and ters and Kepler proble (NASA-TM-X- 465) 02 p0234 N68-11146 Three body ionic re-ightly ionized gas ion rate calculated for (PUBL.-67-1) 03 p0391 N68-12487 Limitedt method appli periodic orbit natural fam problem of three bodies [D1-82-0651] on to expand analytically of first kind in restricted 04 p0573 N68-13035 quantum mechanics, and as of bound and scattering Three body problems in alculation of wave functi (ORNL-TM-2008) 07 p1043 N68-16498 Three body problem achunics, and studies of st innetology, celestial 08 p1238 N68-17598 Hodographic trea restricted three body NASA-CR-61615] 09 p1419 N68-18781 Three-body final states in kac 10 p1565 N68-19721 Three dimensional resonant on stability near earth-m e effects on particle mo-NASA-CR-93769] 10 p1593 N68-20119 Optimized computation with recursive power series integration, applied to three body problem [NASA-TM-X-63148] 10 p1547 N68-20225 m of nearly circular

> 11 p1745 N68-20905 ations, computation of

12 p1913 N68-21849

Comparisons of three body trajectories with patched two body trajectories for low thrust rockets [NASA-TN-D-4559] 12 p1966 N68-22289 ng three body problem in Vectorial concept for a [NASA-TN-D-4447] 12 p1969 N68-22885 Approximation method gy of three nucleon system [TTF-67-12] lculating binding ener-12 p1942 N68-22942 Classification scheme for sys in restricted three body proble and earth-moon mass ratio [NASA-CR-94555] 13 p2149 N68-23269 Partial wave function ch to three body scat-(AFCRL-67-0673) 13 p2121 N68-24035 Absorption spectra of three body F-center model th phase difference 15 p2536 N68-26064 Application of Lie series to cele [NASA-TN-D-4460] Initial mechanics 15 p2561 N68-26643 Simplified integral for solving nonthree body problem 16 p2719 N68-27137 (SLAC-79) Solutions to restricted the by normalization of Hamilto ree and four body problems mian systems with equilibri-INASA-CR-951071 16 p2756 N68-27197 cantum mechanical model three body problem for eracting and colliding particles, and use of perturba-17 p2925 N68-28488 of Coulomb effects in om system, such as h fium 3 17 p2927 N68-28634 [IC-68-5] ed in study of restricted 17 p2968 N68-28685 Existence of quasi-periodic solutions to three body roblem in culestial mechanics 18 p3164 N68-30060 tic orbits with mass ous of li ratio for restricted th [NASA-CR-95832] 18 p3104 N68-30094 low energy paras [SLAC-PUB-409] 19 p3335 N68-31906 Birkhoff norma ss computer program for time dependent Har [NASA-CR-96634] n systems 21 p3713 N68-33989 Research project abstratee-Fock approximation trodynamics, and three b cts on nuclear structure, Har-, quark model, quantum elec-23 p4118 N68-36581 tional effects on long ar orbiter 23 p4171 N68-36796 ree dimensional, nonlinear resonance effects on n of particles near earth-moon equilateral libra-23 p4171 N68-36797 S matrix theory and scattering amplitude calcula-(TH/68/29) 23 p4124 N68-36946 d nucleon interaction in-23 p4126 N68-36976 [ORO-3398-12] e body problem with com-Relativistic aspects of three putation of form factors in 5-[LPTHE-TH-64/10] 23 p4130 N68-37104 ormulation of three body scattering problem and tron scattering by deuterons 23 p4135 N68-37268 Three body problem in qu 24 p4299 N68-37658 THREE DIMENSIONAL BOUNDARY LAYER els for interaction of gas smodation coefficients 01 p0052 N68-10974 Two three-di particle with so [VKJ-TN-36] 05 p0647 N68-14572 Entropy layer aurroundi hody at angle of attack dete [NASA-CR-94481] ree dimensional blunt ed in wind tunnel tests 13 p1988 N68-23391 Physical and ma mensional bounds viewpoints of three [RM-4843-PR] 16 p2642 N68-27103 y layer /piasma pause/

20 p3557 N68-33113

SUBJECT INDEX Lines of separation of three dimensional boundary layer on curvilinear surface [FTD-MT-67-36] 23 p4046 N68-36340 THREE DIMENSIONAL FLOW NT SECONDARY FLOW Three dimensional laminest transfer ar compressible flow with 01 p0048 N68-10025 Addition of secondary shock capability and modifi-02 p0197 N68-11187 [TR-653] of vorticity, and vortex wake rollup behind [ASRL-TR-143-1] 03 p0296 N68-12161 Digital computer assisted cow of inviscid, reacting gas of inviscid, reacting gas of the computer assisted of computer assisted computer a racteristics 04 p0495 N68-13303 sional body using metho [CAL-AM-1800-Y-4] d for calculating three 05 p0649 N68-14964 tical model of three dimensional flow around blunt bodies traveling at [GASL-TR-637] at three dimen [PIBAL-1022] 08 p1164 N68-18024 ic and supersonic flows Three din FTD-HT-67-70) 12 p1814 N68-23038 Manual for computer program calculations on flow field about conical body with flare induced secondary shock at angles of attack [GASL-TR-653, PT. 2] 13 p2050 N68-23104 and operating paras ters of three-fluid cros [NASA-TR-R-284] exchangers 13 p2168 N68-23513 erical analysis of unsteady nonlinear ional flow of sweptback wing in supe (SUDAAR-339) 15 p2381 N68-26104 combined viscid inviscid flow lary layers of general three Computer program i [NOR-67-91] 15 p2383 N68-26955 Equations of motion for three dimensional dynamic clasticity applied to longitudinal elastic wave propaga-tion in cylindrical bars 16 p2790 N68-28314 shear flow 17 p2870 N68-28441 Asymptotic analysis of three flow in supercritical nozzles [AGARDOGRAPH-117] dimensional oscillatory 17 p2872 N68-28848 Moment method for solving nonsimilar laminar oundary layer equations for three dimensional cross flow [NASA-CR-95404] 17 p2872 N68-28914 Vector potential used for solving Navier-Stokes mations for incompressible flow in three dimensions 18 p3059 N68-29783 Three dimensional steady Newtonian gas from sonic n using Navier-Stokes equatic [NASA-CR-95883] dial expansion of viscous de into vacuum analyzed 18 p3063 N68-30258 Frequency and analys shell in three dimensional [FTD-HT-67-218] is of vibration of cylindrical flow of ideal fluid 18 p3180 N68-30438 nal wake and jet flow [PIBAL-68-9] 19 p3265 N68-31398 Three dimensional mathematical model for analysis of coast line effects on sen breeze [REPT.-15] 19 p3304 N68-31657 al Monte Carlo code for IBM 7040 Three din (IN-1109) 19 p3250 N68-31974 [REPT.-68-2] sed flows in porous media 20 p3460 N68-32587 e equation for analyzing 20 p3463 N68-33121 nce in unidirectional 21 p3718 N68-34296 Unsteady flow approach to computing axisymmetric transonic swirl flows using three dimensional method of characteristics, and accuracy check on results [ARL-68-0070] 21 p3682 N68-34465 eck on results 21 p3682 N68-34465 stial flow of boundary layer for swept back

NDEX

Supersonic wind tunnel tests of orifice venting haracteristics and three dimensional flow on flat 8-36340 NASA-CR-61241] 22 p3801 N68-35965 Three dimensional inviscid flow field analysis for axisymmetric configurations at angle of attack [NASA-CR-61982] 23 p4044 N68-36114 ow with Spectrum of final decay of localized disturbances in scous fluid 8-10025 24 p4245 N68-37882 INSRDC-27851 -11187 NT SECONDARY FLOW vortes Approximation model for syn sional space-time group diffusion [WAPD-TM-736] is of three dime -12161 12 p1908 N68-22621 Finite difference method for periodic solutions of -13303 Navier-Stokes equ (MRC-TSR-751) 13 p2051 N68-23278 g three ion with three dimensional Fouri--14964 di flow du -17040 (REPT.-8579-4-Q) 16 p2713 N68-27194 Rotary stability of the three dimensional motion of a rotating disk-shaft system considering nonequilibrium nal in-nir 18024 [AA&ES-68-3] 17 p2982 N68-29034 od applied to solution of three problems 19 p3381 N68-31806 Direct potential method dimensional elastostatics pr [NASA-CR-66673] flows 23038 Three dimensional motion analysis and vibration characteristics of dynamically scaled model of ssymmetrically clustered launch vehicle [NASA-TN-D-4707] 19 p3382 N68-32051 n flow Three dimensional descent trajectories of lifting reentry vehicle [NASA-TT-F-11907] 20 p3593 N68-32745 23104 Extension of Burmester the and application to study of fit of four degree of freedom helic cory to three dimensions, nite spatial displacement copter-type motion 24 p4347 N68-37600 23513 three ethods of computing three dimensional idiabatic and diabatic flows [1A] 24 p4280 N68-37926 6104 trajectories for adiaba [NPS51MZ-8061A] flow three THRESHOLD CURRENTS Threshold voltage measurements on electric field in-stability in fluid with stabilizing temperature gradiest [NASA-CR-93335] 08 p1257 N68-17895 6955 Application of axial fields for threshold enhance ment of induced and conduction currents on niobian girconium wire in transverse fields [TR-0138/9230-01/-1] 8314 8441 13 p2137 N68-23879 Mory ics and electrical break-Voltage-ampere characterist down from ion impact in bulk si 8848 16 p2744 N68-27621 THRESHOLD DETECTORS [DOSIMETERS] Large aperture gas threshold Cerenkov counter aing wavelength sharter technique for light collection 11 p1700 No8-21574 1914 okes Dual detection system for process pulse frequency modulated telemetry [NASA-TN-D-4561] 13 | occasing AIMP satellite netry data 13 p2038 N68-24310 1783 Radiation environments and transport techniques as applied to apacecraft radiation shielding and detection mobilems 258 15 p2560 N68-26153 ical Absolute measurement of threshold detector activi-ties, and evaluation of fast neutron flux in core [ORNL-TR-1843] 15 p2518 N68-26304 438 Neutron energy threshold did state nuclear track detect Ad detector systems using stectors and fissile radiator (ORNE-TM-2120) 15 p2467 N68-26437 THRESHOLD GATES 657 Development of adaptive pattern recognition machine with threshold logic for curve fitting [AFOSR-68-0037] 08 p1152 N68-18038 74 rum for synthesis of Adaptive comput threshold logic netwo [AFOSR-68-0039] 87 08 p1152 N68-18051 Linear separability, two level threshold minimiza-tion, and synthesis of universal network for computer 21 sal 14 p2231 N68-24446 Designing error correcting capabi ities into threshold nic of 14 p2231 N68-24448 Effect of signal duration on detection for gated and (NASA-CR-94734) 14 p2221 N68-24671 ction methods of reduc-nie networks 14 p2232 N68-25026

Heuristic evaluation of linear programming for test-ing and obtaining optimal threshold gate realizations for functions of theoretical work [SR-4] istinguishability threshold trolling industrial processes 01 p0041 N68-10302 Lattice theory application threshold logic 10 p1508 N68-19875 Computer program for major and minor threshold actions of six variables for switching circuit logic (REPT.-234) 10 p1509 N68-19972 Multithresh 11 p1675 N68-20575 Automatic control systems for nuclear reactors, reactor construction, and threshold logic [RT/EL/67/14] 11 p1678 N68-21561 11 p1678 N68-21561 Threshold logic multifont character recognition 12 n1846 N68-22215 Summary data on threshold logic circuits [AFCRL-68-0066] 13 p2042 N68-23172 Linear separability, two level threshold minimiza-m, and synthesis of universal network for computer 14 p2231 N68-24446 Systematic procedure to synthesizing partially separ network of threshold element [COO-1469-0061] lure b ed on algorithms for le Boolean function in 14 p2231 N68-24630 ld logic networks 14 n2232 N68-24908 Property image filter for pattern classification in pha-numeric character recognition study tion study 17 p2858 N68-28696 Thresholds and characteristics of electric relay, comprising tunnel diode and transistor, acting as switching closest

[FTD-MT-67-05]

17 p2862 N68-29072 17 p2862 N68-29072 Conversion of seq with savings in logics [NASA-CR-95880] hine into periodic one, 18 p3041 N68-30280 used in enumeration of s of eight variables 19 p3300 N68-31073 Linear programming threshold Boolean function REPT.-2451 stic evaluation of linear programming for test-t obtaining optimal threshold gate realizations tions of theoretical work Heuristic evalue and obtaining for func (SR-4) 19 p3249 N68-31781 tor transistor elements THRESHOLDS (PERCEPTION) [TM-14-67] tive thresholds for angular accele [USAMRL-754]

24 p4238 N68-37612 02 p0170 N68-11289 stimulation on subjec-eration in humans 02 p0170 N68-11383 Auditory threshold mea [AD-660011] 02 p0170 N68-11393 Flying personnel hearing levels assessment based on pure tone threshold sudiograms
[SAM-TR-67-56] 03 s0304 N48.12025 Sensory signal brightness flight by accountic intensity mal luminance, and duration [AM-67-16] ss evaluation during night matching as function of flash 06 p0777 N68-15346 Effects of attention d nitude of acoustic reflex [REPT.-751] 09 p1285 N68-18266 Electrophysiological correlating in monkeys tes of perceptual mask-10 p1468 N68-20258 in vigilance task per-Sense mode and coupling formance in terms of time on to [USAMRL-753] 10 p1476 N68-20263 ation effects on auditory Ultrahigh frequency rac weshold of humans 13 p1997 N68-23132 imporary threshold shift idness shift 13 p1997 N68-23160 Visual perception and retinal adaptation visual perception and retinal adaptation visual perception and retinal adaptation in the second visual perception and retinal adaptation visual perception visual perception and retinal adaptation visual perception visual perception visual perception visual perception visual visu

(TR-S)

Audiometry and q aircraft noise [NAMI-1037]

cts of dead space on lateral control flight simulator tests (8) 19 p3259 1166-31694 feedback loop of flight at ISAT-MEMO-5/68 Behavior analysi tory threshold in p [ARL-TR-68-6] 20 p3406 1468-32695 les of echolocation Comparative pur mechanisms in buts [AMRL-TR-67-192] 23 p4000 N64-36766 FTD-HT-23-1044-67 24 p4208 H66-38337 THROATS Series expansions used in solu-in throat region of two dimension ry smooth walls [ARC-R&M-3481] tions for transunic flow nat nozzle with arbitra-06 p0829 N68-15739 ic flow in throat smooth proffle 0829 1968-15760 tramonic flow in throa rhitrary smooth profile 06 p0829 Neb-1576 pped channel expansio region of angular nozzle wi [ARC-R&M-3480] Diffuser with conica for reducing gas flow v [NASA-TT-F-11698] 13 p2047 N68-23537 Cavitation performation of nozzle to the (NASA-TN-D-4592) of jet pumps having low 14 p2190 N68-24461 Performance of vortex generators installed aft of inlet throat on centerhody evaluated at Mach numbers 2.0 to 3.0 [NASA-TN-D-4675] 17 p2802 N68-28795 trode size and shape on such hypersonic trussel 17 p2868 N68-28947 Effect of throat size and electure heating performance in 20-in [NASA-TN-D-4653] Noncavitating and cavitating performance of two ow area ratio water jet pumps with throat lengths of [NASA-TN-D-4759] 19 p3266 N68-31960 THROTTLING Speed holding, height holesottle activity for automatic ing on glide path, and brottle control systems 04 p0564 N68-13060 fler with broad throttling 07 p0980 N68-17164 tie control 17 p2806 N68-28853 Aerodynamic throttling and jet penetration 20 p3394 N68-33383 HRUST
NT HIGH THRUST
NT JET THRUST
NT LOW THRUST
NT MICROTHRUST
NT ROCKET THRUST
NT STATIC THRUST
NT VARIABLE THRUST Diffusion control and power thrust efficiency of prouded propellers operated at hovering velocity 04 p0435 N68-13347 ed by sucti ot parts 04 passes Nee-13620 through perforation (DLR-FB-66-58) Predicting overall thrus operating at zero advance [REPT.-67-9] power of air propellers 18 p3003 N68-30465 Direct and planetary rections by means of am [NASA-TT-F-11827] s for transfer orbit our-19 p3368 N68-31962 Optimal programm direction in gravitation (FTD-HT-23-533-67) thrust magnitude and 23 p4169 N68-36663 Selection of optima gines for VTOL aircraf [FTD-MT-24-358-67] at ratio of lift en-24 p4196 N68-37925 HRUST AUGMENTATION Flight test results for UH-2 helicopter with lift and thrust augmentation [KAMAN-AC-RN-8-6018] 10 p1458 N68-19982 Thrust and lift inter effects on equilibrium pacecraft during turns 10 p1591 N68-20002 s of easie model with TM-499-PR Aprodynamic char augmented jet fluo (NASA-TN-D-4610) 15 p2380 N68-25919 ck Knight reciset vehicle Thrust augmentation been pressuriantion 17 p2961 1468-29010 THRUST BEARINGS threst bearing for UH-1

04 p0443 N68-13285

Bonded-type elast helicopter tall retor (DMC-372-009-004)

19 p3215 N68-31184

tion in seco

SI

Brayton cycle turbocompressor using self-acting gas [MTI-67TR74] 07 p0940 N68-16922 , and problems of gas sarings for space power [NASA-TM-X-37367] 10 p1459 N68-19606 Rubber to metal be manufacture of compli-[REPT.-10] nethods applicable in the bearings 11 p1708 N68-21624 Motion of buthrust ball beari [WTHD-2] icated angular contact 22 p3884 N68-35686 THRUST CHAMBERS 15-cm diameter, holfor SERT 2 mission (NASA-TM-X-52376) de Kaufman thrustor 04 p0563 N68-12849 Design and man or years thrust cham (ELDO/SP/67/5) liquid hydrogen/liquid 06 p0897 N68-15158 Design criteria regeneratively cooles [NASA-CR-72320] eation techniques for rust chambers 07 p1073 N68-16426 rust chamber with gas nic-combustion charac-hydrogen tripropellant [NASA-CR-72325] 07 p1072 N68-16788 brication, testing, and 11 p1778 N68-21684 Failure mechanisms (concepts for storable ps [NASA-TM-X-1463] fic materials and design rocket engines 12 p1961 N68-22272 Design and perfo hydrogen thrust chan [NASA-CR-54813] liquid oxygen-liquid 13 p2144 N68-23999 14 p2337 N68-24851 d environmental testing of ap-ellite spages engine chamber 14 p2337 N68-24974 Design, fabrication, and oplications technology satelli [NASA-CR-94668] Composite material lesign of improved the development and structural out inserts for ablative thrust [NASA-CR-54984] 16 p2750 N68-27334 THRUST CONTROL of reaction jet helicopter cruise speed 05 p0605 N68-14249 Optimization programs blade design data to incre er between planet apmediate orbit [NASA-TN-D-4534] 12 p1960 N68-22096 Motion theory for m in central gravitational applied to ballistic at-IDLR-FB-68-12] 14 p2347 N68-25155 Transient flow and Apollo lunar module (NASA-CR-92232) ction control system for 20 p3578 N68-33094 THRUST LOADS Newtons second and third laws for basic concepts of trust, and fundamental design criteria for rocket es-NASA-TM-X-52389) 10 p1585 N68-19834 nture greases and solid Test evaluation of high tempe lubricants in thrust loaded ball i [NASA-TN-D-4652] 17 p2890 N68-28766 Hydrodynamic equa components in rocket [FTD-HT-23-511-67] evaluation of axial thrust 19 p3359 N68-31457 BUST MEASUREMENT Thrust and altitude off uring steep approaches o turboiet transports (NASA-TN-D-4241) 02 p0157 N68-11253 st calibration of jet en-MP-252] 04 p0564 N68-13063 Graphs for calculating the of air breathing engines wit [RAE-LIB-TRANS-1246] t and flight performance surp lip supersonic inlets 07 p1074 N68-16545 n tank for electromags fiber, cylind netic thrustor researc (NASA-CR-62047) 12 p1960 N68-21901 Flight speed influ est calibration of jet en-17 p2805 N68-28851 Grow thrust and air m of RA-28 turbojet engine (ARC-R&M-3538) in performance testing

ne thrust determination using ratio of 20 p3578 N68-33039 THRUST PROGRAMMING at and control of flying Problem of programming to vehicle as variable mass body 01 p0099 N68-10705 Computer program for optimiterplanetary trajectories assumitinuous thrust from given initi velocity and flight time [NASA-CR-86009, V. 2, PT. 9] of low t station of low thrust in-sing constant and con-tial and final position, 02 p0270 N68-11849 propulation systems for BMWF-FB-W-68-141 tary flight 14 p2337 N68-24628 rbiting satellite 18 p3161 N68-29674 THRUST REVERSAL 09 p1413 N68-18678 THRUST VECTOR CONTROL Performance assessme during count flight, and o during powered flight of [NASA-CR-89996] attitude con it vector con of p0137 N68-10066 t vector control system estem operation 01 p0143 N68-10574 Comparative analysisor control system of propellant launch vehic [NASA-CR-66504] ral advanced thrust vec-pplied to large, solid 03 p0410 N68-12180 Comparative analysis of advanced thrust vector con-trol systems designed for large, solid propellant launch NASA-CR-665051 03 p0411 N68-12382 Systems design and trust vector control a unch vehicles nce and control analyses of as for large, solid propellant NASA-CR-665061 04 p0564 N68-13152 Staged vortex amplifie for liquid rocket seconds integral gas generators action thrust vector con-NASA-CR-721451 04 p0567 N68-13762 ds for solid propellant Thrust vector cos 05 p0731 N68-14063 of gaseous secondary in overexpanded primary jection thrust vector o nozzies under sea level [NASA-CR-66533] 07 p1074 N68-17081 dary layer sepa applied to thrust vector 06 pi160 N68-17422 ce of low thru est uto rable bipeopellant n control system 10 p1585 N68-20064 thrustors in spacecraft res (NASA-TN-D-4416) Altitude of orbiting a firing time control syste [NASA-TN-D-4519] ft corrected by thrustor 11 p1788 N68-21260 r misalisment in ion ility of thin [NASA-CR-94250] 12 p1960 N68-21944 ers for n S-IC th 12 p1871 N68-22047 n S-IC thrust vecto 12 p1871 N68-22048 [MR-1183] ire wound potentiome-turn S-4B stage thrust ers for Saturn 5-2 stage a [MR-1218] 12 p1871 N68-22089 12 p1874 N68-22464

tests of alternate poten-and Saturn 5-48 thrust

12 p1874 N68-22465

12 p1875 N68-22469

14 p2286 N68-24409

bility analysis for

[MR-1288]

[MR-1196]

19 p3358 N68-31251

Test program for evaluating surces for Saturn 5-1C thrust

Thrust for control of VTOL aircraft in hover [NASA-TM-X-60451] 14 p2186 N68-25341 Vortex valve for hot gas fic ry injection thrust vector con [NASA-CR-1091] 16 p2751 N68-28112 Thrust vector contraolid propellant first at [NASA-TN-D-4662] rge launch vehicles with 17 p2976 N68-28690 ne thrust, propulaive jet, srence and intake design intagration problems of Integration effects of er igine control, nacelle into conventional aircraft, a VTOL aircraft [AGARD-CP-27] 17 p2805 N68-28850 Engine thrust vectoring petrol of V/STOL aircraft hover 17 p2806 N68-28856 e copinnar rendezvous orbiting satellite 18 p3161 N68-29674 thrust vector [NASA-CR-96288] 20 p3577 N68-32709 Load relief auto bility during flight thre 21 p3721 N68-33756 controlled secondary for solid propellent rocket motor contro [NASA-CR-66692] 23 p4161 N68-36624 e probabilities of S-48 sulic thrust vector con-computibility with ac-[NASA-CR-98032] 23 p3995 N68-37242 Spacecraft control e-ers, ion thrustor co-stems, and attitude overed vehicles erilizable inertial sen-s, antenna pointing systems for electric 23 p4099 N68-37403 THRUST-WEIGHT RATIO Aircraft develo on of design, thrustweight ratio and engin (NASA-TT-F-11463) 08 p1115 N68-18021 space flight mechanics (FTD-HT-23-1241-67) 24 p4342 N68-38244 HRUSTORS U ROCKET ENGINES THIRRIM measuring lifetime of decay of thulium 07 p1048 N68-16690 nydroxymobatyrate com strengths of 0.50 to 0.70 [IS-T-208] 08 p1138 N68-17262 a ion induced fission of 11 p1750 N68-20675 of nuclear quadrupole in thulium 169 to deter-stal field potential of thu-11 p1769 N68-20754 nt isotopes of thullum embardment of holmi-LYCEN-6781) 14 p2308 N68-24893 Alloying and homogeneous ur thulium, lutetium [LA-3911] ures for producing um alloys containing 18 p3093 N68-30531 beck effect of thulium 20 p3571 N68-32888 THULJUM COMPOUNDS xides calculated from Thermal stability of the (DP-1116) 05 p0617 N68-14009 oxide determined car-ocell detector 08 p1255 N68-17326 Quasi-binary pl nide oxide system [KFK-521] of thulium oxide acti-08 p1190 N68-17633 Decay of thulium 166, co and new transitions [JINR-P6-3343] n-electron spectra,

01 p0112 N68-10667

N68-25341 in seconda N68-28112

chicles with N68-28690 spulsive jet, take design problems of

N68-28850 Julation for N68-28856 Mise N68-29674

ue to elece tempera-ion engine N68-32709 ch vehicle

168-33756 68-36624 n of 5-4B 68-37242

pointing electric 68-37403 m, thrust-

58-18021 8-38244

m 8-16690 iometric salium 2-at ionic 8-17262 Ission of

8-20675 -20754

thullum holmi--24893 -30531

hullum -32888 d from 14009

ed car-17326 e acti-17633

sectra,

Wave functions for calculating beta transition matrix elements of thalium isotopes [IC-67-20] 12 p1923 N68-22197

Electron capture analysis on isotopic thulium to erbi-(IBJ-835/LA/P) 13 p2123 N68-24307

THUNDERSTORMS

ctrification mechanisms within thunderclouds ex-d experimentally by electrification and growth of seedles on frozen water drops in electric fields 4-67-163] 03 p0363 N68-12079 Electrification mech frost needles on (EMM-67-163)

Maxwell equations applied to atmospheric distribu-tion of electric fields induced by thunderstorms [EMM-67-165] 03 p0364 N68-12222 Climatology, and exon method for thun-

derstorm penetrations of [AFCRL-67-0471] 04 p0532 N68-13072 Ball lightning and corona discharge observations (DAC-60941) 06 p0832 N68-15126

Comparison of sirborne X band weather radar per-formance with ground based 5 band radar system based on thunderstorm detection capability (RLTM-NSSL-37] 06 p0799 N68-15598 Atmospheric electricity build ups near cloud borders in thunderstorms 08 p1198 N68-18026

Radar investigation of vertical structure of showers nd thunderstorms based on formation of cumulonimand thunde bus clouds [T-R-532] 13 p2102 N68-24207 Lightning strikes to aircraft photographed during flights to determine hazards to suclear weapons, air-craft, and mimile wirings [SC-M-67-549] 13 p1993 N68-24242

13 p1993 N68-24242 torm discharge recor-

13 p2103 N68-24318 [T-R-571] Thunderstorm rotation about vertical axis caused by vertical abear in low level wind inflow and correlation with severe weather occurrence (ERLTM-NSSL-38) 17 p2908 N68-29061

Flight study of atmospheric electric fields in thus 18 p3067 N68-30006

Chaff wind circulation and airborne wind measure-ment data for thunderstorm environment model [ERLTM-NSSL-39] 20 p3520 N68-32568

Climatological summary of summer thunderstorm characteristics at Florida military base [AD-671984] 20 p3521 N68-32724

Analysis of performance of three station sferics posi-tion azimuth range spectrum analyzer setwork for de-tecting and tracking thunderstorm [APCRL-68-0272] 20 p3523 N68-32820 20 p3523 N68-32820

Airborne stereoscopic camera and radar measure-sents of convective clouds during thunderstorm evelopment 21 p3720 N68-34792

index for forecasting thunderstorms based on calculating dew point depression for four surface layers [M-550] 22 p3907 N68-35789

Severe local storm characteristics observed over cen-tral and eastern United States by meteorological satel-[ARA-8G49-F] 23 p4094 N68-36487

Correlation of ionospheric sporadic E occurrence with thunderstorm and jet stream activity.

[AWS-TR-204] 24 p4280 N68-37920 THYMIDINE

Thymine and thymidine incorporation as DNA precursors in Chlorella pyrenoidom [SGAE-BL-26/1968] 16 p2598 N68-27660 THYMINE

Thymine and thymidine in procursors in Chlorella pyrenoid [SGAE-BL-26/1968] e incorporation as DNA 16 p2598 N68-27660

Ultraviolet radiation effects in deoxyribonucleic acid and related compounds, radio-induced formation of cyclobutyl dimers and thymine products in DNA, and shotochamical reactions [NYO-2798-32]

23 p3999 N68-36759

THYRATRONS Short rise time thyratron light source for evaluating

photomultiplier tubes AEDC-TR-67-216] 03 p0329 N68-12261 Multielectrode thyratrons for computer design 05 p0637 N68-14524

High temperature tests on cesium diodes and vapor filled thyratrons [NASA-CR-994] 06 p0816 N68-15892

Vapor pressure, anode temperature, and inverse mission effects on thallium filled diode tested with

NASA-CR-547511 09 p1316 N68-19433 New circuits for fi dividers with variable

thyratrons 20 p3456 N68-32809 High voltage generator for sulsing using hydrogen tetrode (CERN-68-26)

negative resistances of d on dielectric films 23 p4158 N68-37307

THYRISTORS

Slip power recovery in induction motor using thyristor inverter [RMCS-EE-R-2/66] 07 p0937 N68-16239 its to pulse fire ignitrons for 07 p0974 N68-16755 Antiparallel pairs of thyristors as contactless ac

[RAE-LIB-TRANS-1254] 07 p0976 N68-17083 Current use of silicon cont power modulator switch series [RADC-TR-67-625] lled rectifiers in high

09 p1312 N68-18274 Turn-off properties of three layer diodes and thyristors for high current circuits 18 p3048 N68-30607

Switching mechanisms and dynamic properties of 22 p3848 N68-35696

THYROID GLAND Thyroid status of dogs continuously exposed to one half atmosphere [SAM-TR-67-106] 13 p1997 N68-23057

Thyroid function test by mean scanning for traces of iodine 131 [NSJ-TR-120] ns of whole body linear 19 p3209 N68-31392

Sodium fluoride and nitrog growth and thyroid function in [AMRL-TR-67-189] en fluoride 30 effect on 20 p3407 N68-33128 THYROXINE

Labelling triio with iodine 131 [CNEA-223] dothyronine and tetraiodothyroni 17 p2847 N68-29531

TIDAL OSCILLATION U TIDES

NT ATMOSPHERIC TIDES

ravity, trunami, seismology, longitude and latitude, meteorology data collected by World Data Center 01 p0057 N68-10351

05 p0738 N68-14695

18 p3069 N68-30544

Tidal friction effects on Phobos evolution (GA/MECH/68-4) 20 p3588 N68-32942 TIG WELDING
U GAS TUNGSTEN ARC WELDING

ATTITUDE [INCLINATION]

TILT WING AIRCRAFT
NT XC-142 AIRCRAFT

Ground proximity effects on longitudinal, lateral, and control aerodynamic characteristics of tilt wing four propeller V/STOL wind tunnel model (NASA-TN-D-4237) 02 p0159 N68-11519 Finite difference equations for structural analysis of ited wings and control surfaces

03 y0421 N68-12296 Aerodynamic factors, and effects on dynamic lon-tudinal stability characteristics of tilt wing V/STOL [NASA-TN-D-4344]

06 p0767 N68-15941 Longitudinal stability characteristics of dynamic cale model of four propeller tilt wing vertical takenfi 08 p1114 N68-17768 REPT -7741

s of large-scale model of Aerodynamic character tilt-wing V/STOL aircraft [NASA-TN-D-4493] 10 p1457 N68-20370 on wing performance of 11 p1620 N68-21564

cteristics of tilt wing ver-Longitudinal stability cha tical takeoff aircraft [USAAVLABS-TR-46-64]

15 p2387 N68-, 6700 Aerodynamic characteristics model at slow speed and high an [USAAVLABS-TR-67-79] of tilt wing proper

21 p3620 N68-33646 characteristics of few A model for prediction Lateral-directional stability of propeller tilt-wing VTOL aircraperformance of XC-142 aircraft [REPT.-743] 22 p3805 N68-35391

Wind tunnel investigation of ground effect on four-propeller tilt-wing V/STOL model [REPT.-892] 23 p3909 N68-36289 TILTED PROPELLERS

g overall forces as Direct method for de 04 p0445 N68-13656

Geometric characteristics of in 12 p1811 N68-22490 Transient nerodynamic interference between things for blades and wings of VTOL tilt rotor 12 p1816 N48-22303

TILTING U ATTITUDE [INCLINATION]

THE BURNING TIME NT EPHEMER'S TIME NT FLIGHT TIME NT REACTION TIME NT RELAXATION TIME NT TRANSIT TIME NT UNIVERSAL TIME

- solumnice levels and 06 p1132 N68-17758

nace on proportion of time [JPRS-45238] 12 p1917 1068-22677

ace in weak radiative UNR-P2-3743] 20 p3546 N68-32991

pact testing hammers for Modified postulate to determining load time of [SMRE-TRANS-5450] 22 p3973 N68-33562

TIME CONSTANT

Optimum correspondent of time interval between 04 p0503 7668-13730 JPRS-43835] ting charge-purity-time invertance 12 p1940 1468-2201 of motor operation with large tim Possibility of to (JINR-P2-3622) 14 p2260 N68-25391

Ale time co and integrated of 14 p2262 N68-25594

for section transport in in-with fluids thick-seed OI pOIOI NGS-10034 and dissipation flutters of st-Approximate linite homogener (EUR-3620.E)

02 p0211 N68-11326 Real gas effects in come at angle of attack (TR-664) 02 -0196 166-11256

Time depends pulsed accords in I BNL-TR-154] 04 posts 148-1

to determine trial or Time qualitation EAPL 4-3393) 05 p0710 1958-14342 Time dependent for introducing n erior of thermal meeting the

05 p0713 1008-14403 05 p0652 1008-14409 [BNL-11690] Digital technique for reco tra by time to pulse beight or [APOIR-67-2784]

OF PATES TO 10

SUB

(N

EK.

TRI [E

de (L

de

Time dependent hypersonic flow viscous inten-06 p0825 N68-15274 [FTAS/TR-67-28] Group multiplication of logical elements by networks aving limited inputs and unit delay in computing out-NASA-CR-929791 07 p0969 N68-16451 Photon fill-time of Fahry-Perot spectrometer [UCID-15224] 07 p0999 N68-16879 Theory of hyperfine structure in time dependent ectronic fluctuating environments (NASA-CR-86073) electronic fluc [BNL-11884] 08 p1211 N68-17302 ction coefficient of time ITEF-5 [7] 08 p1256 N68-17723 um dependencies of time of ntum yield in intracenter lu-chloride- lead phosphor (BBN-1687) 08 p1227 N68-18000 ne response, excitation, and luminescence spectra tamium chloride-thallium phosphor crystals 08 p1227 N68-18001 Mathematical interpret Time dependence of stress, strain, and displacement stributions in viscoelastic and plastic solids under dif-[NASA-CR-93354] 08 p1254 N68-18129 ideal gas, nitrometha reaction zone calculation [LA-3764] Human response to tim-using systems analysis app [TDCE-49194] ying sensory stimulation 08 pl137 N68-18218 Time dependent behavior uranium dioxide, sodium vaporization of fast reactor cor (BNL-12757) matical model of a ptive controller design for unknown time varial [AFOSR-68-0233] 09 p1317 N68-18553 information at output of signals with noise 09 p1303 N68-18381 TIME DISCRIMINATION laolation effects on FORTRAN computer program for calculating time epondent temperature distribution over planar thin lates with arbitrary distribution of conductive, conphysiological correlates [NADC-MR-6718] vective, and radioact (NASA-CR-66579) 09 p1345 N68-19338 ability of shallow thin mation processing with short is (IZF-1968-10) 10 p1602 N68-19647 10 p1555 N68-19668 Synchronization equipme ple access system for med small ground stations [NASA-CR-91405] ion of time de ependent, constant pro-for entrance region of 11 p1681 N68-20576 Solid state time-division an wave modulator for static stabi [IDO-17221] Time-dependent solut mass addition and frictio [UCRL-50352] ns for gas dynamic flows with 11 p1684 N68-21149 Application of Shannon infor d frequency division multiple analog and digital telemetry sy e of equal time com 12 p1923 N68-22193 ment in open end syst (UCRL-70656) 12 p1949 N68-22414 cular ions and molecuw of rare gases 13 p2126 N68-23593 res studies for ef-TIME PUNCTIONS (REPT.-97-15) 13 p2172 N68-23994 Theoretical analyses on layer flows time dependent boundary 14 p2241 N68-24931 [P-3690] Preliminary results concerni graphs, time dependent proc models [NASA-CR-84674] ng random graphs, di-esses, and probability 14 p2281 N68-25430 System of two pi to time domains as [NASA-CR-990] TCP or time (TH/64/12) 14 p2320 N68-25598

n, and chiorine environments in cracking of titunium and imperature, and length of ex-

neeretical technique for evaluating time dependent as of general electrodynamical drifts in F 2 region

15 p2481 N68-25968

15 p2400 N68-26041

u interval varia-

f atmospheric ballistic 15 p2497 N68-26636

remote sensors with study of time behavior of quan-tified radiation from target element (\$A\$.474.5) FORTRAN 4 computer program for computing and vertical displacement time functions for a ayer [NVO-1163-105] 17 p2884 N68-28835 10 p1519 N68-19553 Crystal defects from short time high temperature simulation of long time low temperature ion irradiation [CERTS-NT-02-3] 18 p3152 N68-30052 ory for estimation and Nonlinear perturbation control of time-discrete sto ic systems 13 p2044 N68-23487 Minimum fuel guidance for time-open rendezvous, orbit transfer, and orbit transfer with tangential Time varying vector valued frequency transform for rapid identification of time varying linear dynamic systems 18 p3165 N6B-30222 13 p2044 N68-23493 Approximation for barrier penetrability for time devariable linear systems, and 19 p3327 N68-31181 se response matrices 13 p2044 N68-23521 ce of time in time sharing Numerical methods for calculating time functions of linear transmission systems [RAE-LIB-TRANS-1283] 19 p3218 N68-31891 Time dependence of pair correlation in fluids in terms of self diffusion and static structure [REPT-68/20] 20 p3460 N68-32511 13 p2046 N68-24342 20 p3460 N68-32511 Kalman-Bucy recursive linear filtering of lumped process in white noise for continuous time and discrete time processes n of OSO-3 data to limit metagalactic cosmic-ray intensity [NASA-TM-X-63329] 21 p3763 N68-34691 16 p2617 N68-26976 Radial time functions and other solutions of radial Electrical breakdown of hydrogen across strong sagnetic field in contail geometry 21 p3794 N68-33999 23 p4139 N68-36327 Parameter analysis of linear tir [NASA-CR-89188] me-varying systems 21 p3673 N68-34203 e, and TNT time dependent 23 p4013 N68-36975 dent behavior of plutonium dioxide, ide, sodium aerosol produced by fast reactor core materials NASA-CR-97076 22 p3963 N68-35850 Eulerian-Lagrangian time scale relationship in one imensional turbulence 24 p4297 N68-38139 24 p4288 N68-38412 time perception and its Variation of Lagrangian-Eul ship with atmospheric stability erian time scale relation-10 p1469 N68-20457 24 p4288 N68-38413 desynchronization and sup experiment 19 p3214 N68-32151 TIME LAG Sequential delay sampling time analyzer [NSJ-TR-79] 01 p0065 N68-10713 se perception during infor-t intervals Magnetostriction delay lines with various time delays 20 p3409 N68-32407 02 p0188 N68-11294 TIME DIVISION MULTIPLEXING Slowing down time spectrometer technique for energy and temperature dependent capture measurements below 30 keV neutron energy in uranium, tungsten, Pulse division circuit for use with position sensitive 01 p0066 N68-10791 and tantalus (KFK-631) 05 p0714 N68-14514 nt for time division multium altitude satellite an Artificial star light source apparatus for determining time lag of astronomical photoelectric time transit device 04 p0476 N68-13161 05 p0740 N68-14925 log multiplier with full-Time lag of photoelectric stellar time transit device and effects of temperature, atmospheric absorption, and optical properties 05 p0661 N68-14372 05 p0740 N68-14927 rortran computer program for rapid calculation of frequency responses for linear systems with time (AEEW-R-539) ormation theory to time lexing, and comparisons 19 p3236 N68-31040 Time Division Multiple Access /TDMA/ system for satellite communication with ground station system (NASA-TM-X-63338) 22 p3832 N68-34906 Pulse echo ultrasonic syste ining temperature by me ic system for a for automatically deter-uring round trip transit Experimental study of channel spacing and transmission speed in voice frequency radio telegraphy systems [TRANS-2383] 22 p3834 N68-35238 times in wire sensors [NASA-CR-72339] 07 p0997 N68-16506 Time lag in occurrence of Q-T point on Faraday rotation records at widely spaced frequencies [RPU-S-38] 07 p0963 N68-16659 Time analysis of solar flare enhancement as sethod of determining vertical structure of dynam del for linear time-invariant imped parameters, and time Digital simulation model mamic systems with lump dynamic system delays [MAC-TR-45] 03 p0412 N68-12061 Doppler effect determination of velocity variation in crushing phenomena as function of time 03 p0349 N68-12273 08 p1156 N68-18202 Time delay cockpit television for pilot warning Transient analysis of arterial fluid lines with respect time domains and pulse width 08 p1116 N68-18228 formance of queueing simulating time intervals of simulating tor for generating ted queueing system 10 p1512 N68-19866 03 p0306 N68-12494 Time reversal invariance test of 73 keV transition in iridium 193 using Mosabauer transmission. [TR-165] design for dynamic Optimum time behavior or panded during space vehicle or [RAE-TR-67267] 13 p2043 N68-23381 or of mass and energy ex-le orbital transfer 08 p1242 N68-18169 nction for timing signal delays 14 p2234 N68-24593 r with step fur Generato [EIR-130] Conversion of time lag to digital codes [FTD-MT-24-104-67] 15 p2427 N68-26354 d for fast neutron time-of-(CEA-R-3254) Circuit design of time-lag generator for use in apacecraft magnetic damping systems [TG-965] N68-27189 09 p1391 N68-18935 Time variation of spectral line intensities for molecular and atomic hydrogen in pulsed discharges in terms nductive detectors 09 p1403 N68-19009 18 p3045 N68-29914 [NASA-CR-860691 a of various hierarchies as sin Optimal control of time lag systems
18 p3051 N68-30073 Coupled equa (NASA-TM-X-63131) 09 p1403 N68-19082

Oxygen, water, bydr

Time and space variable

(REPT -7484-278)

EX

553

and

493

571

142

776

tiel

99

103

12

12

15

p between yield point, time lag, and brit-transition in thermally treated low carbon 18 p3089 N68-30117 20 p3459 N68-32425 chanisms with 21 p3656 N68-33711 es computed from seismic array (BARC-309) 21 p3685 N68-33980 n biological day-night cycle during global flig [NASA-TT-F-11723] 21 p3635 N68-34004 Time optimal contro system with delay [NASA-TM-X-61207] of second-order linear 21 p3674 N68-34568 dent time lag measure-shift circuits 22 p3834 N68-35274 Microwave frequency ment for waveguides and [TRANS-2492] rential equations 23 p4089 N68-36686 ins for motion stability with time lag 24 p4302 N68-37805 TIME MEASUREMENT NT CLOCK PARADOX Cycle time lengths in re [REPT.-10] neural networks 01 p0016 N68-10515 te station clocks 02 p0212 N68-11468 INASA-TM-X-630361 Neutron thermalizat or at different times 04 p0537 N68-12844 lation of vertical d ctions under lunar and or use in astronomical olar tidal power in 04 p0500 N68-13343 ple crystal r ter with time of flight technique [KFKI-8/1967] 05 p0662 N68-14537

ces at Latvian Astronomics of meteorological an ects of irregularities in eart 05 p0740 N68-14922 ning of time measure n State University As ed at Latvi rvices Facility 05 p0740 N68-14924 for multimode digital ons to time of flight and coincidence mensure (NASA-CR-86023) 06 p0813 N68-16005 de derived for short du-06 p0785 N68-16066 ate m n for flight control, and trajectory optimiza [NASA-CR-1000] 06 p0914 N68-16103 operated chronometer (RAE-LIB-TRANS-1248) 07 p0996 N68-16399

Time resolution ted germa (LYCEN-6766) 07 p0997 N68-16550 Reduction of na ne of 4 pi gas ionization ueller regime 07 p0999 N68-16923 detector operating in Geige [CEA-R-3189] Special theory of relative classification emphasizing [JINR-P2-3482] d event description and 09 p1383 N68-19017 iation /1900 to 1965/ 11 p1692 N68-21543 Geomagnetic field (NASA-TN-D-4527) Neutron time-of-fliq with vanes leakage [AAEC/E-186] rometry for chopper 12 p1905 N68-22453 Clock for transfer distances in vehicles as [RAE-TR-67296] lard over great 18 p3071 N68-29636 suring devices for 18 p3068 N68-30121 Polar cap absorption tive solar regions, and [NASA-CR-92210] d with RF profiles ac-9 p3361 N68-31352 Echo I satellite Astrometric redu nehronous observat 19 p3368 N68-32002

21 p3660 N68-34329 neutron time of flight (EUR-3942.F) 21 p3692 N68-34358 d radio time signals 23 p4056 N68-36843 nd radio time signals 23 p4057 N68-36844 and radio time signals 1966 23 p4057 N68-36845 d for Octob for reduced excitation FTD-HT-23-974-67] 24 p4237 N68-38318 TME MEASURING INSTRUMENTS
NT ATOMIC CLOCKS
NT CHRONOMETERS
NT CLOCK PARADOX NT CLOCKS NT TIMING DEVICES rument errors, stel on effects, clock adjes at Latvian Observ it device 05 p0740 N68-14929 Pulsed echo [AD-663534] 08 p1180 N68-17878 a rsy energy and tim-10 p1530 N68-19923

tron time of flight data recording [AERE-M-2016] 13 p2069 N68-23717 for temporal measur (FTD-MT-66-133) 19 p3215 N68-31303 Synchronization of tire turing instruments for

19 p3282 N68-32122 TIME OPTIMAL CONTROL Optimum correspondence

ant of instrument 04 p0503 N68-13730 [JPRS-43835] tels of co 06 p0864 N68-15585

e system for two priority 06 p0864 N68-15586

os in minimum time 07 p1021 N68-16387 al control linear state-Approximation to ti (D1-82-0675) 08 p1156 N68-17933

control problems using Method for solving of Pontryagin maximum pe

09 p1321 N68-19253 lving variable time Computational algo-ptimal control probles 11 p1677 N68-21063

ajectories for variable pace vehicles 12 p1965 N68-22202 INASA-CR-1036) ım control ci u for vertical takeoff

aircraft trajectories [NASA-TT-F-11636] 13 p1991 N68-23514 Time optimal of disturbances (ESD-TR-68-11) s of com

13 p2046 N68-24222 Methodology for a ivariable polynomial ing algorithms for de controllers for dynami

16 p2635 N68-27752 ne domain analysis to rator/pilot/ 17 p2830 N68-28920 NASA-TM-X-M of control system 17 p2864 N68-28921

(NASA-CR-95574) is of electrical linear 18 p3049 N68-29731 19 p3255 N68-31171

21 p3672 N68-33998

Time optimal contra system with delay [NASA-TM-X-61207] -21 p3674 N68-34568

d to noise of c nethods for optimizing systems - correlation

22 p3833 N68-35132 es of linear time in-

23 p4038 N68-36979 ol of linear and

24 p4237 N68-37459 sign of dominant type Optimum linear a systems with large pa (NASA-CR-97512) 24 p4224 N68-37727 of acu characteristics in phos [NASA-TT-F-11689] 24 p4227 N68-38135

TIME RESPON Response him of flyi [NASA-TT-F-11370] nel to time shift 04 p0463 N68-13556 mper characteri me of dual-quin s

20 p3596 N68-33531 ers of appr (FTD-MT-24-255-67) 22 p3917 Nas-35386

and FM threshold [NASA-CR-97141] 23 p4035 N68-36139 n shock tubes of vary

[HDL-TM-68-21] 24 p4242 N68-38477 DIE SERIES ANALYSE

d power spectra for dis-(NSRDC-2413) 01 p0084 N68-10534 Two time scales in reference to adaptive or [CT-16]

02 p0191 N68-11185

04 p0502 N68-13596 RM-3288-1-PR1

tistical characteristic c input signals of the

06 p0817 N68-15200 Time series as correlation with v IAFOSR-67-270 06 p0833 N68-15312

MCUS, digital condition model life

[NASA-CR-92800] 07 p0977 N68-16661 digital tracking filter (IDA/HQ-67-6715)

on pi303 Nes-18618 for design, and evalue Statistical time seri tion of low pass filters [AROD-2025-20-M] 09 p1363 N68-18833

imput-cutput simulation [RM-3540-PR] 11 p1666 N68-20737

BE T-21 11 p1640 N49-21027 Linear #

(TR-129) 14 p2279 N68-24445 cal and proclamate

14 p2197 N68-24862 n the joint

TRUST 18 p3106 1468-30537 [TR-154] 18 p3107 N68-39613

nenance on elec-

SUB

[Al

of

100

R

F

Time domain analysis of pulse generator [RADC-TR-68-147] 19 p3253 N68-31828 Time correlations in forward scattering of nicrowaves by moving random distributions of identi-20 p3436 N68-32467 Large sample properties of least squares approxima-tion of harmonic components in time series with sta-tionary residuals - independent residuals [AROD-2055-23-M] 21 p3661 N68-34457 Correlation techniques of spectral analysis, time se-es analysis, and time domain relations 24 p4276 N68-37736 (TR-12) ships in linear time se-Higher order spectral relati [TR-24] 24 p4229 N68-38220 rix of first order moving (SU-TR-25) 24 p4277 N68-38235 TIME SHARDIG Computational requiredigital attitude contri ts for satellite long life oms using time shared TR-1001/2307-13/] 01 p0041 N68-10241 Introduction to JOHNNIAC Open Shop System /JO53/ time sharing, special purpose computers designed for nonexperienced users and professional RM-5220-PR] 02 p0183 N68-11056 Guidebook for JOSS compute [RM-5367-PR] r time-sharing system 02 p0184 N68-11272 for harmonios 02 p0186 N68-11546 TRACE Model 2 user guide - instruction man containing timeshared computer routines prestatistical manipulations of large, complex colle [TM-2621/003/00] 04 p0481 N68-13006 ntial future applicati for computers 04 p0481 N68-13092 Reference guide for JOSS computer system central RM-5270-PR1 04 p0481 N68-13127 Analytical cost cos of computer operating (SDC-TM-3525) 04 p0482 N68-13204 Comparison of four of [TRACOR-67-904-U] 04 p0483 N68-13387 Use of time sharing on-line systems for operations [DOC.-66SD295] 04 p0485 N68-13833 Time-sharing versus batch processing with respect to an machine measures of system performance iP-2975] 05 p0632 N68-13976 (SP-2975) ng systems, and computer input-output system 05 p0634 N68-14970 Display devices, time sharing rograms for Genie graphical is PL/I pro gram for inci lation models on ume shared computers [MAC-TR-48] 06 p0803 N68-15096 Remote control of time sh and information processing [PB-175666] red computers for data 06 p0804 N68-15195 Time shared digital co remote terminal which provides output in switch fi MAC-TR-381 06 p0807 N68-15372 Brief review of on-line cor ter techniques 06 p0809 N68-15446 On-line simulation in on-li ine process synthesizer 06 p0809 N68-15447 s for control theory ap-06 p0811 N68-15686 NASA-CR-92515] for time sharing comte graphic d

10 p1503 N68-19991

s - computer printouts

10 p1504 N68-20245

te Curto program for

puting center II p1666 N68-20803

time sharing computer

11 p1671 N68-21688

management of time

13 p2037 N68-24225

15 p2432 N68-26371

ime sharing real time input output executive pro-n for PDP-I computer graphic data display system -

overhead costs [AFOSR-68-0763] 15 p2434 N68-26586 Computer time sharin formance, speed, and re [AFOSR-68-0795] on, and its costs perr attitudes 16 p2627 N68-27005 Univac 1108 computer system of cathode ray tube creens for time sharing, data retrieval, and data NASA-TM-X-53724, V. 2] 17 p2856 N68-28567 Neurophysiological data analysis using time shared remote console computer system [NASA-CR-95656] 17 p2820 N68-28836 [NAM-CR-70020]
Time sharing characteristics of multiterminal digital computer system with each input-output teletypewriter linked to buffer section in main unit [FTD-MT-24-232-67]

[FTD-MT-24-232-67] Psychological importance of time in time sharing BBN-1687] 19 p3218 N68-31891 Secure information sharing file system for problem solving facility [REPT.-68-33] 20 p3444 N68-32992 Development and n ice costs of computer (P-3894) 23 p4027 N68-36712 Management pli complex tasks [PIBEE68-0008] ng and optimal time allocation in 23 p4004 N68-37224 onuer spectra curve fitting [NYO-3798-2] nd ALGOL used for Moss-23 p4110 N68-37323 Computer time sharin Minsk-2 computer system hased on multiple input-output terminals
[FTD-MT-24-236-67] 24 p4231 N68-37816 Internal representation of statements in IBM 1130 compu [AFCRL-68-0319] entation of FORTRAN executable 24 p4232 N68-37979 On-line distributi time varying signals [ITSA-33] on analyzer and fade counter for 03 p0341 N68-11946 Time measurement services at Latvian Astronomical Observatory in support of meteorological and geophysical studies, and effects of irregularities in earth retestors. 05 p0740 N68-14922 Instrumentation, and processing of time measure-ment data recorded at Latvian State University As-tronomical Observatory Time Services Facility rvices Facility 05 p0740 N68-14924 its effect on accuracy of star Inclination of grating al 05 p0740 N68-14928 Time code techni nal processing and control applicat [USL-846] 10 p1500 N68-20232 Pulse transformer amprove conductor counter ne signal registration 12 p1850 N68-22630 (KFK-617) or with step function for ti or timing signal delays 14 p2254 N68-24593 (EIR-130) Auto and cross correlation shift of time duration signals functions for frequency 17 p2848 N68-28347 ic clocks and statistics of precision signal 17 p2882 N68-28477 als and frequency standards from Omega navigatio [NELC-1529] 18 p3112 N68-29716 Time signal controlled data gathering radar unit [ECOM-5191] generator for triggering 18 p3036 N68-30348 Time signal transmissent transmitting thro test using ground equip-Applications Technology Satellite-1 transpo (ERLTM-SDL-9) 24 p4228 N68-38162 U TIMING DEVICES TIMING U TIME MEASUREMENT TIMING DEVICES (AERE-R-5561) of p0815 N68-15513 Digital comma d as trigger circuit and LGI-67/15] 10 p1507 N68-20472 Calibrating fl me mark generator for

13 p2065 N68-23055

Time sharing system using large capacity core storage and IBM TSS/360 to reduce demand paging

tronic timing devi 13 p2071 N68-24214 Fluid relaxation oscillate sensitive to pressure and temperature changes for timer application [HDL-TR-1381] 16 p2661 N68-27395 Conversion of sequential with savings in logical elem [NASA-CR-95880] itial machine into periodic one, 18 p3041 N68-30280 Construction and operating principles of percussion, time, and noncontact action detonators [FTD-MT-66-153] 19 p3206 N68-31625 ited transition a , and sulfur-tin des for transitions calci um-argon, and su [LYCEN-6746] 05 p0718 N68-14728 r distribution measure **Excitation curves** ments for transition [LYCEN-6741] 05 p0718 N68-14729 Specific heat of tin and a illium in stable and un-[TR-14] 05 p0758 N68-14931 Absorption measurement silver, and tin by 6 GeV sys (DESY-67/27) of bismuth, copper, gold, 07 p1041 N68-16325 Atomic absorption a ing tin-in-tin and calcit [RFP-1001] otometry for determin-cium lead alloys 07 p0956 N68-16417 Heat of formation of gold antiantimonide and partial ction coefficients of anenthalpies and enthalpy inte timony and gold in liquid tin [TR-6] 09 p1292 N68-18420 Effect of high elastic uniaxial strain on resistivity and superconducting transition temperature of tin whisken 10 p1576 N68-19782 erconductivity of di red tin and lead films formed by vapor depo [NOLTR-67-168] w temperature 10 p1578 N68-20062 Fusion solubility of tin in gal [FTD-HT-66-557] um arsenide 11 p1770 N68-20836 is of helicon wave propagation in 11 p1776 N68-21806 Electrical resistivities and tra pure and cadmium-doped tin sir sition temperatures of igle crystals 13 p2131 N68-23176 Dislocation drag mechanic slocation velocities in twinni ms and their effect on ing process in tin and zinc 13 p2138 N68-23981 [TR-58] Dielectric function of se enductor with inverted band structure of grey tin 13 p2139 N68-24160 tical magnetic field rated superconducting behavior of vacuum lean and dirty tin films 15 p2537 N68-26109 Long range quanti acting tin using sephson junctions e coherence in supercon-omagnetically stabilized 15 p2537 N68-26117 Tin particle size effects on nuclear magnetic sonance and Knight shift in superconductors 16 p2742 N68-27217 cal vibration effects on nucleation of supercooled liquid bismuth and tin 16 p2682 N68-27822 Inelastic electron scattering from even tin isotopes and microscopic theories of vibrational states (IC-68-3) 17 p2924 N68-28432 Energy spectrum of tin 116 and effective nuclear forces derived from realistic nucleon-nucleon potentials of Yale and Tabakin [RC-68-4] 17 p2928 N68-28646 scattering of protons from Sn 120 (ORNL-4252) Nucleation, solidification, and crystallography of ad-tin eutectic studied by X ray and metallographic 19 p3290 N68-31085 of electronic K X ray and tungsten 19 p3325 N68-31142 Spectrometer measu otope shifts in tin, sar Magnetic field depo onocrystal of white tin e of Knight shift in 19 p3352 N68-31166 Application of Mossh trol of tin content in ores [RTS-4180] fect to automatic con-20 p3536 N68-32658 Field modulation in a sistance oscillations in a for measuring magne-cony doped gray tin 21 p3753 N68-33743

ESL-TM-3161

of survey data [TR-67-679-1]

AD-665687]

Human facto

Evaluation and or sharing computer syste [AD-666730]

[AFCRL 68-0131]

BBN-1570]

Queueing mo

on elec-58-27395 odic one

8-31625 ms calci-8-14728

and un--14931 r, gold, -16325 termin-

partial of an-18420 ity and liskers 19782 films 20062

tion in 21806 res of 23176 et on

erted 4160 6109 con-5117

150 of hic 85 ray

in 66 12

68.24214 pressure

INDEX

8-30280 rcustion,

8-14729

-16417

20836

3981

setic

546

Low temperature research reports on tin - effects of impurities, superconductivity, thermal effects, and transport and electrical properties [AD-672357] 21 p3756 N68-34569

Critic ' field behavior of superconducting thin films of lead, i.n., and indium quenched on substrates at low 21 p3757 N68-34741 Triton-proton reactions of zirconium and tin isotopes

23 p4113 N68-36138 Temperature dependent measurements of surface impedance and ac critical magnetic fields of supercon-ducting tin and lead

23 p4149 N68-36245 Electron beam-induced cosmic ray showers in tin, copper, and lead, and spatial distribution of energy deposition 23 p4150 N68-36419

One-neutron transfer reactions in even and odd tin otopes and realistic nucleon-nucleon potential IC-68-33] 23 p4130 N68-37089 Electron spin resonance measurements for tin doped

UUIP-5821 24 p4331 N68-37674 TIN ALLOYS

Plating, rolling, and annealing techniques for production of bimetal strips with Al-Zn alloys [FTD-HT-67-246] 02 p0217 N68-11596

Sleeve bearings of DU material consisting of thin bronze spheres liming surrounded by mixture of TFE fluorocarbon plastic and lead sintered on tin plated steel backing [NASA-CR-91774] 05 p0670 N68-14972

Nuclear radiation effects on aluminum, titanium, vanadium, and tin alloys at cryogenic temperature [NASA-CR-72332] 06 p0854 N68-15572

Inductive and resistive transitions to superconduc-tivity in sintered samples of niobium-tin system 07 p1070 N68-17027

Superplasticity of lead-tin alloys and fracture of duc-(AD-664823) 10 p1539 N68-19939

Solid electrolyte studies on thermodynamic proper-ties of palladium-copper alloys and palladium-tin alloys

11 p1711 N68-20688 [AD-665821] Metallographic, X ray, and hardness analyses on solid tin solution in niobium [IBJ-877/XIV/PS] 13 p2086 N68-24320

Niobium-tin alloy phases after heat treatment for metallographic hardness and structural restgenography in powder metallurgy analysis [INR-871/XIV/PS] 17 p2902 N68-29435

Heats of solution of silver and gold in dilute silver-gold-tin alloys as function of alloy composition [NASA-CR-87774] 21 p3791 N68-33665

Superconductivity of fused samples of binary systems Nb-Sn, Nb-Al, Nb-Ga, V-Si, and V-Ga [CONF-640310-1] 23 p4154 N68-36885

TIN COMPOUNDS NT NIOBIUM STANNIDES NT ORGANIC TIN COMPOUNDS NT STANNATES NT STANNIDES

Gamma ray effect on synthesis of organo-tin stabil-izers and catalysts for vinyl chloride plastics and polyesters

07 ±0959 N68-16791 Thermal decomposition of organic tin compounds [AROD-6151-1-C] 09 p1293 N68-18528 Mossbauer effect in chemical analysis of tin compounds and in nuclear excitation study [FTD-HT-23-664-67] 19 p3223 N68-31148 Free carrier reflectivity structure of gray tin single crystals 24 p4330 N68-37575

TIN OXIDES Shock wave effects on phase transformations in ger-anium dioxide, allicon dioxide, titanium dioxide, tin oxide, and lead dioxide

03 p0315 N68-12564 Optical and electrical properties of stannic oxide crystals [AD-662692] 05 p0729 N68-14676 High temperature conductivity of grown stannic oxide single crystals

10 p1576 N68-19688 X ray spectral analysis of composition of trace ele-ment inclusions in tin dioxide ore [NASA-TT-F-11752] 19 p3271 N68-31574 TIN TELLURIDES

Superconductivity in degenerate semiconducting tin 20 p3561 N68-32306

Constitutional studies of SnTe and Si-Ge metal systems, segmented Si-Ge-PdTe thermocouple efficiencies, and pore migration in PbSnTe thermoelements [NASA-CR-96293] 20 p3575 N68-33446 20 p3575 N68-33446 Thermoelectric properties of lead-tin-tellurium

[CEA-R-3399] 23 p4156 N68-37122

TIP DRIVEN ROTORS

Performance of two-stage axial flow turbine operat-ing at different rotor tip clearance [NASA-TN-D-4388] 05 p0607 N68-14639 TIP SPEED

Tip vortex effect on helicopter re of p0441 N68-13150

Correlation between accountical signature and analytical predictions of vortex interactions in tip vortices of helicopter rotors

12 p1816 N68-22506 Analysis of blade-motion stability and tip speed ratio for articulated rotor [NASA-TM-X-61218] 21 p3618 N68-34347

Wind tunnel performance tests of rotary wings at high tip speeds and advance ratios (USAAVLABS-TR-68-44) 24 p4195 N68-38141

TIP VOZTICES VORTICES ¥1

TIPS U BLADE TIPS

TIRES NT AIRCRAFT TIRES

Laboratory scale model technique for investigating pneumatic tire hydroplaning [NASA-CR-1074] 13 p2047 N68-23357

Effect of wheel braking on directional control of pneumatic tires on pavement [NASA-TN-D-4602] 14 p2186 N68-25313 Interactions between pneumatic tires and pavement

[NASA-TM-X-61108] 14 p2265 N68-25343 TIROS SATELLITES

Theoretical basis for obtaining irradiance valves from low-resolution radiometers of Tiros satellites, and in-flight calibration theories 04 p0569 N68-12821

Grid method for constructing scan lines generated by Tiros scanning radiometers [NASA-CR-91379] 04 p0505 N68-13829

Data analyses of Tiros and Nimbus radiometric ob-06 p0869 N68-15227

Tiros medium resolution scanning radiometer data from short and long wavelengths used to estimate cloud top temperatures, cloud cover, emissivity, and equivalent black body temperatures
[NASA-CR-25921] 07 p1020 N68-16920

Tiros cloud photographs used to study synoptic and mesoscale cloud patterns near low-level jet streams [PB-176511] 10 p1550 N68-19498

Environmental sensors and data acquisition system of improved TIROS satellite
[NESCTM-7]
21 p.3779 M49 2424

TIROS 4 SATELLITE

Monthly and seasonal global charts of long wave radiation and albedo based on Tiros 4 and Tiros 7 data [NESC-43] 02 p0205 N68-11365

7 Tiros 4 low resolution radiometric data and surface distion measurements for calculating reflectance and bsorption of sunlight over United States - Spring, 1962

04 p0497 N68-12819 Angular distribution of solar radiation reflected from clouds as measured by Tiros 4 radiometer [NESC-38] 12 p1962 N68-22399

Monthly and seasonal global charts of long wave radiation and albedo based on Tiron 4 and Tiron 7 data (NESC-43) 02 p0205 N68-11365

Reduction of synoptics and dynamics data on 5 to 10 November 1963 temporal occurrence, including radiation measurements recorded by Tiron 7 satellite (PB-17996) 07 p1021 N48-17060

rature distribution data based on Tiros 7 radiometer di [NASA-CR-92554] 08 p1196 N68-17551 Comparison of Tiros 7 15 micron carbon diexide hannel radiometer temperature data with temperature ats from radiosondes

08 p1196 N68-17552 Tiros 7 observations of Antarctic stratospheric warming in 1963 08 pl196 N68-17553

Angular dependence of reflected solar radiation from Sahara measured by TIROS 7 in torquing [NASA-CR-95361] 16 p2753 N68-28002 TIROS 9 SATELLITE

Onboard automatic wheelbarrow spacecraft [TR-0158/3113-03/-1] etic attitude control for 03 p0417 N68-12073

TIROS OPERATIONAL SATELLITE SYSTEM

Prelaunch early orbit and attitude determinations, and prelaunch analysis for Tiros Operational Satellite B

(NASA-TM-X-63002) 01 p0133 N68-10070 ESSUES [BIOLOGY]
NT EPITHELIUM

Histochemical analyses of hypotherms, hypocapnia-hypoxia effects on tissue enzyme activity 04 p0454 N68-13193

Lithium fluoride thermoluminescent dosimeters for tissue-dose measurements in high energy charged parti-cle beams 04 p0437 N68-13718

Free radical production in biologically significant compounds, electron spectra inside irradiated tissue, and electron spin resonance spectroscopy for ionizing (NYO-910-571 05 p0609 N68-14126

emulated for mechanical i-boundary value problem

[AFOSR-67-2599] 05 p0612 N68-14739 Status reports of freezing h activity, and heat capacity st heat transfer, thermal con-studies of bovine whole or-GLR-571 06 p0773 N68-15526

Adaptation processes of cells, and tissue cultures 06 p0775 N68-16603 scence of trace ele-

Methodology for X ray fluor ments in human fluids and tissues (UCRL-70351) 06 p0776 N68-16099 Proton irradiation effects on liver cells and timue of

NASA-CR-926881 07 p0941 N68-16107 flight factor effects on ell cultures 07 p0946 N68-16895 Counic radiation and lysagenic bacteria and hu (FTD-HT-67-200)

Proton irradiation effects on phosp to rat timue proteins ores absort

09 p1282 N68-18914 Gravitational effects on gas eripheral timues

10 p1466 N68-20160 Dose rate and quality factor mequivalent phantom after neutron [LA-TR-68-8]

Tissue irradiated with protons and thermal/fast cutrons to study induced radioactive isotope production in astronauts [NASA-CR-95722] 17 p2827 N68-29371

Mathematical models for sol cells and tissues, biology and population biology [REPT.-40241-R-7] for molecular biology, biology ogy of organe and organisms 18 n3011 N64-30453

adeptation of cells and Physiological resp timues to hypoxia [AR-2] 19 p3207 N68-30963 our heat on sales

Effects of additional panions and times [PB-176914] 19 p3208 N68-31315

Germ-free seeds, needlings, plasts, tissues, and cell-lines for lunar receiving laboratory, including algal and vascular plant systems [NASA-CR-92238] 21 p3618 Mass.34770 Techniques for reducing electrical noise pickup in temedical counting instrumentation 22 p3016 N68-35135

Clinical and histologics energy electrons on skin as [CEA-R-3294] al studies of effects of high ad times of rubbin 22 p3814 P669-35897

TITAN LAUNCH VEHICLES

Height, weight, payload, stages, threat, engine type propellant used, and type quidance system for Some Data, Thor-Agens, Allin, Gentin, and Sature based INASA FACTS 9-12-67)

NASA-S

Textur

NASA-

TR-14

Calcul

Textus um alloy [AMMR

Simuli head for [NASA-

Hydro failure n

Produ beta tita yield pro [WAL-

High

Physi

Colle

and tita

Nati

Proceed the process of the process o

Mac

Oxy relate titanis posure

Tit.

Sea w

Co

(NA

C

Co

DMIC

(AD-66

06 p0915 N68-15240 TITAN 3 LAUNCH VEHICLE Acoustic noise data on wind to Titan 3 booster with varying paylo el scale model of 14 p2182 N68-25486 measurements of seven percent d model of several Titan 3 configu 14 p2364 N68-25507 unnel simulation of ent of booster rocket nic nortice of launch 14 p2183 N68-25514 performance and flight versus orbital entry for [NASA-CR-66661] 19 p3367 N68-31833 TITANATES

NT BARIUM TITANATES

NT ILMENTTE

NT LEAD TITANATES NT PEROVSKITES NT ZIRCONIUM TITANATES High field losses of adulterated lead zirconate anate piezoelectric ceramics 20 p3560 N68-32236 TETANSUM rgy spectrum, and purification of plasma generated from [CTO-352] Mass cor 01 p0119 N68-10877 of hydrogen adsorption concentrations and temas at varying con 01 p0126 N68-10909 Ties m disk ph rce construction and CTO-351) 01 p0120 N68-10921 ce and fatigue damage by, steel and titanium 01 p0146 N68-10968 Cyclic de accumulation for alu [NAEC-ASL-1115] ents of titaniferous ments in smelting ntes or ores 06 p0789 N68-15535 (BM-RI-7083) anges in structure and mechanical properties of ctory metal alloys induced by titanium interstitial INASA-CR-92674] 07 p1010 N68-17089 Reaction kir rogen in argon with application to design of gettering systems [ANL-7167] OB p1138 N68-17325 moctive coatings and a m of Ti-SAI-1Mo-1V urface treatments for pro-alloy sheet from hot-salt [NASA-TN-D-4319] 08 pi 185 N68-17377 Gross surface correct stateless streets, and fitta (TR-0154/3210-10/-4) 09 p1412 N68-18305 Electron paramagnet interstitish in n-type re [COO-1284-6] dies of titan 09 p1408 N68-18995 (NASA-TT-F-11586) 10 p1483 N68-19785 method for determin-tanium alloys 11 p1643 N68-20592 Periodate spectroph ing management in titue (AMMIC-TR-48-01) Texture and mechanics in pury titumium sh [AMMARC-TR-67-05] opy of texnile proper-11 p1710 N68-20647 ing palludium and (CEA-R-3065) 11 p1654 N68-21404 ion abou 11 p1716 N68-21718 Fabrication of beryllium panel and composite beryl-um-disastum panel by electron beam and resistance [NASA CR-41637] 13 p2075 N68-23791 strongth and brittle timesion allows 13 p2084 N68-23837 Tor m of 341 keV s rying capture of ITEF-521 14 p2304 N68-24642 on of the CMEMO-214 13 p2481 N68-25961

m alloys, their pro-

15 p2481 N66-25962

Mining, mineral processing, and production of titani-15 p2481 N68-25963 Production and availability of tit titanium mill products 15 p2472 N68-25964 consumable electro in welding of titaniu 15 p2472 N68-25966 nce of tit n to salt, oxidizing. 15 p2481 N68-25967 Flow stress analysis ur conium, and Zircaloy 2 [ORO-3262-5] 15 p2485 N68-26613 ORO-3202-23
Corrosion and electrochemical behavior call-dizanium alloys in wet process phosphoric acid 16 p2674 N68-27117 Effect of room tempera perties of intermetallic courange 150 to 370 deg C [ARL-MET-50] are prestrain on tensile pro-pound NiTi in temperature 16 p2684 N68-28150 perties, and weldability of Tennile and fracture pro 18 aluminum alloys in methanol iodine (RIAS-TR-68-4C) Crystallizari (NRL-MR-1869) 18 p3092 N68-30445 tanium and titanium e solution 20 p3495 N68-32518 Crystallization of baria-titania-bori social interest in devitrification of ba oric oxide glass with of barium titanate 20 p3510 N68-32805 and magnetic properties of Alnico /permanent magnet materials/ alloys 20 p3506 N68-33359 ng effects at cryogenic tem-perties of commercially pure Postirradiation annealing peratures on tensile prop [NASA-CR-72428] 20 p3506 N68-33385 Carbon 14/proton, alpha/boron 11 reaction at bon-arding energies from 2 to 3.6 MeV, and tritium titani-m target degradation 21 p3733 N68-33693 Electrodeless discharge lamps used for Raman stu-ies of colored fused salts, carbon tetrachloride, and tanium tetrachloride. 21 p3647 N68-33782 Hydrogen diffusion measurements on high purity 22 p3889 N68-35090 Optical energy transfer processes in barium and [AD-673937] 24 p4219 N68-38228 Elastic and plastic tensile properties of 5Al-2.5Sn titanium alloy sheets [AMRA-TR-67-22] 01 p0077 N68-10741 Design and construction of web stiffened titan andwich hull model for underwater application ater application 02 p0275 N68-11311 (NSRDC-2412) with yield strength up to 260,000 psi [AMMRC-TR-67-01/1] 02 p0221 N68-11348 iducted to deterded titanium alloys 02 p0216 N68-11374 (Al-67-137) st and test work for difm alloys 02 p0217 N68-11431 fusion bonding of titanius [AMRA-CR-66-10/1-2] Simulated study of effects of high altitude supersonic air flow on titanium alloy hot salt cracking process [NASA-CR-981] 02 p022Z N68-11522 Creep tests with titanium alloys, precipitation hardening stainless steels, and maraging steels [NASA-CR-91119] 03 p0349 N68-11935 Effect of microstructure of titanium alle ture on stress corrossion (NASA-CR-91254) 03 p0350 N68-12145 rrosion tests of tit nium alloys in distilled bient temperatures em-Stress corre MASA CROITS 03 p0352 N68-12544 Cryogenic quenchi cryoter raid coding [NASA-CR-91344] m and tital 04 p0514 N68-12853 equipment for propel Precision glass bes last task surface corr [NASA-TN-D-4288] 04 p0514 N68-12890

Thermal and electrical resistivities of rhenium at cryogenic temperatures and role of dissolution in cor-rosion assisted cracking of titanium alloys [PB-174294] 04 p0399 N68-13065 04 p0520 N68-13067 Sea water stress corros dence on embritminum alloys 04 p0521 N68-13250 [NSRDC-2483] um alloys in sea w (D6-19553) 04 p0521 N68-13353 Vacuum deposition method of measuring crack propagation applied to brittle-type fractures associated with stress corrosion cracking in titanium alloys [D6-60072] 04 pd589 N68-13379 04 p0589 N68-13379 ence on susceptibilim alloys to aqueous stress corrosion 04 p0518 N68-13429 (D6-60083) Nuclear radiation and cryogenic temperature co-bined effects on mechanical properties of diamium as aluminum alloys used in nuclear rocket construction [NASA-CR-91519] 04 p0541 N68-1382 rocket construction 04 p0541 N68-13825 d detonation wave effects on low carbon m, copper, and aluminum alloys Shock and deton 04 p0591 N68-13838 orrosion cracking of titanium alloys by or loading Stress-corror [D6-19768] 05 p0746 N68-13992 Investigation of titanium alloy fracture in nitrogen oxide for lunar orbiter [NASA-CR-66524] 05 p0676 N68-14506 Stress and chemical corrosion of titanium alloy in Freon environments (TR-0158/3250-10/-5) 05 p0676 N68-14509 Fatigue tests of Ti-6Al-6V-2Sn and Ti-13V-11Cr-3Al forging alloys for aerospace applications [USAAVLABS-TR-67-43] 05 p0679 N68-14920 Shock induced transformation of titanium-nickel al-NOLTR-67-78] 06 p0853 N68-15207 ndbook listing mechanical gnesium, nickel, and tital cal and physical properties itanium alloys used in air-06 p0853 N68-15309 inum, titar Nuclear radiate anadium, and tir n effects on alu vanadium, and tin alloys at cryogenic temperature [NASA-CR-72332] 06 p0854 N68-15572 Neetallurgical characteristics of titanium alloys, and high strength ste [NRL-6607] ics of aluminum alloys, 06 p0855 N68-15646 Alloy constitu ition effects on electrical properties of titanium-chromium binary alloys [RLO-1375-5] 07 p1008 N68-16421 Rolling slabs of zinc-copper-titanium alloys cast semicontinuously and evaluated for sheet production [BM-RI-7089] 07 p1008 N68-16596 Residual static strength and slow crack growth behavior of duplex annealed Ti-8Al-1Mo-1V sheet [NASA-TN-D-4358] 08 p1250 N68-17588 Linear elastic fracture analysis for side groove effects on fracture toughness of high strength steels, titanium alloys, and aluminum alloys [NRL-654] 08 p1253 N68-17777 vironmental exposure es of titanium alloy, si re effects on mechanical pro-[NASA-TN-D-4318] 08 p1186 N68-17897 Fatigue crack propag m alloys tested in aqueous enviro (NRL-6588) 09 p1351 N68-18368 a corresion cracking of 09 p1354 N68-19481 Stress corrosion crackin alloy foils [NASA-CR-80326] niems in titanium 10 p1537 N68-19542 Periodate spectrophing manganese in titani (AMMRC-TR-68-01) c method for determin-11 p1643 N68-20592 Design requirement its and process parameters for litanium alloy Y-ring segment for Saturn S-IC using di NASA-CR-616981 II p1702 N68-20877 for shrouded titanium im-NASA-CR-61712] 11 p1706 N68-21221 11 p1716 N66-21718

EX

at at

065

067

arit.

250

153

ick led

79

29

15

NASA-SP-5040) [NASA-CR-61824] INASA-CR-618231

Transmission electron microscopy and X ray diffrac-tion studies of phase transformations in thin films of titanium-nickel Microstructure effect on mechanical properties or molybdenum titanium carbon alloy 12 p1888 N68-22324 16 p2676 N68-27270 Brazing aluminum to titanium coated stainless steel minimize formation of intermetallic compounds in Internal friction elastic seasured as temperature fu li of titanium- nickel 16 p2677 N68-27271 12 p1883 N68-22778 fracture toughness of and cryogenic tempera-Texture strengthening a tanium alloy sheet at room nd susceptibility mea-16 p2677 N68-27272 [NASA-TN-D-4444] 12 p1891 N68-22884 fulus, and internal fric-inity of transformation Calculation of regular a titanium base binary alloys [TR-14] ion phase diagrams for 13 p2081 N68-23252 16 p2677 N68-27273 Texture effects on sheet to nile properties of titaninickel determined by Creep mechanism of titanium-gh temperature and tensile tests um alloys (AMMRC-TR-68-03) 13 p2082 N68-23499 16 p2677 N68-27274 Simulated titanium alloy go head for Saturn S-IC fuel tank [NASA-CR-61638] re segment lower bulk-Magnetic permeability, Hall coefficient, electrical sistivity, and critical range of titanium-nickel transi-13 p2074 N68-23723 Strength characteristics of solder joints of titanium alloys with stainless steels and steel 16 p2677 N68-27275 Line profiles in nuclear magnetic resonance and lossbauer effect in titanium-iron-cobalt alloys 16 p2742 N68-27277 13 p2075 N68-23836 Hydrogen effects on impact strength and brittle failure resistance of titanium and titanium alloys 13 p2084 N68-23837 of titanium-nickel and Soft X ray spectroscickel-alloy systems 16 p2677 N68-27278 Production and testing of tough, high strength alpha-eta titanium base alloys with improved ductility and Band structure analysis of Hall coefficient behavior titanium-iron titanium-nickel, titanium-cobalt and WAL-TR-401/303-131 13 p2085 N68-24148 16 p2742 N68-27279 High temperature X ray d structures in TiNi intermetal [AD-667398] fraction studies of phase compound Scintillation counter and diffractometer used to ady long range order in titanium-iron 16 p2677 N68-27280 13 p2085 N68-24149 perties of new high temium-cobalt compound fractometry 16 p2677 N68-27281 perature titanium alloys [DMIC-MEMO-230] 13 p2086 N68-24268 Collection of papers on streammum alloys, nonstainles and titanium alloys [AGARD-CP-18] ess corrosion cracking of a steels, stainless steels, hanism for high tempe m nickel and resultant p ture transformation of martensitic structure 16 p2678 N68-27282 14 p2267 N68-24397 Stress corrosion of titanium alloys in chlorinated drocarbons, hot dry sodium chloride, and aqueous Neutron diffraction study of tital 16 p2678 N68-27283 14 p2268 N68-24403 Magnetic properties of pseudobinary system of tanium-iron-cobalt s corrosion cracking of s, and steels 14 p2268 N68-24405 National survey on on street luminum alloys, titanium alloy 16 p2678 N68-27284 se point bending tests to determine relative duc-of titanium-iron, titanium-cobalt, and titanium Production, properties, and and titanium alloys in chemical [DMIC-MEMO-234] ngineering 13 p2481 N68-25961 16 p2678 N68-27285 Metallurgy of titanium a perties and heat treatment itanium alloys, their pro-Fatigue and toughness characterize aluminum, m loys, and steels ding test program to sium, and titanium al-15 p2481 N68-25962 achining characteristics of various titanium alloys industrial processing 16 p2783 N68-27867 e of titanium alloy fatigue helicopter structure 16 p2589 N68-27909 15 p2472 N68-25965 Oxygen, water, hydrogen, and chlorine environments lated to stress corrosion cracking of titanium and anium alloys - stress, temperature, and length of exng of titunium alloys and formation of titanium oxide 17 p2900 N68-28751 (NASA-CR-95493) 15 p2481 N68-25968 Critical temperature a rent densities for super-Low stress level crack propagation of titanium alloys in chemical environments (ANL-TRANS-598) 17 p2959 N68-29116 15 p2482 N68-25969 Uniaxial stress influence on velocity of ultrasonic rave propagation in steel, aluminum, and titanium alm alloys used for heat exchan-equipment in chemical industry 15 p2482 N68-25970 Titanium and titanium : gers, vessels, and other equ 18 p3122 N68-29850 ng for flash evaporator used in less titanium tub er environments Hot salt stress corresion or properties of titanium alloy sh [NASA-TN-D-4674] ting effects on teac 15 p2482 N68-25971 18 p3088 N68-30000 Chemical reaction mechanism of stress corrosion cracking of titanium alloys exposed to liquid nitrogen tetroside on TZM and molyb Corrosion re (BM-RI-7169) 18 p3093 N68-30487 15 p2482 N68-26061 ternary Ti alloys 18 p3094 N68-30563 Phase diagrams for binary an (FTD-MT-63-387) alloys with nitrogen Carbon and oxygen titanium alloys [AMMRC-TR-68-11] 15 p2483 N68-26196 Roll bonding procedu and metallographic eval panel with beryllium inser [AMMRC-CR-66-02/7] s for nickel alloy Rene 41 ation of beta titanium alloy 18 p3093 N68-30606 percenducting magnets sterial Alternating current is containing nichium titus [UCRL-18176] 15 p2474 N6B-26570 18 p3155 N68-30648 Corresion of metals and all tanium, atmospheric corre loys - electrochemistry of seion protection by am-Titunium alloy hos absorber of solar oner (NASA-TN-D-4727) ith blackened walls us monia, and regional corr [FTD-MT-24-99-67] 16 p2674 N68-27116 18 p3007 N68-30751 al behavior of titanium is phosphoric acid 18 p2874 N68-27117 Diffusion bending of t [AMRA-CR-66-10/1-5] 18 p3096 N68-30758 Design and fabricatement for submarine (AD-665004) Selected papers from symposium on phase forma-tions and transitions of tilanium-nickel and other as-sociated compounds

16 n267a N68-27267

16 n267a N68-27267 19 p3237 N68-31266 Strain gage measur various sheet titanium ing polycrystalline elus values [AMMRC-TR-68-10] 16 p2676 N68-27267 Shape memory effect and a of titanium pickel aitic transformatio 19 p3294 N68-31779 16 p2676 N68-27269

Stress corrosion cracking of titanium and titanium abunium alloys in methanol lodine solution [RIAS-TR-68-4C] 20 p3495 N68-32518 instribution in austenitic, low carton, is steel, and effects of high temperature 20 p3497 N68-32579 infocation distribution in titani-er static and prolonged cyclic 20 p3498 N68-32675 om and situation alloys approxime dies 20 p3468 N68-32733 Upset forging tests on and maraging steel using INASA-CR-963231 m alloys Hot salt stress on inum alloys in p eracking of thanks also of anhydrous hydrogen [NASA-CR-1133] 20 p3502 N68-33019 Residual stress offects on fracture strength of AISI 301 stainless steel and Ti-SAI-2.55n titanium crucked thin walled cylinders [NASA-TN-D-4777] 20 p3604 N68-33191 Magnetic flux flow [NASA-CR-96610] 21 p3752 N68-33627 Initiation of hot s on cracking of titanium alloys [NASA-CR-\$8069] 21 p3703 N68-34037 Role of moisture paion cracking of t NASA-CR-9905 21 p3703 N68-34204 m of nickel- time-(FTD-HT-67-265) 21 p3704 N68-34392 Cyclic and mate d flaw growth proporties of titumium alloys for pr (NASA-CR-92231) 21 p3704 N68-34399 Terminal fracture of tit corrosion cracks [D6-19771] m alloys containing stress 21 p3705 1468-34628 provide of elements who [D6-23294] 22 p3891 N68-35429 ing-type weer and fric-reduction test run data and utsinious steel 410 23 p4067 N66-36217 High temperature on evaluation mad on titudium alloys, a [NADC-MA-6802] Culculated temporal t 23 p4181 1968-36524 Mechanism and kins tion in titunium alloys (FTD-MT-24-194-67) table phase forms-23 pro-matible commitme and chromitme 24 p4267 NGS-375GA 23 p4077 N68-36837 Phase transformations and anium-rich allows of titusing tion and co um alloys (DMIC-MEMO-238) 24 p4268 1968-38056 Harism and Harism Judicip substitute 24 p4270 1668-38216 Stress corresion of aluminum alloys in a [RIAS-TR-68-11C] TITANIUM CARB Comented boron, t vestigated for use as (C-67788) took 02 m0216 NGS-11376 of vapor composition of (LA-TR-67-91) 12 p1836 N68-32795 FTD-HT-23-516-67] 19 p3295 N68-31906 IUM COMPOUNDE ANATASE BARIUM TITANATES NT BARIUM TITANATES
NT BLMENTE
NT LEAD TITANATES
NT PEROVSKITES
NT RUTLE
NT TITANATES
NT ZERCONDUM TITANATES 92 p0259 N68-11417 NAVATREEDE D-11T-23-9

SUB.

-

top

1

[2

di M

N.

1/

.

TON

tion fluorine 19 nuclear magnetic IAFML-TR-67-204] 13 p2010 N68-23258 of titanium 3 with Organometallic or cyclopentadienyl lign 15 p2407 N68-26034 sary systems of urani-19 p3233 N68-31972 [KFK-721] equilibria in europium m cayges sym 20 p3424 N68-32843 Crystal structure of orga unled with X ray diffraction ads of titanium 20 p3430 N68-33073 Eposide effects on stability of polypropylese TRANS-1508) dues 22 p3827 N68-35559 TITANIUM NITRIBES Sheet resistance and structure of titanium-oxygen d titanium-nitrogen films made by reactive evapora-(RAE-TR-68012) 23 p4078 N68-36917 TITANIUM OXIDES NT ANATASE NT ILMENITE NT RUTLE Metal exide ad-01 p0082 N68-10872 tory monunides having (CU-3553-4) 03 p0405 N68-12164 03 p0315 N68-12564 emperature, proton radio adiation on tituaism oxid 10 p1541 N68-19604 Dielectrics, titanium di of thin films for digital m , and vapor deposition [NASA-CR-94086] 11 p1773 N68-21433 Hunckel theory in orbital calculations for n-oxygen syst 15 p2413 N68-26203 Solubility of alum e in rutile titanium dios-16 p2611 N68-27826 Strem corrosion cracking of titusium alloys and chloride absorption during formation of titusium oxide [NASA-CR-95493] 17 p2900 N64-28751 Catalytic reactions of by o on titudium and all 18 p3027 N68-30356 m doping effect on chemical and electrical 20 p3506 N66-32307 of modified ratio the g with mother bydrog 20 p3500 N68-32346 er effects on grain cle size of red 20 p3418 N68-32508 n dioxides with also 20 p3421 N68-32686 particles in process of 20 p3422 N64-32767 ting gain 20 p3430 N48-33047 an absolute of the 38 p3434 N68-33407 (NASA TM XA1199) 22 giP951 NAS-35439 (BAE-TR-48012) 23 p4078 NAS-36917

TITRATION ge capac (ZFK-RN-17) 01 p0026 N68-10879 Methods for determining acid-base titration with ium hydroxide solutic ochloric acid, acid-bi d sulfate and carbon weights (EUR-3656.E) 05 p0625 N68-14581 m 2 by oxidation with hypochlorit (UCRL-17824) 07 p0954 N68-16259 of free scid and plutonium 07 p0956 N68-16430 fluorine, and titrimetric fluorine determination (FOA-4-B-4002-24, V. 1) 09 p1300 N68-19476 a electrodes for amperomet-ns by trikon B 13 p2021 N68-24073 m by potamium tichromate in phosp (CEA-TR-X-630) 14 p2215 N68-24839 m determination 15 p2405 N68-25808 estification of fundamental tric titration proton nuclear 15 p2419 N68-26742 by polarized electrode PG-832/W/) 18 p3031 N68-30794 tion for titration [LA-3841] 23 p4011 N68-36763 ton ionization in aqueous ric and entropy titration 24 p4211 N68-37545 ns for

ic, gravimetric, and X ray dif-or chemical analyses of (TIL/T-5728) 02 p0178 N68-11588 U TRINTTROTOLUENE

TOBACCO

Effect of st 20 p3408 N68-33479

TOLERANCES [MECHANICS] NT IMPACT TOLERANCES

10 MeV proton linear a 01 p0101 N68-10036 chine for accu 05 p0666 N68-14549 (Y-1594)

ng sets of tolerances on imput variables, subject 10 p1534 N68-19919

rd proportional round metal test pieces for tenal [REPT.-315] le testing 20 p3491 N68-33568

rance analysis in en-nia problema 21 p3783 N68-33788

TOLERANCES (PHYBIOLOGY)

NT ACCELERATION TOLERANCE

NT ALTITUDE TOLERANCE

NT COLD TOLERANCE

NT HEAT TOLERANCE

NT HUMAN TOLERANCE

NT RADIATION TOLERANCE

SAM-TR-47-95, V. I

04 p0451 N68-12952 Associated bibliography a rele acclimatization at 1 nining literature on al od to acute hypoxia

04 p0452 Net-13004 ake, and respira High altitude offsets on oxygen intake, and respira-tion during human activity, and rest cycle [NASA-77-9-11284] 09 p1283 N66-18927 Physiological adaptation of man to prolonged rota-10 p1471 N68-20555

ge-risk criterion for personnel ex-Proposed di posed to gunfin (AD-673223) 22 p3812 N68-35507

TOLUENE

nethan e - new hep-

04 p0468 N68-13522 oluene reaction

04 p0468 N68-13523

04 p0468 N68-13524 erchloro-p-xylene and rful nuclear chlorinating e by powerf

04 p0470 N68-13531 d chlorine of orobibenzyl 04 p0470 N68-13534

e - synth of perc od substances 04 p0471 N68-13543

configuration of some as of high thermal and

04 p0472 N68-13544 Raman emission from toluene and rish using giant-pulse ruby laser 07 p1005 N58-16816

(P-19) nt for procise! f carbon tetr: m gas mixtures termining thermal con-oride and toluene, and

11 p1801 N68-20662 se spectra for laser excited liquids, includ-disulfide, benzene, toluene, oxygen, and

13 p2110 N68-23957

TONE U PITCH

ONOMETRY
U INTRAOCULAR PRESSURE
U PRESSURE MEASUREMENTS

U MUSCULAR TONUS

TOOLING

Standardized to-electrical terminat [AD-659939] s, and performance of 02 p0189 N68-11394 Process and tool develops machining of ferrous alloys (FSR-ADS-08-68.1) nt for electrochemical

20 p3487 N68-32637 Effects and control of chatter in machine tool

20 p3490 N68-33314 OTR-51

TOOLS

NT GRINDING MACHINES NT MACHINE TOOLS NT MILLING MACHINES NT SPACE TOOLS NT WRENCHES

Design, testing, and quality control of large-area solar cell array, ground support equipment, and tools [NASA-CR-90[06]] 01 p0005 N68-10579 Tool shape effect on deform

(FTD-HT-67-235) 18 p3093 H68-30523

ity of steel cutting tool 20 p3487 N68-32689 [RTS-4388] Thermomechanical pro-troduction of steels - ind-ment, strain hardening, ro ues for hardoning and ion heating, heat treat-luming, and production

24 p4268 N68-38089

Cutting properties of steel tools as function of defor-ation during thermodynamic treatment 24 p4269 N68-38097

TOPOGRAPHY NT LUNAR TOPOGRAPHY NT TERRAIN

Side-looking radar photo is and topographic features (NASA-CR-9(439) raphy for mapping geolog-04 p0499 N68-13146 measurements during 05 p0659 N68-14155 n display systems develop-

05 p0688 N68-14834

d rote 20555 el ex-35507

DEX

13522 ection

13523 e and 3524 and sating ie to

3531 sated 3534 of 3543

1544 and 816

662 lud-and 957

of eal

ol 14

al flight rules pilot, and ing topographic data 05 p0689 N68-14842 06 p0800 N68-15818 [U67-1043] o of earth surface ACIC-TC-1250] 09 p1332 N68-18487 hy on erosive action of 09 p1338 N68-19423 on 5 degree by 5 degree 10 p1520 N68-19690 FORTRAN progr ng parameters for [REPT-1154] 11 p1692 N68-21560 tan Current 11 p1693 N68-21657 [REPT.-67-24T] 13 p2060 N68-23578 [ACIC-TC-1284] Fine-scale topog deep sea floor off s [MFL-U-3/68] 13 p2063 N68-24013 Topography of An barometric surveys [NIC-TRANS-2561] 14 p2245 N68-24479 14 p2241 N68-24927 Topographic effect plication to north Atle [TR-25/ONR/] sea circulation with ap-19 p3273 N68-31751 ts on prevailing surface Antarctic top [UAG-R-189] 22 p3867 N68-35110 ts for topographic 24 p4252 N68-38055 Distribution of land and ses in Northern Hemisphers and effects of topography and heating considered in numerical study of atmospheric circulation (APCRL-68-0291) 24 p4282 N68-38138 d ses in Northern Hemisphere y and heating considered in TOPOLOGY NT FIXED POINTS (MATHEMATICS)
NT HOMOTOPY THEORY
NT IMMEDIATIONS (MATHEMATICS)
NT LINKS (MATHEMATICS)
NT LINKS (MATHEMATICS) graphic represen of pools N68-10678 [TR-2] Point-free carrier space topology for commutative 02 p0230 N68-11838 logy, and monotone INASA-CR-907531 02 m0231 N68-11905 rm of differential equa-really used in existence theorems for p 06 p0860 N68-15236 ralized to complex Banach space [MRC-TSR-785] 06 p0861 N68-15325 ence theorem of AD-6622331 06 p0865 N68-15631 trence between 08 p 193 N68-17572 drawing diagrams of interconnected nodes APOSR-44-01151 Properties of investigation into connect 10 p1544 N68-19600 10 p1546 N68-19736 11 p1721 N68-30609 ogy, onym 11 p1721 N68-20613

Manifolds in conjugate spe-11 p1723 N68-20666 d design 11 p1793 NGB-20852 11 p1728 N68-20960 Topological dyna Volterra equations (NASA-CR-94107) 11 p1731 N68-21400 nal topological 12 p1897 N68-22101 of continuous, weakly mappings on operator 12 p1897 N68-22146 12 p1899 N68-22334 dorff topological 12 p1899 N68-22351 Structural analysis as stellarator diverter [MATT-TRANS-46] etic field topology of 12 p1857 N68-22951 Factors of manifol 13 p2092 N68-23214 Recursive funct ical systems of dif-14 p2280 N68-24978 15 p2491 N68-25990 Network and topol nonlinear space frame [NASA-CR-75506] on of analyses of 16 p2782 N68-27743 ction spaces and 17 p2935 N68-29167 for digital computers for activort analysis 17 p2865 N68-2935 Single tree-finding evaluation of topolo [NASA-CR-95774] ons of Lie al-17 µ2941 N68-29428 (18-17) 18 p3065 N68-29566 s of set of lines 18 p3102 N68-29791 LC circuits for prescribed 18 a3050 N68-29942 agy, and optical coeffi-nyl alcohol gel, and 18 p3098 N68-30035 9 m3300 H68-31050 nctional analy 19 p3300 NGB-31077 ogically non-trivial 19 p3301 N68-31250 a algorithms for use 20 p3514 N68-32740 s in mechanical or less, their and defer FTD-MT-44-358 20 p3515 N68-33115 20 p3516 Neg-33116 NASA-CR-53133 21 m3672 N69-33837 22 p3000 Ned-33344 RAC-TP-326 23 page 1468-36126 n algebras on man 23 p4009 NSB-36706 --

23 p4091 1468-37284 d for mode determinants M 200-M APT 24 p4276 1968-37992 mechanics of topol (CRREL-RR-207) 24 p4278 N68-32341 11 p1689 N68-21247 TOROUDAL DESCRIP aible cause of pla ace in high curre toroidal discharge (MATT-TRANS-53) 14 p2323 N68-24826 charge in variable (NF-TR-1622) 14 p2325 N68-25031 High frequen ing respectic field 20 p3554 N68-32494 of plants to b 22 p3943 N68-35505 DAL PLA antych on requirer plants (staffacture of jelical multipolar fictis on terricis (IPP-1-61) 07 p1064 N68-17097 08 p1217 N68-17387 ILA-3749) 09 a1401 N68-18531 MATT-TRANS-431 09 m1401 N68-12570 in skip, Gries be Hydroma (LA-3778) 12 a1950 N68-2290 14 p2322 1668-24621 of unbooker into in [GA-8141] 14 p2323 1668-24736 14 p2324 N68-24912 Properties of te ICED ISSUE 15 p2535 No. in believe P-TR-1644 i model of ten 19 p3330 NGB-310 26 p.2555 1440-23 1379-671 21 p3750 1446-3437 (UCID-13334) 22 p3942 1660-35321 PASA-TT-F-11630 There CEASO 25 p4136 NGS-3 Toron LICEL-TRANS, MCCCC 23 parts 1600-3676

INAS

decor studie [NAS

TOWE Th

|NEL

Las unifor with f

De

Per

INAS

TOWE

TOWE

[AD De

Ba tions /auto (GE)

N

from [NP

TOWN

H

heat [AR

TOXIC

Te

on r

T

AC

(SC

irra

IBN

ni j

Cabi

1

TOXIC

Infl

TOROIDAL SHELLS idal and ogival tanks 01 p0141 N68-10238 Stress analysis of st [NASA-CR-61183] Differential system and tran theory applied to general rotate fer matrices of bending 03 p0418 N68-11910 High vacuum toroidal device for long term containment of electron clouds [NYO-3863-1] 05 p0641 N68-14104 Magnetic shield simulator stud ductor as shield for small volume dy of quani-hollow con-e toroidal vehicle 15 p2551 N68-26136 Initial displacements by axial edge loading and hydrostatic pressure in stress analysis of toroidal shells 17 p2980 N68-28695 Drop test study on isothermal liquid-vapor interface configuration during weightlessness in toroidal shell [NASA-TN-D-4819] 22 p3863 N68-35823 n to asymmetric loading of thin [TAE-88] 24 p4350 N68-38149 TOROIDS Reluctance of toroidal coil with rectangular cross 03 m0385 N68-12570 Torques on supercond various uniform fields cting lead toroids immersed [NRL-6618] 09 p1380 N68-18438 Optimal cross section for to winding [NRL-MR-1848] 11 p1631 N68-21619 Design, operation, and temperature compensation of toroid for precision pulse generator [UCRL-17639] 12 p1874 N68-22413 X ray and optical measure octron distribution function in rements for determining in toroidial systems 14 p2318 N68-25399 Effects of toroidicity on magnetic surfaces of stel-[NP-TR-1636] 16 p2639 N68-28046 Precision toroidal charge monitor for linear ac-[SLAC-PUB-398] 19 p3281 N68-31907 TORQUE Classification of clutches according to task, torque capacity, type, design, and actual 02 p0217 N68-11487 [NASA-CR-90346] U2 p0217 Non-11487 Comparison of wind tunnel data with transonic speeds tonque of Faiery Delta 2 aircraft [ARC-R&M-3485] 04 p0445 N68-13675 Four-square goar test rigs, master gear arrangements, and wear rate successments for instrument sized gears NASA-CR-92665] 07 p1003 N68-16901 [NASA-CR-92665] Torques on supercond in various uniform fields [NRL-6618] facting lead toroids immersed 09 p1380 N68-18438 Equations of motion, including gyroscopic moments, sonverse shear, and rotary inertial effects, for rotor stems subject to exial tanque 09 p1384 N68-19282 ction of fluid dynamic torque of butterfly valves [NPL-AERO-1201] 13 p2077 N68-24112 Theoretical approach to determination of magnetic eques on orbiting spacecraft by near-field measure-13 p2110 N68-24146 [NASA-TN-D-4485] Free lateral vibrations of uniform annular plate sub-jected to initial static tempor 15 p2567 N68-25923 ate nonlinearity effects norselt 16 p2661 N68-27460 on utilitade gyron for Apo (NASA-THE X-60126) Spinning friction and a bearing groove conformity [NASA TN-D-4669] e dependence on bull 16 p2672 N68-28258 QUE MEASURING APPARATUS TORQUEMETERS TORQUE MOTORS Design of tempse motor controller, and operation of freealboard control certail [NASA-CR-91686] 05 p0638 N68-14644 Development of warm di phrasine faeled gas generators fastribution system for rs for spacecraft attitude NASA-CR-91661) 09 p1278 N68-19389

nicket engines 12 p1962 N68-22530

13 p1995 N48-23601

nce tents and temper-speed graphs for counter invertor system

Component tests and system assembly for hydratine fuel gas distribution system of torque generator for apactoraft attitude control [NASA-CR-94762] 14 p2193 N68-25097 TOROUEMETERS Design of test stand for measuring torque of rotor operating in open-ended enclosure
[D1-82-0743] 21 p3625 N68-34148 Compilation of summaries on geodetic control using stronomic/torsion balance observations and gravimet-ic reduction of leveling (REPT.-99) 21 p3687 N68-34589

TOROUERS Literature survey of late data on construction and performance of gyroscopes and accelerometers [NLR-V-1959] 10 p1531 N68-20446 Analytical design and computer study of satellite at-titude control system using integrating gyros as (BMWF-FB-W-67-41)

11 p1738 N68-21715 Magnetic torquing coil for spin control of dual spin 20 p3597 N68-33537

TORSION Torsion creep of circular and no

noncircular tubes 11 p1791 N68-20608 Instability of titanium and titanium alumin [TR-54] 11 p1716 N68-21718

Mathematical model for calculating free torsion odes of Atlas Agena Ranger and Atlas Centaur Surtypor spacecrafts [NASA-CR-94293] 12 p1971 N68-22024 n of elastic cylindrical Cos Cosserat surface 20 p3602 N68-32816 [AM-68-2]

ty gradients in southeast Ohio (REPT.-89) nts and horizontal gravi-21 p3687 N68-34573

TORSIONAL STRESS

Mathematical model for torsional stress forming of impressible cylinder 01 p0145 N68-10912

Torsional loss of stability in plastic de 02 p0278 N68-11674 plastic cont

Nonlinear theory of elastic-pl presence of simple force and stress of [AM-67-12] 07 us dipoles 07 p1090 N68-16458 ear stress-strain curves of iron under torsional impact loading TR-0158/3250-40/-31

10 p1539 N68-19999 s of three dimen-

Mixed boundary value problem sional elasticity theory 11 p1793 N68-20729 Simple force and stress dipole theory in terms of tor-sion of circular cylinders of elastic materials [AM-67-15] It p1798 N68-21394

Measurement of momentum transfer from medium energy neutral atomic beams using torsion balance technique for beam calibration [NASA-CR-94689] 14 p2234 N68-24458

Monte Carlo solution for torsion problem of 14 p2355 N68-24591

Stress analysis of initial post-buckling behavior and sperfection sensitivity of thin walled cylinders in tor-[NASA-CR-88232] 15 p2565 N68-25683 Single wire torsi ium theory applied to

15 p2511 N68-26618 measurement of n Stress analysis in com [AD-671946] xial stress-torsion test 20 p3601 N68-32621

Hot torsion test method for determining practic perties and hot-workability of staets 20 p3502 N68-33000

Torsional-flexural buckling of thin-walled open sec-ions under eccentric axial loading 21 p3781 N68-33620

Elastic analysis of grillages including torsional effect and stability 21 p3787 N68-33890

Numerical solution for elastic-plastic torsion of mul-tiply connected cylinders using quadratic programming (DOMBT-1-37) 21 p3790 N68-34588 on cruise mode operations of Mariner 4 an (NASA-CR-97151)

23 p4175 N68-36324

TORSIONAL VIBRATION

Torsional model develo tions for cylindrical space employing clustered tanks [NASA-CR-937] opment and model calcula-vehicle systems and systems 01 p0143 N68-10568 Equations governing torsional vibrations of unstif-fened cylindrical tubes [AE-156S, PT. 2] 01 p0144 N68-10684

01 p0144 N68-10684 Flexural vibration nal characteristics of symmetric [AE-1578] 01 p0144 N68-10712

od flexural vibrations of open tubes 01 p0144 N68-10768 [AE-1595] Analytical investigation of torsional vibrations of omogeneous and sandwich spherical caps and circular lates AFOSR-67-1982] 01 p0145 N68-10919

Mathematical analysis of uncoupled torsional vibra-tions of open tubes [AE-158\$] 02 p0275 N68-11284

Analytical method and numerical computations for stermining coupled torsional-horizontal vibration of [MTB-010054] 05 p0751 N68-14769

Digital program for calculating upper and lower ounds of missile torsional vibration 06 p0921 N68-15574

Quantitative analysis of torsional vibration viscous displication fluid coupling [82]

Fourier transform for predicting torsional transients for one spacecraft based on flight data of another with same booster [NASA-CR-92994] 07 p1079 N68-16424 Computed spherical oscillation tables for earth

[NASA-CR-92717] 07 p0992 N68-16733

Damping of piezoelectric quartz crystal driven in tor-nal mode of vibration in liquid helium 3 and helium INASA-TN-D-43811 08 p1223 N68-17594

Right circular cylindrical and viscoelastic specim subjected to forced, sinusoidal, and torsional oscill tion - complex shear modulus of LX-04-1 explosi [UCRL-50357] 16 p2672 N68-28139

Viscoelasticity of simple hydrocarbons at high pressure measured by torsionally oscillating quartz rod 18 p3098 N68-29907

TORUSES

Charge injections in torus, holes in electron clouds, and analog tank for plasma radiation shield [NASA-CR-89956] 01 p0117 N68-10398 Motion analysis for multiply-connected body in ideal fluid 02 p0200 N68-11550

High performance insulation design, and manufac-turing plan of torus tank for Saturn 5 vehicle [NASA-CR-61557] 07 p1003 N68-17099

Quasi-static approach to solving low frequency acat-tering of acoustic and electromagnetic waves by torus 22 p3940 N68-35049

Negative V system with deep well torus for confine-ment of high temperature plasma [IPPJ-69] 22 p3944 N68-35619 22 p3944 N68-35619

Length of winding on torus in two ideal models [NASA-TM-X-1674] 23 p3995 N68-37217

U TACTILE DISCRIMINATION

TOUCHDOWN

AVRO 707 aircraft pilot's control movements and toochdown accuracy analyzed for two distinct cross-wind landing techniques [ARC-R&M-3476] 06 p0766 N68-15756 Lunar module scale model study of use of soft side legs for improved touchdown stability of legged landing INASA-TN-D-46801 18 p3169 N68-29962

TOUGHNESS NT NOTCH SENSITIVITY

Strain-induced transformatio toughness of high strength steels (UCRL-17810) s effects on fracture 07 p1006 N68-16169 Production and testing of tough, high strength alpha-eta titanium base alloys with improved durtility and WAL-TR-401/303-131 13 p2085 N68-24148 Strain tempering effects on toughness of martensitic 19 p3289 N68-30875

Performance tools on to dust propollant vrives for a [NAIA-CR-61732]

SUBJECT INDEX TOURNIQUETS ular reflex conditioner 02 p0164 N68-11008 [NASA-CR-90248] Inflatable tourniquet effects on cardiovascular deconditioning during bed rest and water immersion studies on humans [NASA-CR-92085] 12 p1824 N68-22529 12 p1824 N68-22529 TOWED BODIES Thermistor chain for measuring sea temperature structure of upper layers [NEL-1395] 03 p0340 N68-12486 VEL-1393]
Laminar flow of stable stratified salt water with niform upstream velocity and density gradient, and its flat piste towed horizontally in water tank D1-82-0488 08 p1163 N68-17943 Design, fabrica sting of flexible wing towed universal glides [REPT.-29267-1] 11 p1625 N68-21772 ngitudinal stability of nic data included 18 p3002 N68-30263 Perturbation analystowed glider, lift and a [NASA-TT-F-11760] TOWED TARGETS U TARGETS TOWERS NT UMBILICAL TOWERS Surface roughness length analysis of 150 meter seteorological tower at Cape Kennedy launch com-NASA-TM-X-53690] 09 p1368 N68-18784 Structure and foundation behavior of mimile range radar towers observed for effects of antenna operations [AD-664764] 10 p1496 N68-19904 Determining wind load effects on stability of guyed 10 p1606 N68-20080 Basic design concepts and potential future applica-na of automatically erectable towers and masts (GER-13195A) 16 p2785 N68-27935 Natural bending frequency of fifty story octagonal tower calculated by displacement matrix analysis and from wind tunnel experiment [NPL-AERO-1239] 17 p2982 N68-29388 TOWNSEND DISCHARGE NT GAS DISCHARGES NT TOROIDAL DISCHARGE TOXIC DISEASES Toxicity, and radiation effects on incidence of dis-ase, sex hormones, and enzymes in dogs for research

Heating of air by means of Townsend discharge-heating of working fluid of hypersonic wind tunnels [ARC-R&M-3519] 11 p1804 N68-21355

on radiobiology [COO-119-236] 17 p2827 N68-29351 Toxic diseases and physiologat reduced pressure and long et [AGC-3266] pical effects of hyperoxia 18 p3009 N68-30137

TOXIC HAZARDS Methods for determining face fit for respiratory pro-ctive devices (SC-RR-67-461) 01 p0018 N68-10988 Ozone and nitrogen oxide concentration in gamm irradiator operating chamber as potential health hazan

05 p0645 N68-14743 [BNL-TR-160] Inhalation toxicity of bro sis products in rats methane pyroly-

09 p1280 N68-18748 Toxic damage effects on a als in simulated space 10 p1472 N68-20565

on hydrasine or fluorine logy in man and animals 10 p1472 N68-20566

of diffusion equations hazard areas 11 p1688 N68-21132 Applications and lifts prediction of poten (BNWL-572, V. 1) Reduction of flar

toxic materials for use ft cabin atmospheres 14 p2204 N68-24756 in oxygen rich manne (NASA-TN-D-3415) tolerance to trace con-atmospheres studied for

Toxic hezards and hun minants in spacecraft ca life support system design [AMRL-TR-67-146] 18 p3009 N68-38[35 ences into cabin at-Liberation of toxic s (JPRS-46403) 22 µ3810 N68-35181 TOXICITY

ethylhydrazine effects upon renal function in (SAM-TR-67-61) 01 p0013 N68-10809

mechanism (SAM-TR-67-64) 03 p0306 N68-12336 olved inside vehicles dur-d volatile, materials from Analysis of traic fur ing environmental test heated reinforced plast [ERDE-9/R/67] 04 p0460 N68-13091 Effects of di on evoked cerebral

neuroelectric responses of cats [AMRL-TR-67-67] 08 p1129 N68-17730 Oxygen toxicity infaging in rabbits [AMRL-TR-66-168] rate of red blood cell 09 p1278 N68-18304

Trace concentration spacecraft cabin atmospi weeks duration 10 p1467 N68-20165

Dynamic flow gassing chamber for testing toxicity of nitrogen dioxide and nitrogen tetroxide in small animula (SAM-TR-67-80) 11 p1639 N68-20690 11 p1639 N68-20690

for prediction of pote (BNWL-572, V. 1) 11 p1688 N68-21132 Chemical and biological tests on toxicity of tellurium and tellurium compo INRC-TT-12831 12 p1823 N68-22476

imals exposed to coone, on oxide 15 p2398 N68-26728 Physiological responses of ani carbon tetrafluoride, and aitroge [NASA-CR-95106] TOXICITY AND SAFETY HAZARD

Safety handling techniques for radi materials in nuclear ceramic research [GEMP-557] 05 p earch 05 p0681 N68-14875 Toxicity and safety hazards to personnel from in-haled aerosols and dusts of rare metals, metal alloys, and metal compounds (AEC-TR-6710) 23 p4000 N68-34888 TOXICOLOGY

Space cabin toxicological experiments on animals 08 p1134 N68-17369 Effects of dimethylhydranine on evoked cerebral neuroelectric responses of cats [AMRL-TR-67-67] 08 p1129 N68-17730 TRACE CONTAMINANTS

Trace contaminant ide double resonance spectroscopy [NASA-CR-967] 02 p0248 N68-11634

Reaction gammas for mitters of high spec yeis of impurities in alpha tivity for isotopic power penerator heat source DPSPU-66-30-121 05 p0718 N68-14734 Titanium impurity analysis in ferro-niobium by spec-

[NASA-TT-F-11586] 10 p1483 N68-19785 oxic contaminants in uring missions of over 2 10 p1467 N68-20165

Ultraviolet measurements of oil contamination in op-[NASA-TN-D-4612] 14 p2259 N68-25375 Manual methods to measure metal impurities, hydrogen, and (BNWL-890) oxygen, carbon, trace nitrogen in sodium 16 p2614 N68-28127

a of traces of copper, amenic, and antimony in steels by neut IAERE-AM-106] 16 p2615 N68-28196

ion exchange separation and flame emission spec-ometric determination of trace impurities in rare earth compounds [IS-T-223] 17 p2842 N68-29121 nierance to trace con-traceplares studied for

Totic harards and huma taminants in spacecraft cab life support system design [AMRL-TR-67-146] 18 p3009 N68-30135 ing metallic and in-Analytical methods for discretitial impurities in high p (BM-IC-8397) 22 p3819 N68-34832

of tiquid helium 3 and 23 p4106 N68-36170 Tunnel effect model of imple crystals ity motion in alkali ha-

24 p4328 N68-37470 in pelletized and pow-Trace impurity deter dered uranium dioxide [NASA-TT-F-11969] pels 24 p4214 N68-37742

Neutron activation trace elements in hum (SGAE-BL-21/1967) 01 p0014 N68-10911 Magnetic scale for measuring quantitative traces of paramagnetic substances in lanthanum oxide 01 p0126 N68-10916

01 p0026 N68-10948 (ORNL-P-3261)

silicin trace elements crosse crystal structure, tend metal lifetime 02 p0222 NSS-I 1604

of trace elements in rom Viskan Valley on 02 p0207 N68-11622

Distribution of trace ents in iron meteorites dischemical separations 05 p0623 NSS-14415 from neutron actir (AERE-R-5254)

etermining 8-hydro ements during solve 05 p0624 N68-14496 ence of trace ele-

Methodology for X ray fit ments in human fluids and tim [UCRL-70351] 06 p0776 N68-16099 ion exchanger for extr

[USNRDL-TR-67-129] 07 p0958 N68-16693 Trace elements in apor mination of bacterial aport [NASA-CR-93684] on of bacteria and ger-

09 p1284 N68-19322 Errors, preci mining trace of (LB/G-2584) 11 p1655 N64-21457 man, alver, in-

dium, and rine in polycrys [CEA-R-3136] 12 61839 N68-22742 ers during cont 13 p2010 N68-23207

estration gradient Tracer diffusion in silver-gold alloys 13 p2013 N68-23530

determining fraction of all urine in tracer experi-SAM-TR-68-29) 13 p2007 N68-24128

elements in chronditic stary rocks 16 p2656 N68-27812 Rare earth elements as electrites and terrestrial

spectroscopy, and so-of plan fragments 16 p2692 Red-28116 (AWRE-O-3/68)

Labelling tri with iodine 131 [CNEA-223] 17 p2847 N68-29531 phic date

18 p3029 N68-30540 X ray spectral analyment inclusions in the (NASA-TT-F-11752) ion of tract ele-19 p3271 N68-31574

Trace element alice age, counic dust in oce (COO-382-76)

(ORO-3858-19) 11 p1651 1968-21128 ritories andi-SZS-4(68) 17 p2877 1968-28960

Radioactive duck inhaled by luman requiratory atom and deposited in assopharysts, trackets, and CEA-1.3234] 07 p0947 N68-17046 RACKES U. TRACKING (POSITION)

U TRACKING (POSITION)
TRACKING (POSITION)
TACKING (POSITION)
NT COMPENSATORY TRACKING
NT MISSILE TRACKING
NT OPTICAL TRACKING
NT PROSTOT TRACKING
NT PROSTOT TRACKING
NT PROSTOT TRACKING
NT RADIO TRACKING
NT RADIO TRACKING
NT RANGE AND RANGE RATE TRACKING
NT SATELLITE TRACKING
NT STACE DETECTION AND TRACKING
NT STACE DETECTION AND TRACKING
NT STACKING TRACKING

0 -01% MAR 19791

IRAE

Landeflec [NAS

Win

fuscia [RAE

Lift trailin sonic

(SUD

TRAILI Asy equati trailin (DAC

Por field is [NAS

Bas

Per vanes with ri (TN-I

Car aerod [NAS

Lan

TRAIN

TRAIN

TRAIN

by A-

Cap mach (HUN

TRAIN

Tre

Ope

Cha jet fig TR-4

Air

Fla for pi

TRACKING ANTENNAS Photoelectric scanning devices of automatic search and tracking using methods of aonal element scanning [FTD-MT-67-68] 03 p0332 N68-12265 Tracker for locating geometric centers of Mars, Venus, or Jupiter [NASA-CR-73162] 04 p0572 N68-13021 Parameters are defined for output waveforms used in scan patterns for locating geometric rather than lu-minous centers of planets [NASA-CR-73163] 04 p0573 N68-13022 Mean wind deterr s from balloon tracking 04 m0503 N68-13601 Data analysis, operational procedures for tracking and communications, and positions of observation sta-tions for National Geodetic Satellite program [NASA-CR-91638] 06 p0840 N68-15758 flite program 06 p0840 N68-15758 Systems analysis of antenna tracking servo systems and adaptive techniques for improving accuracy and adaptive techniques for improving accuracy 15 p2422 N63-25786 Real time meteorological balloon tracking data evaluation for wind measurements in upper at-(ECOM-5184) 15 p2497 N68-26580 Acoustic array with capacitor microphone sensors for sonic observation of gun probe projectiles [ECOM-5166] 15 p2471 N68-26926 Microwave deep space communications and tracking improvement potential for lunar and planetary explora-20 p3438 N68-33180 Surveyor 1 and 2 trajectories determined from tracking data [NASA-CR-96719] 21 p3771 N68-34318 Flash distribution and illuminance level effects on human search and detection of low intensity, dynamic light stimuli 21 n3641 N68-34528 Systems design of digital computer real-time control istem, and interface hardware for early launch laser (NASA-CR-61981)

23 p4019 N68-36453 Performance comparison of electromechanical and lectroluminescent displays in closed loop manual tacking task and reading accuracy tests NASA-TN-D-4841] 23 p4002 N68-36457 tracking tank and read [NASA-TN-D-4841]

TRACKING ANTENNAS U DIRECTIONAL ANTENNAS TRACKING FILTERS

Filter properties of least squ [NASA-TM-X-43321] re fitted polynomials 21 p3662 N68-34567

TRACKING NETWORKS

NT GLOBAL TRACKING NETWORK

NT MATTS [SYSTEMS]

NT SPACE DETECTION AND TRACKING

SYSTEM
TADAN [SATELLITE TRACKING NETWORK] NT STAD

Reliability of network and circuit teletypewriter of Manusod Flight Communications Network and Scien-tific Satellite Communications Network [NASA-TM-X-46571] 01 p0031 N68-10743

Flight path of Mariner 4 determined from deep space instrumention facility tracking data [NASA-CR-89968] 01 p0136 N68-10937

Space navigation, tracking, and telecommunication engineering for deep space instrumentation network [NASA-CK-90199] N68-11006

Method for determining actual line-of-sight visibility contours for satellite tracking antennas [NASA-TM-X-63038] 02 p0182 N68-11580

Lunar module tracking experiment using synchronous relay network [NASA-CR-91071] 03 p0324 N68-12701 Oscillator stability in range and range rate tracking

[NASA-CR-80891] 05 p0631 N68-14819

Chronological order of events concerning satellite, scientific assenting rocket, and spacecraft missions tracking, command, and data acquantition facilities (IAASA-TM-X-60818) 17 p1084 N68-16193

Ground network support, trajectory and guidance, ad spacecraft flight operations for galactic Jupiter

NASA-TM-X-43149] 10 p1497 N66-20036 Basic and applied research, applications and ocien-tific satellite development, and tracking and communi-cations responsibilities of Goddard Space Flight Center

INASA FACTS 0-5/10-671

11 p1679 N66-20992 Congressional hearings on budget requests of NASA Office of Advanced Research and Technology,

Technology Utilization Division, and Office of Tracking and Data Acquisition 11 p1807 N68-21275

Long arc orbital solutions from Geos-1 satellite used to evaluate range and range rate tracking system [NASA-TM-X-63159] 11 p1664 N68-21660

Performance analysis on Apollo reentry acquisition and tracking radar [NASA-TM-X-63180] 13 p2028 N68-23733

Geometric optical satellite tracking network [AD-666238] 16 p2650 N68-26998 French national satellite tracking and control net-

17 p2867 N68-28528

Spacecraft orbits and ground stations for communi-tion and scientific satellites in European space pro-19 p3305 N68-31044

ESRO 2 launch program operational organization ad description of data acquisition and tracking net-19 p3372 N68-31121

Evaluation of errors in space detection and tracking system for European space programs 19 p3306 N68-31124

Organization of ESRO tracking network for satellite data acquisition

19 p3260 N68-32120 Central computing facility and distributed station sonitors for navigation satellite operational mode

(NELC-1548) 20 p3526 N68-32732 nd tracking network 21 p3766 N68-34072 ESRO operational program a

ESRO telemetry, telecome d and tracking stations 21 p3658 N68-34074

ESRO telemetry, telecommand and tracking stations at Redu, Ny Alesund, Fairbanks, and Port Stanley. 21 p3658 N68-34082

TRACKING RADAR

Tracking performa band radar equipm ce of Apollo land and ship based C band radar equipment [NASA-TM-X-63049] 04 p0475 N68-12878 Diversity receiver carrier frequency reproduction-ethod for providing Doppler extractor with frequency of phase information similar to received signal

received signal 04 p0480 N68-13879 [NASA-TM-X-63069] Cost versus performance relationships for phased [RM-5380-PR]

08 pl148 N68-17916 Performance analysis on Apollo reentry acquisition

and tracking radar [NASA-TM-X-63180] 13 p2028 N68-23733 Phase amplitude mor se radar, signal processing

and accuracy investigation [SAAB-TN-64] 15 p2423 N68-25804 Trajectory analysis with radar tratransponders 21 p3659 N68-34179

Design parameters for developing phased array equisition and tracking radar for onboard experiment acquisition and tract in Apollo spacecraft (NASA-CR-92249) 21 p3659 N68-34242

TRACKING STATIONS

NT DEEP SPACE INSTRUMENTATION FACILI-

NT GLOBAL TRACKING NETWORK
NT SPACE DETECTION AND TRACKING
SYSTEM
TRACKING NET-NT STADAN (SATELLITE TRACKING NET-WORK)

Laser tracking data from BE-C and Goos-A satellites, and analytical and statistical techniques employed [NASA-CR-93411] 09 p1349 N68-18507

Least squares adjustment of satellite observations for simultaneous directions or ranges [NASA-CR-93425] 09 p1333 N68-18763

Geodetic and Cartesian station coordinates on SAO C-5 standard earth for Geos tracking stations [NASA-TM-X-63157] 11 p1665 N68-21720 Computer design for real time control of tracking station equipment

15 p2431 N68-25785 interferometry, orbital computations, and data assorphing operations at Diane station for satellite tracking

19 p3236 N68-31122 Gravimetric method for determining geocentric nordinates of satellite tracking stations 19 p3274 N68-32006

Automated ground station software program to con-trol four tracking links by single computer [NASA-TM-X-63335] 23 p4021 NaS-36773

Second Bulgarian artificial satellite tracking station /description/, and trends in development of inorganic, organic, and physical chemistry in Poland [JPRS-4640] 24 p4358 N68-38325

Second Bulgarian artificial satellite tracking station of new astronomical observatory

24 p4229 N68-38326

Dynamic hydroplaning, viscous hydroplaning, and re tread rubber reversion effects on tire traction on [NASA-TN-D-4406] 10 p1457 N68-19620

TRACTS U SITES

TRADEOFFS

Tradeoff design study in spacecraft tape recorder [NASA-CR-92539] 06 p0848 N68-16100 Systems analysis and tra absystems for recommended radeoff data on electrical led Voyager spacecraft con-

[NASA-CR-93528] 09 p1436 N68-19156 Trade studies, engineering analyses, and support to for mission 1A of Apollo applications program -

NASA-CR-61791] 14 p2343 N68-24578 Trade studies, engineering analyses, and support data for mission 1A of Apollo applications program -

part I NASA-CR-61788] 14 p2343 N68-24579 Trade studies, engineering analyses, and support data for mission 1A of Apollo applications program -

NASA-CR-61790] 14 p2343 N68-24580

NT AIR TRAFFIC

Acoustic measurements of noise from freely flowing ad traffic and method for predicting traffic noise [NPL-AERO-AC-29] 14 p2298 N68-24777

Predicting large deflections of flat rectangular plates subjected to nonsymmetric loads, and design of energy absorbing highway protective barrier system [ARA-94, PT. 6] 18 p3175 N68-29713

TRAFFIC CONTROL

NT AIR TRAFFIC CONTROL

NT RADAR APPROACH CONTROL

Asymptotic stability studies in simulated car follow-ing situation - applicability of modified manual control unit for improved car following performance 06 p0785 N68-15932

Phase difference navigation satellite system for air and marine navigation and traffic control [NASA-CR-86028] 07 p1087 N68-17172 Analytic methods for motor vehicle air pollution pol-

(P-3776) 10 p1616 N68-19873 Optimal vehicle control for merging problem (ESL-R-327) 10 p1617 N68-20397

Navigation and traffic control of ships and aircraft through use of satellite observations [NASA-TT-F-11750] 19 p3306 N68-31502

TRAILBLAZER 2 REENTRY VEHICLE

Photographic and spectrometric observation of iron, artificial meteor isunched from Trailblazer 2, and reentering at 11 kilometers per second [NASA-TN-D-4312] (7 p1081 N68-16750

Interaction of microwave radiation with shock onized flow fields, and methods for measuring deter-rative effects of plasma sheath on aerospace vehicles 13 p2029 N68-23936

Attitude determination of spin-stabilized spacecraft using star mapping technique [NASA-TN-D-4740] 19 p3308 N68-31937

Functions and characteristics of telemetry equip-ment for FM/FM trailer, ground station H (NASA-TM-X-63004) 01 p0028 N68-10168

TRAILING-EDGE PLAPS Spanwise loading analysis for swept wings with trailing-edge flaps at subsonic speeds
[ARC-R&M-3487] 03 p0297 N68-12428

Duta analysis from wind tunnel tests on hypersonic flow separation shead of flat plates with trailing edge flags using simple flow model [RM-383]

Constant pitch rotary wings controlled by trailing edge, blade tip flaps with blowing slits
04 p0435 N68-13417

Static pressure and flow field for flat plate model with short trailing-edge flap [NASA-TN-D-4308] Os p1160 Na8-17376

A-1316

EX

tion mic,

325

tion

326

620

100

156

78

79

80

13

12

12

3

7

2

athematical models and experimental analysis of dary layer control around wing with trailing edge [NASA-TT-F-11675] 13 p1988 N68-23512 Wing lift increase by boundary layer control with blown flap at trailing edge [RAE-LIB-TRANS-1267] 15 p2379 N68-25778 Laminar flow separation on flat plate induced by deflected trailing-edge flap at hypersonic speed [NASA-TN-D-4671] 17 p2804 N68-29405 Wings with leading edge flaps with and without fuselage [RAE-LIB-TRANS-1268] 17 p2805 N68-29445 Lifting pressure distribution on tail or wing, with trailing-edge flap control surface, oscillating in sub-sonic flow (SUDAAR-336) 18 p2993 N68-29692 TRAILING EDGES Asymptotic procedure applied to Navier-Stokes equations in study of uniform shear flows merging at trailing edge of flat plate [DAC-60862] 02 p0199 N68-11373 Porous trailing edge effect on blade generated sound field in moving air stream [NASA-CR-66565] 10 p1455 N68-19791 Singularity method for computing incompressible otential flow about thick wing and cascade profiles with tapered trailing edges [RAE-LIB-TRANS-1276] Performance evaluation of thick and this turning vanes with extended trailing edges in square conduits with right angles [TN-8] 19 p3193 N68-31284 Cascade wind tunnel experiments to determine serodynamic effects of air flow on trailing edges [NASA-TT-F-11850] 19 p3194 N68-31354 Laminar flow around trailing edge of flat plates 23 p4043 N68-36024 hub tip ratio to [VKI-IN-27] U STUDENTS TRAINERS TRAINING DEVICES TRAINING U EDUCATION TRAINING AIRCRAFT NT CL-41 AIRCRAFT NT T-33 AIRCRAFT Assessing F-9J aircraft service life and replacement by A-4 aircraft in advanced jet pilot training program [INS-RC-23] 13 p1993 N68-24022 [INS-RC-23] 13 p1993 real-24022 Exprise helicopter attached to ground effect machine as flight training device [HUMRRO-TR-68-9] 23 p3990 N68-36569 TRAINING DEVICES
NT TEACHING MACHINES Resolution criteria for optical and photographic [NAVTRADEVCEN-IH-137]

Basic design and rotor performance of blunt trailing tge blade supersonic compressor 11 p1620 N68-21487 13 p1990 N68-24333 dynamic characteristics of flat plate wing with and leading edge control surfaces in hypersonic 14 p2180 N68-24693 ant trailing edge blade concept application to low ip ratio transonic and supersonic compressors -[N-27] 24 p4194 N68-38033 03 p0343 N68-12289 Training algorithms for pattern recognition machines 06 p0819 N68-15583 Operation, and performance of electronic main-tenance task simulatur [AMRL-TR-67-140, V. 1]

09 p1314 N68-18395

m on visual recognition of figurations 11 p1641 N68-21649

in methods and devices dar operator training 15 p2399 N68-25762

19 p3215 N68-31387

on and training device ombat somes 21 p3643 N68-34540

ion 23 p4094 N68-36430

Classroom training progra-jet fighter/attack aircraft con [TR-68-1]

Improvement possibilities used for Doppler surveillance [IZF-1968-7]

Flash blindness indoctris for pilots operating in nucles

[NFRA-STB-68-10]

Airborne radar and radio electronics training courses

Electrical training device for testing flight crews in cloud recognition and identification

Evaluation of collision avoidance ground training equipment which provides visual search practice during simulated cross country flight mic, and military considerations of Feasible, Commission of the Commission of TRAINING SIMULATORS
INT COCKPIT SIMULATORS
INT FLIGHT SIMULATORS
INT SPACECRAFT CABIN SIMULATORS Gemini program astronaut flight simulator train ethods and orbital flight experiences iences 05 p0646 N68-14961 Visual simulation facility for evaluation of hunar sur-[NASA-TN-D-4276] 06 p0823 N68-15858 Pilot simulator display system evaluation - effective solution and pilot performance in landing approach 06 p0779 N68-15904 y technique for computer controlled ome displays Synthetic display tech mulator and airborne di 06 p0780 N68-15907 Construction and operation of maintenance ta-mulator MTS-2 for training electronic equipment [AMRL-TR-67-140, V. 2] 09 p1313 N68-18300 Initial flight results and description of facility for simulating husar landing vehicle control [NASA-TM-X-57213] 09 p1432 N68-19030 ng, and conditioning Simulated spaceflight tra stibular apparatus of astron 14 p2204 N68-24634 Dynamic response criteria for V/STOL aircraft flight [NAVTRADEVCEN-1753-2] 15 p2387 N68-26416 es and methods for training e station self-locomotion 23 p4002 N68-36545 astronauts in lunar and space str [NASA-TM-X-60686] synthetic flight training system
[NAVTRADEVCEN-68-C-0108-1] 24 p4208 N68-38435 24 p4208 N88
TRAJECTORIES
NT ABORT TRAJECTORIES
NT ASCENT TRAJECTORIES
NT BALLISTIC TRAJECTORIES
NT BESCENT TRAJECTORIES
NT EARTH-MARS TRAJECTORIES
NT EARTH-MAGN TRAJECTORIES
NT ELECTRON TRAJECTORIES
NT HOLD TRAJECTORIES
NT HOLD TRAJECTORIES
NT MODOURSE TRAJECTORIES
NT MODOURSE TRAJECTORIES
NT MOON-EARTH TRAJECTORIES
NT MOON-EARTH TRAJECTORIES
NT RENTER TRAJECTORIES
NT ROME TRAJECTORIES
NT SPACECRAFT TRAJECTORIES Experiment groupings for Apollo Applications-A program, and trajectory requirements RN-396 Comparisons of three body traje we body trajectories for low thrust NASA-TN-D-4559] 12 ajectories with patched ust rockets 12 p1966 N66-22289 Trajectory sensitivity of optim al control system 13 p2044 N68-23562 Bolza problem of calculus of variations in terms of control coding applied to trajectories [NASA-CR-1103] 15 p2558 N68-25895 mathematical analysis of par scleronomic systems 15 p2492 N68-26379 Calculus of variations and manual man Second order theory for trajectories near lutar libra-tion point based on four body model including sum-earth, moon, and satellite [NASA-TM-X-63293] 19 p.3363 N66-31182 19 p3363 N68-31182 ropic trajectories and m cloud systems 19 p3304 NGB-31608 jectories and Computation of me flow distribution in cycl [AFCRL-67-0617]

Control of space vehicles in orbit and landing (FTD-MT-24-369-67) 20 p3394 Neb-32377

Surveyor 1 and 2 trajectories determined from

21 p3771 N68-34318 literature survey to determine de along trajectories of small

23 p4092 N68-36191

[NASA-CR-1004]

(NASA-CR-96719)

Micrometeorological litrobable surface winds

al programming of thrust magnitude and in gravitational field direction in gravitation (FTD-HT-23-533-67) 23 p4169 N68-36665 Trajectories providing error analysis of isostropic late, and giving details of digital analog elimitation computer program BNWL-441 23 p4038 N68-37125 23 p4058 N68-37125 Technique for determining climatology of high attitude balloon trajectories, and bivariate analysis method for solving recovery zone problems (ESD-TM-6) 23 p4697 N68-37376 TRAJECTORY ANALYSIS etary flyby and ass NASA-TM-X-63029 02 p0264 N68-11151 Error model for Doppler range rate and phase mode ted range tracking system for which data weightin actors can be obtained for use in space vehicle trajec INASA-TN-D-4267] 02 p0193 N68-11513 Long range trajectory predict [CONF-670931-1] tion and construction 02 p0233 N68-11609 Double precision digital of puting parameters and init heliocentric and planetocer tal computer program for com-initial conditions of matched centric phases of interplaneta-[NASA-CR-86009, V. 2, PT. 8] 02 p0270 N68-11848 ing jet trajectories for 04 p0432 N68-12947 Radar tracking for mi [DLR-MITT.-67-09] le trajectory analysis 04 n0479 N68-13098 04 p0503 N68-13602 re and escape aspects of EWR-SB-17-67) 06 p0910 N68-15559 Techniques for orithms used in data 06 p0912 N68-15706 processing spacecraft traj tory analysis of Saturn mission 07 p1085 N68-16440 Six degree of freedom 1B for Apollo-Sature 204 [NASA-CR-92837] ry analysis 07 p1079 N68-16537 Moon to earth reti [NASA-CR-92716] Saturn S-4B restart a operational flight trajer integration [NASA-CR-92805] minion launch vehicle AS-206 vehicle systems 07 p1081 N68-16793 h vehicle operatio Apollo Sature-207 la trajectory dispersion an [NASA-CR-92803] 07 p1083 N68-17180 FORTRAN 4 program estimating recentry traject [TN-1967-48] ing, analyzing, and 97 p1083 N68-17188 Mathematical model positive static stability NASA-TM-X-52396] et trajectories, drug, and 06 p1242 N68-18117 eats common to manned min-ts for Mercury, Venna, Murs, servide Cores and Vests 99 p1432 N68-18827 NASA-CR-731891 shock wave in cal high speed meteor 00 p1328 Nan-18 NASA-TN-0-4325] 09 p1434 N68-19101 Trajectory and of quecestalt equip nents of Voyager M NASA-CR-93354) 9 p1435 N48-19153 Trajectory calc minghty majorito purchases manipula. nd inertial platform 09 p1426 Nat-19316 ital trajectories in a NASA-CR-61616) 0 p1427 NAS-19376 rejectory and published NASA-TM-X-43149] 10 plest Nes-20036 Maxima-minima theory, calculus of variations for our Contract of Contract

10 p1393 N68-20094

orithm for generating low variable thrust interury trajectory data for minion analysis of electripulsion systems

(NASA-TN-D-4431) 11 p1782 N68-21228 s and trajectory analyses for 11 p1784 N68-21478 ted heating loads and critical ng rates for Voyager entry cap-[NASA-CR-66580] 11 p1789 N68-21743 hesis of flight trajectories around moon [NASA-CR-94237] 12 p1965 N68-21947 Structural design, sys mests, entry probe conf tories for flyby/entry p [NASA-CR-94406] 12 p1969 N68-22994 n for OGO data processing, magnetic field analysis 13 p2149 N68-23150 Computer progr trajectory analysis, s [APCRL-68-0046] ic capture orbits a d Mars and Venus for NASA-TM-X-61091] 13 p2149 N68-23361 ty of light observability for encecraft trajectory es [NASA-TM-X-61090] 13 p2150 N68-23585 Motion theory for mobile in central gravitational field with tangential thrust applied to ballistic at-DLR-FB-68-121 14 p2347 N68-25155 Calculation of traj of atomized drops in wet (NASA-CR-94708) 14 a2338 N68-25418 15 p2559 N68-25938 Computer analy (BCOM-5 77) 15 p2497 N68-26576 Rotation of orbital pla ne of satellite - math 16 p2754 N68-27029 Data reduction pro and luminosity data fr (NASA-CR-95188) es for obtaining trajectory 6 p2769 N68-27890 Research projects on a aerospace systems analyses [NASA-CR-95806] or flight trajectory and 18 p3163 N68-29949 hn digitizer for analyzing spark chamber film 18 µ3079 N68-30749 Discrete levels of m beginning height and lu-[NASA-CR-96295] 28 p3586 N68-32720 trajectories of lifting (NASA-TT-F-11907) 20 p3593 N68-32745 aneuver of Mariner 5 20 p3594 N64-33060 [NASA-CR-96382] icity effects on unmice mode and o [NASA-TN-X-61142] 20 p3589 N68-33091 Hodograph of two backs NASA-TM-X-43307) a utilized to develop 20 p3590 N64-33202 21 p3659 N68-34179 is of rising Regge trajectories (TIM/66/18) 22 g3927 N48-35189 (ETV-TM-64-86-TM-89) 22 p3964 N68-36002 d to aid prinction of descent 23 p4164 N68-36077 Eachs ach dring orbital equations AFETR TRALE 23 p4167 N68-36443 Spacecraft guidan ctory analysis, and 23 p4169 N66-36785 lation trajectory approximations to clime for second order differential equa-ASACE PINI 24 p4276 N66-37733 1510-01/11 24 p4505 NAS-18202

TRAJECTORY CONTROL Quantimearization metho method applied to optimal control ns - reentry trajectories 02 p0193 N68-11870 mications, stabilization instrumentation, and icutions, stabilization trol elements for automatic control amon of space vehicle flight trajectories 03 p0330 N68-12003 Coast phase control system for reducing trajectory ispersion and shaping trajectories of Nike-Apache ounding rocket vehicle 04 p0583 N68-13587 Modified control logic rocedure to determine error offer of reentry vehicle gic with random-number error effects on range controller of reentry vehic INASA-TN-D-43171 05 p0687 N68-14732 Quasi-optimal control technique for orbital injection NASA-CR-61480) 06 p0870 N68-15331 Transformation analysis for control synthesis of spinning aerospace vehicle [RS-26-O] 07 p0976 N68-16149 sion trajectories of AS-204 07 p1077 N68-16174 S-1B stage steering program and iterative guidance node presettings for mission AS-206A and associated sunch vehicle operational trajectory and performance [NASA-CR-93293] 08 p1198 N68-17381 fonlinear optimal attitude control of planet pointing ce vehicles, and optimal control of satellite trajecto-08 p1240 N68-17884 [NASA-CR-93250] luman response analysis in combined trajectory trol task, system-failures task, and motor response [NASA-TN-D-4356] 08 p1136 N68-18014 Pericynthion altitude of selenocentric orbits deter-sined from angular rate of line of sight with respect to rominant lunar surface features along ballistic trajec-[NASA-TM-X-1508] 10 p1590 N68-19622 Guidance of third stage and injection into orbit of ELDO satellite 12 p1902 N68-22036 um fuel transfers between coplanar and non-15 p2560 N68-26394 ramming and optimal trajectories for onal processes 24 p4241 N68-38371 TRAJECTORY MEASUREMENT Computer programs for evaluation of te indezvous radar tracking data of orbiting sociale and lunar module landing site determ ting con module and lunar me (NASA-CR-92124) g site determination 13 p2031 N68-24311 Computer program for e of geodetic coordinates of a [APCRL-68-0088] tion and error analysis te trajectory 16 p2650 N68-26970 rmining spacecraft orbit from optimal trajectory rement parameters 23 p4165 N68-36142 TRAJECTORY OPTIMIZATION Light pressure effect on or vehicle interorbital flig (NASA-TM-X-60601) 01 p0134 N68-10285 effect on optimization of orbital integration by m [NASA-TM-X-63027] 02 p0234 N68-11110 **Modified Newton meth** ctory optimization I field of variable main point in gravita (FTD-HT-67-447) 02 p0228 N68-11314 Method for obtaining bital rendezvous and ap-coplanar, circle-to-circle (NASA-CR-90536) nal multiple impulse or-tions to specific case of 02 p0269 N68-11840 Optimization of a orbidal transfers (ONERA-TP-518) 03 p0415 N68-12354 Simulation of linearized of ELDO launch vehicle injecti (RAE-TR-46398) n guidance law for 04 p0533 N68-13081 Optimization of cods between fixed orbits 04 p0575 N68-13336

ablation parameters of alloys 04 p0595 N68-13360

ive solution to aircraft

04 p0437 N68-13842

Trajectory optimization

SUBJECT INDEX Two body problem for satellite guidance, flight sechanics, and trajectory optimization analyses 05 p0735 N68-14089 [NASA-CR-1002] Trajectory optimization calculations for interplane-tary space flight missions with electric propulsion [FM-386-O] 05 p0731 N68-14136 Numerical methods of developing control functions r optimization of flight trajectories by iterative appli-(NASA-TT-F-11459) 05 p0736 N68-14261 Gemini reentry guidance me operational capabilities of cont olled reentry 05 p0741 N68-14953 Guidance, flight mech and trajectory optimization - calculus of variations and modern applications [NASA-CR-1003] 06 p0908 N68-15193 Coordinate measuring system for flight control, and [NASA-CR-1000] 06 p0914 N68-16103 nilton-Jacobi theory on calculus of variations applied to trajectory of NASA-CR-93067 07 p1080 N68-16585 Mathematical form n of guidance equations and NASA-CR-10101 07 p1083 N68-17215 Optimum three din reentry angle from circu [TR-0158/3520-60/-1] al deorbit for specific 08 p1238 N68-17672 Trajectory optimization puter program for Scout la [NASA-CR-66515] n and linearized pitch com-aunch vehicle 08 p1243 N68-18185 lysis computer program by iterative techniques 09 p1423 N68-18989 Quasi-optimal trajectory a for optimal spacecraft guidas n for Mars and Venus flights by manned spacecra [NASA-CR-66560] 09 p1425 N68-19239 Three numerical procedure res for Mayrer classical and ctory optimization 09 p1426 N68-19315 non-classical proble [NASA-CR-1012] ctory data for Jupiter, Saturn, num energy tra [NASA-CR-93783] 10 p1591 N68-19907 General perturbations theory applications to succeraft guidance, flight mechanics, and trajectory [NASA-CR-1008] 10 p1597 N68-20450 dission constraints nch, rendezvous, sp and trajectory interfaces for tial, deorbit, and entry phases [NASA-CR-1015] 10 p1597 N68-20468 Dynamic programming and multistage decision rocesses in guidance, flight mechanics, and trajectory [NASA-CR-1009] 11 p1781 N68-21077 Pontryagin maximum tions, and dynamic techniques applied to principle, calculus of varia-programming optimization trajectory and guidance iques app 11 p1782 N68-21231 NASA-CR-10141 Guidance, flight mechanics, and trajectory optimiza-INASA-CR-10041 11 p1785 N68-21685 Gravity assist opt technique for variety of (NASA-TM-X-63179) 12 p1969 N68-22922 Optimum control calcula aircraft trajectories [NASA-TT-F-11636] ns for vertical takeoff 13 p1991 N68-23514 Computerized optimizati propulation systems for interp BMWF-FB-W-48-14) n of nuclear electric metary flight 14 p2537 N68-24688 Incorporating quadratic ptimization problems as m nsitivity terms in linear is of minimizing trajecto-(RE-320J) 14 p2232 N68-24998 Effects of time, freq d tracking station location errors on accuracy of to [NASA-TN-D-4507] ory analysis 14 p2347 N68-25271 Logic and mather vehicle trajectory opt [NASA-CR-61223] del for Saturn launch 15 p2557 N68-25812 Relativistic optimal rucket trajectories for interstel-15 p2559 N68-25938 techniques for solving (NASA-CR-88301) 15 p2559 N68-26107 linear changes in vicinity of optimum traject DIASA-CR-80383 j 16 p2634 N68-27403

SUB

IN

opi

syl int [N

el

17

le u

TR

B

-

-

X

the

20

36

51 of

53

n

19

Perturbation method of or tories on hybrid and digital o [NASA-TM-X-59216] 16 p2757 N68-27417 nciple applied to trajectory idance method 16 p2715 N68-27764 etary gravitation teness used for parking orbit alignment in Mai [NASA-TN-D-4657] 17 p2966 N68-28408 ints on extreme rocket ization analysis 17 p2969 N68-28843 Existence of conjugate flight paths in trajectory op [NASA-CR-95487] Gradient techni applied to satellite [RAE-TR-67263] naiques for optimizing control system ite reentry problem 3] 18 p3168 N68-29398 on for coplanar rendezvous with orbiting satellite 18 p3161 N68-29674 Algorithm for iterative solution value problems for optimal or on of two point bounds-18 p3051 N68-30010 Minimum fuel guidance for time-open rendezvous, orbit transfer, and orbit transfer with tangential nominal impulses nominal impulses [NASA-CR-86073] 18 p3165 N68-30222 Computer program for trajectory optimization and sylond maximization in multistage launch vehicles (ASA-TN-D-4729) 19 p3368 N68-31989 NASA-TN-D-4729] Computer programs for system optimization problems ns for solving trajectory and roblems of electrically propelled er system exploration 22 p3962 N68-35685 interplanetary space [NASA-CR-73254] Optimizing propulsion or erplanetary spacecraft ns and trajectories of in-rical analyses and computer programs [NASA-CR-73255] 22 p3963 N68-35812 ional field of variable ngine, energy accumu-Optimum motion in gravi lator, and limited exh [FTD-HT-67-324] 23 p4165 N68-36218 Trajectory sensit stimal control system of algorithm for solving two 23 p4037 N68-36451 sum fuel guidance from hyperbolic 23 p4170 N68-36787 Primer vectors and outimus -impulse trajectories 23 p4170 N68-36790 um characteristic velocity transfers between (ONERA-P-120) 23 p4173 N68-37332 Trajectory optimization of terminal phase for inter-ontinental ballistic missile in presence of interceptor 24 p4340 N68-37578 Weierstrass functions and Hamilton-Jacobi equation applied to trajectory optimization and optimum transfer orbits 24 p4301 N68-37803 Trajectory optimization problems in mechanics of thrust propulsion for solar sail and power limited sace flights 24 p4302 N68-37806 TRANSCEIVERS
U TRANSMITTER RECEIVERS

BANSCENDENTAL FUNCTIONS
NT EXPONENTIAL FUNCTIONS
NT LOGARTHMS
NT PERIODIC FUNCTIONS
NT TANGENTS
NT TRIGONOMETRIC FUNCTIONS Boundary condition solution and transcendental approximation for transient heat conduction problem [NASA-CR-935] 02 p0227 N68-11109 Numerical table of Lommel functions with two imaginary arguments [NASA-CR-91729] 05 p0684 N68-14501 Approximations to several transcendental functions in universal form of two body problem [NASA-TN-D-4643] 17 p2906 N68-29407 Laplace transformation for solving boundary value roblems, and roots of transcendental function 19 p3301 N68-31707 TRANSPOUATORIAL PROPAGATION Generalized iterative method of solving systems of onlinear algebraic and transcendental equations 23 p4087 N68-36152

TRANSCONTINENTAL SYSTEMS NASA on-line automatic data switching system for worldwide voice, data, and teletype communications (NASA-TM-X-63056) 04 p0483 N68-13425 Feasibility of single be passenger transport TUB-IR-4/1967) er rocket vehicle for global 15 p2385 N68-25894

SOUCERS
DIGITAL TRANSDUCERS
ELECTROACOUSTIC TRANSDUCERS
ELECTRONIC TRANSDUCERS
HYDROPHONES
IMAGE TRANSDUCERS
MICROPHONES
MODE TRANSPORMERS
PIEZOELECTRIC GAGES
PIEZOELECTRIC TRANSDUCERS
PRESSURE SENSORS
QUARTZ TRANSDUCERS
SOUND TRANSDUCERS
TORQUEES NT TORQUERS
NT ULTRASONIC WAVE TRANSDUCERS ucers with accepting states as Pushdown trans sociated with linear [TM-738/032/00] 01 p0034 N68-10430 Abstract family of language properties common to languages is introduced along w ges as sets of words satisfy many types of formal lan with abstract families of ac-Ceptors and transd [TM-738/031/001 01 p0034 N68-10459 Modified electro anaducer for acou n viscoelastic solida 02 p0257 N68-11123 n for calibrating vibration [NSRDC-2454] 02 p0219 N68-11215

Autodyne transduce resonance studies of solid [FTD-MT-66-69] 02 p0211 N68-11268 and detectors to mea Development of tra ire reactor character 05 p0664 N68-14895 ic transducers in measur-nge in reflection of shock

nuclear magnetic

07 p1098 N68-16863 able laser heterodyn rement of structural vi mechanical transduce e system for broadband brations and calibration of NASA-CR-731371

07 p1000 N68-17052 effects on strain gage pressure transducers 08 p1176 N68-17392 (TID-241441 Monbauer effect theo teristics in Monsbauer exp [NASA-CR-75658] nd absorption charac-its on transducers 09 p1410 N68-19132

ters and gyroscopes 13 p2070 N68-24150 Doppler shift flown ring ocean cur-

[MPL-U-48/67] 13 p2072 N68-24275 rig with high sensitivity [AID-METRO/12] 14 p2256 N68-24903 rating motion frequencies INASA-TM-X-603041 14 p2259 N68-25344

Noncontacting displand applications to vibr [NASA-TM-X-59115] suring technique 16 p2662 N68-27649 Near field array tool applied to sonar tram-

INRL-6734] 18 p3033 N68-29722 19 p3281 N68-31958

Investigations of TE surranducer for millimeter (ECOM-2975) le circular waveguide 20 p3448 N68-32404 nant systems for dy ik transducer eval [NASA-CR-72435] 21 p3688 N68-33640

for recoverable soundir Transducer system of rocket with paraglider BMWF-FB-W-68-42} 22 p3878 N68-35650

Design of fluid coupled t lucer system to amp 24 p4299 N68-37336

Propagation characteristics of equatorial ionosphere measured between magnetically conjugate points a 08 p1173 N69-17904

RANSFER U TRANSFERRING TRANSFER FUNCTIONS

lays over the 02 p0191 N48-11200 P-30031

TRANSFER FUNCTIONS Fortran 4 program for calculating multigroup elas (NASA-CR-91134) 03 p0387 N68-12245 mctions with constant swave networks 03 p0332 N68-12449 d class of tr delay at all frequencies for micr (BADC-TB-67-384) Zero power, power feedback, and total reactor (LA-3734) 03 p0377 N64-12597 Two Fortran 4 progr tudinal and lateral di ion and dynamic c (SEG-TR-66-52) 04 p0441 N68-13125 her order derivatives of sh z and A-numbers 05 p0683 N68-14077 Reactor zero power to r function measured with oscillator rods [APDA-NTS-11] 05 p0692 N68-14200 Transfer matrix for dynaliate subjector to load ic analysis on elastic this transfer functions for a tained with digital company [P-3672] 06 p0797 No Computer program in terms of partial frui [RAE-TR-67234] 06 p0790 N68-159 or functions in design or drive system On p0764 NGC-19931 e of UTR-100 reactor mea with reactivity out! [SRRC-19/67] 07 p1026 N68-14222

NASA-CR-929781 07 p0970 N68-16704 (RAE-TR-67246) 18 p1194 N68-1802

Algorithm for co of transfer function [AFOSR-48-0234] 9 p1317 No. 1 09 p1320 N68-19392 Active lattice of Ri transfer functions of cu (AFCRL-47-0562) 0 pi300 Nas-19979 (NASA-CR-94129) 11 p1700 Nos-2179

12 p1851 NSS-22055 A county bear from concreting Functions in Right and de-[NASA-TM-X-61071] 13 p2003 NAA-23255 [REPT-47-C-311] NASA IN PART CEA-R-33271

10 p3101 Nap.207

Use of

Mathe

Fluxfooth res

Wow

CEA-

Deter

Passi

tion, an cations [JPRS-

Tram

Desig

[NASA

Tran

NT P

SNA

on rag

IDO-

Scra nuclea alundo [APD/

[LA-D

Tru

[NAL

Training, an

Con for ca

Ulbuti

TUCR

444

NAS

Cor

Invariance of composite pulse program control a tability of discrete composistor described by pa 18 p3050 N68-29829 Transfer functions, digital con quations of state in studying dyn e regulated synchronous machin omputer program, and ynamic stability of volt-18 p3051 N64-30034 Analysis and synthesis of multi-layer RC distributed [CU-172-68-ONR-266-PHYS.] 18 p3053 N68-30513 Development of RC single two-port synth-technique to realize open-circuit voltage trainer fu-tion of lumped, linear, finite, passive, and bilateral n 19 p3254 N68-30915 Static, oscillator, and tramier reactors for reactivity and kineti [KFK-649] nt tests on fast ceramic 19 p3310 N64-31249 er function for quality con-20 p3481 N68-33395 n of transfer functions itrary excitations 20 p3606 N68-33523 for structures by con (NASA-CR-963181 afer function app divity analysis by digital computers [NASA-TM-X-61193] 21 p3674 N68-34423 root mean square error de-d transfer functions 22 p3850 N68-34887 thematical models a in computer sim functions for approxi-quiar pulse 23 p4031 N68-36447 Low order ra TN-1968-21] idulation transfer ad for dependen-lation layer n of photographic films ical properties and struc-23 p4063 N68-36977 on transfer reac-ICEA-R-3574] 23 p4129 N68-37069 fer function of lie on of transmittee diem system b [CEA-R-3508] 23 p4038 N68-37131 TRANSFER OF TRAINING room training program on visual recognition of er/strack aircraft configurations TR-68-1) 11 p1641 N68-21649 try technology to solve civilian public prob 17 p2989 N68-28809 Impact of NASA p n aviation and aeronau [NASA-CR-96810] 21 p3625 N68-34314 TRANSFER GREITS

NT INTERPLANETARY TRANSFER ORBITS Method for obt 02 p0269 N68-11840 dies of opti (ONERA-TP-515) 03 p0414 N68-12131 Optimization of a orbital transfers (ONERA-TT-518) 03 p0415 N68-12354 Error analysis during dums of BAP maclife NASA-TM-X-43024 and lunar parking orbit 04 p0571 N64-12888 Instage market ong crisis and toward from (ELDO/SP/67/18) fer between parking 04 p0565 N68-13549 rder partial differenti udas transfers betwee ites-Jacobi liss in applied to op 06 p0882 N68-16040 of man and energy ex-eorbital transfer 08 p1242 N68-18169 RAE TR 472671 Two body oquality n for calculating partial innetary midcourse cor-ce system injection er-[NASA-TN-D-4518] 10 p1595 N68-20368 er between planet ap-[NASA-TH-D-4534] 12 p1960 N68-22096 erical analysis nal transfer bets MASA-TT-F-11590] 12 p1966 N68-22247

Minimum fuel transfers between coplanar and non-oplanar orbits 15 p2560 N68-26394 Rotation of orbital plan llite - mathematical approach (ORA-68-0003) 16 p2754 N68-27029 Computing optimal payload for orbit transfer from ear earth parking orbit to synchronous orbit by nuclear electric pr (DLR-FB-67-86) 16 p2770 N68-28279 Optimal rend stical orbits fers between close el-(ONERA-P-121) 17 p2967 N68-28667 lysis of polar orbits for Inertial navig 17 p2912 N68-29384 editions for optimal contan gravitational field 18 p3161 N68-29696 Orbital transfer from low altationary orbits using micr RAE-TR-672491 18 p3162 N68-29743 Computer program for calcula fuel mass required during transforbit to geostationary orbit using dating transfer time and afer from low equatorial sing electric propulsion [RAE-TR-68029, PT. 3] 18 p3163 N68-29867 (RAE-TR-68008) 18 p3163 N68-29883 Variations of limit ratio for restricted th [NASA-CR-95832] otic orbits with mass 18 p3104 N68-30094 Minimum fuel guidance orbit transfer, and orbit [NASA-CR-86073] 18 p3165 N68-30222 Calculus of variations results on optimal transfers [RAE-LIB-TRANS-1281] 19 p3363 N68-31064 Direct and planetary s for transfer orbit corrections by means of a [NASA-TT-F-11827] 19 p3368 N68-31962 Manual navigation a bits for lunar landings (NASA-TN-D-4756) d for evaluating transfer or-20 p3529 N68-33271 Analysis of launch w representative Mars min (NASA-TM-X-1651) from circular orbits for 20 p3592 N68-33371 namics problems on in-strajectories 22 p3963 N68-35902 Literature survey tercept, transfer, and [NASA-CR-61999] ider and prees for systems analyses 22 p3967 N68-35983 (NASA-CR-66678-4) Technique for dete hunar transfer orbits [NASA-TN-D-4811] e pericynthion altitude of 23 p4167 N68-36459 Solution for m to circular orbit nce from hyperbolic 23 p4170 N68-36787 synchronous satellites 23 p4172 N68-37059 (ELDO-TM-110) Minimum chara elliptic orbits (ONERA-P-120) city transfers between 23 p4173 N68-37332 sital rocket transfer with Optimal two d 24 p4340 N68-37567 Iton-Jacobi equa-tion and optim 24 p4301 N68-37803 altitude, low eccentricity thrust, cotangent transfer (GA/MECH/68-3) 24 p4342 N68-37919 Rapidly converging it thed for solving mul-04 p0536 N68-12843 accounting for bear accolorator RF s UL-12418] 17 p2922 Net-29315 for transferring fission LA-39621

21 p3694 N68-34634

TRANSFORMATION TENSORS Modified point tre self vibration of sect [FTD-HT-67-244] (AD-662231 (REPT.-226) Analog comp [FTD-HT-23-832-67] Integration of Boit (EP-RR-15) ADP-46] (REPT.-I) differential equation [NASA-CR-61218] ferential equations (NASA-CR-61217) Nonlinear repr [JINR-P2-3646] value problems co (MRC-TSR-829)

TRANSFORMATIONS [MATHEMATICS]
NT COORDINATE TRANSFORMATIONS
NT SCHWARZ-CHRISTOFFEL TRANSFORMATION [R-386] sional optimal control 01 p0041 N68-10303 method for analysis of nlinear pulse systems 02 p0192 N68-11411 TH-68/ NT CO 06 p0860 N68-15236 Opera with sup [CEA-R mations applicable to addition and subtrac-tions in parallel digital computers using number representations in arithmetic units 6] 06 p0804 N68-15244 ions for automatic [NASA 06 p0806 N68-15263 Symp Josephs tion as e parallelium realizable 06 p0862 N68-15431 (AD-66 ng conformal trans 06 p0811 N68-15678 collision integrals 07 p1049 N68-16726 08 p1249 N68-17522 iterative and transfe ns for eigenvalue 08 p1249 N68-17523 Matrix transformation method for solving eigenvalue oblems 08 p1250 N68-17524 Methods of eliminating Hamiltonian by means of cr [NASA-TN-D-4399] ig short period terms from canonical transformation 08 p1193 N68-17532 Computing inverse diffe formation matrix T minus 1 [NAA-SR-MEMO-12489] 09 p1394 N68-19108 Least squares metho curve fitting, data amo determined sets of equal [NASA-TM-X-63127] ry and application to and solution of over-TRANSP U TR 09 p1363 N68-19109 TRANSI 09 p1364 N68-19130 09 p1321 N68-19305 necherel transform on nilpotent part of Lie algebra ome applications to representation theory 10 p1546 N68-19698 ques for geophysical terns occur 11 p1694 N68-21749 d for correlation function ignals into binary signals 12 p1852 N68-22091 groups for transforming p initial value problems by 13 p2092 N68-23314 r solution of partial dif-13 p2094 N68-23480 Time varying vector valued frequency transform for rapid identification of time varying linear dynamic systems 13 p2044 N68-23493 Triangulations of fixed po 13 p2094 N68-23675 SU/2/ group 13 p2122 N68-24239 of zero roots of power se-roomisis from transforma-e and annulus of conver-14 p2282 N68-25616 ial analysis for hermonic boundary staining reentry corners | 5 p2492 N68-26383

oobi matrix method for

16 p2692 N68-26969

G LOADS

02 p0196 N68-21900

15 p2566 N68-25897

ums under

SHOCK LOADS

Dynamic characterist ransient conditions

Pneumatic hold-down cylin launcher modified to reduce tra [NASA-TM-X-52352]

EX

03

of

e-

16

3

als of pressure-temperature

03 p0379 N68-12677

04 p0440 N68-13037

Mathematical mor randoms in reactor of f-coolant

WL-SA-844]

Finite transform solution of ele amped, and arbitrarily loaded bear reduce transient vibration (NOLTR-67-60) 22 p3968 N68-34865 15 p2570 N48-26444 e in parameter op-Use of companion transformization and adaptive contr 22 p3851 N68-35273 [R-386] 16 p2777 N69-27431 ms to ordinary difincidence on response sient leads 20 p3604 N62-33168 23 p4090 N68-36789 (NASA-CR-[176] Mathematical investigation massive Yang-Mills fields [TH-68/28] on of perturbation theory of 23 p4124 N68-36929 TRANSFORMERS NT COUPLING CIRCUITS NT MODE TRANSFORMERS TRANSIENT OSCILLATIONS Operational analysis on direct current flux pump ith superconducting transformer Macrovortices and trans (MIT-3700-5) [CEA-R-3249] 03 p0385 N68-12764 Phase demodulation of resolver output signals, and corracy of demodulator used for design of solver/digital convertor y of top on fixed horizon Transient mot [NASA-CR-91503] 04 p0480 N68-13777 Stability problems distributions conference Symposium on superconducting devices dealing with losephson junctions, current transformers, amplifica-tion and interference devices, and measurement NASA-CR-932431 AD-6618481 05 p0701 N68-14447 Fluxflow and direct current transformers that are both resistive and superconductive Diffraction of tre 05 p0701 N68-14467 Wound superconducto functional analysis of con [CEA-R-3242] ctor transformer concept, and ontinuous current modes 05 p0703 N68-14822 mination of magnetic properties of sheet trans-teels in weak magnetic fields 06 p0878 N68-15104 [NASA-TN-D-4503] Passive relaying, ground stations for television recep-tion, and feedback transformers for satellite communi-Oscillation mechanism population inversion in ca [NASA-TT-F-11884] (JPRS-44023) 06 p0801 N68-15976 naformer with feedback for communication satel-Transient pulse propagation through linearly scoolastic medium formulated as Volterra integra Tru 06 p0802 N68-15979 [AROD-4547-39-E] Design and performance of prototype direct current converter for space vehicle television transmitter [NASA-CR-61737] 12 p1850 N68-22732 TRANSIENT PRESSUR sthematical models ients in reactor cost Transformer to adapt vertical antenna to a 50 ohm (RNWL-SA-844) 21 p3659 N68-34174 Film flow model appl for predicting burnout to [AEEW-R-542] at flow com TRANSFORMATIONS (MATHEMATICS) TRANSIENT HEATING Transient pressure field reflections from multilayere [USL-960] NT PULSE HEATING NT SHOCK HEATING SNAPTRAN program to provide nuclear safety data in rapid transient behavior of zirconium-hydrideon rapid tran uranium fuels (IDO-17204) (AEEW-R-553) 03 p0372 N68-12202 Scram tests to determine transient characteristics of sclear reactor and associated heat transport system at associated. (EUR-3927.E) [APDA-NTS-15] 16 p2709 N68-28203 TRANSIENT REACTOR TEST FACILITY cteristics for transient Heat flux and flo Hybrid computer program culculations on transient re-fast reactor safety experime (ANL-7374) modes of heat pipe startup [LA-DC-9026] 17 p2983 N68-28359 Transient heat transfer due to une teady flow in thin INAL-TR-1441 18 p3190 N68-30762 Behavior of Zircaloy 2 cla uranium quide fuel rode in tr (BNWL-SA-1674) Transient heat transfer by combined conduction and distion through plane layer of absorbing, noncenter-g, and nonemitting stationary gray modium (NL-7407) 22 p3979 N68-35585 ENT RESPO ing, and nonemi Computer program and implicit difference method for calculating transient microscopic temperature distribution in matrix heel elements [2] p.3911 N68-35740 Analytical study of cats on reaction chambers for Computer program for transient and steady state temperature distributions in multidimensional systems [UCRL-14754, REV. 1] (AFCRL-47-0383) 22 p3981 N68-35905 RANSIENT LOADS NT BLAST LOADS NT GUST LOADS NT DMPACT LOADS NT LANDING LOADS (APCRL-47-0384)

Theory of complet is special approximation of matual construction

HARA-CR-910421

(TR-536)

(KFK-578) 05 p0702 N68-14749 nics of thin-walled, any moving pressure Short time artic cylind tedical impact of two 24 p4347 N64-37599 TR-411 05 #0751 1468-14932 08 p1208 N68-17510 Transient response of a nt stability in hard super 01 p0126 N68-10883 09 p1384 N68-19278 06 p0879 N68-15285 10 p1536 N68-19922 08 p1248 N68-17507 dynamic response of scountic medium 13 p.2157 N68-23090 eds for approximation and plates and shells in 08 p1173 N68-18047 tic waves by spherical (ECOM-2917) 13 p2066 N68-23/21 09 p1381 N68-18479 equation of austion for armonic and discover 10 p1519 N68-19616 ARC-RAM-MOST 14 p2184 N6E-24E16 of frequency, damping to from free oscillation Computer progra OGO-E vehicle response during Allas bonster bur-15 p2491 N68-25869 [NASA-CR-94761] 14 p2351 N68-20918 processes producing lioxide lases 20 p3494 N68-33573 Analyses and fining transient in-de-materials [NASA-CR-1060] procedure for predict-)4 p2373 NAS-25244 a of Mariner type 14 p2364 N68-25526 24 p4349 N68-38067 markets of the control of the contro S-IC reliability p present temperature ent systems during loss 14 p2365 N68-25529 03 p0379 N68-12677 response used for an alvatives of automabil 05 p0755 N68-14605 15 p2356 N68-26130 educed by sound wave quid-solid media 11 p1748 N68-21567 neur systems analysis applied to transient and in during flow and power 1050 F-2415-11 15 p2511 N68-26631 6 p2/11 N68-28320 A LINE POST ination of pressure [KAPL-P-3425] 16 p2707 1468-28130 18 p3014 N68-30196 Use of allow to repertises confi all temperature m for transient temperature test facility /TREAT/ (LA-DC-9425) 16 92710 N -Calcul 12 p1984 N68-22971 (SC-T-48-1504) 17 p2901 1968-293 thracionally compacted ant reactor 23 p4103 N68-37011 of rectanges 10 23179 348-3 realters 01 #0044 NGB-10415 19 p3374 NAS-30936 01 p0128 N68-10633 18 p3353 N48-31261 42 m4253 Neb-11306 19 p3314 N48-32126 The Park of the last 02 p0240 1468-11470 0 p3447 NGB-32315 antennes and transless had for determining and aye of long dipols allow----MACR-1175 21 p3792 MGA-33737 02 p0181 N48-11471 21 p3700 HGB-34136 03 p0331 N68-12138

Peri

(BN-5

Las stratif

zeoli (USI hard (AD

Complementary insulated gate field effect transistor 21 p3673 N68-34203 [NASA-CR-89188] [GE/EE/67\$-9] 13 p2039 N68-23341 Feedback system of [WAPD-TM-724] 21 p3675 N68-34636 Nonlinear theory of some tra oscillators Design and operation of fully transistorized icroelectronic plan position indicator - MIRAGE

ties of steady state and arrent problems 22 p3949 N68-35017 nmary information ient space charge li [EH-61696] 15 p2469 N68-26601 ese of semicon

ion fragments 22 p3949 N68-35074 (NP-TR-1651) 17 p2884 N68-28862 curring in ventilation reprocessing plant after nsient phenomena n of EUREX nuclea an explosion (RT/PROT/68/8)

22 p3827 N68-35606 ned radiation detector mintors, or batteries 18 p3078 N68-30650 Transient beha logarithmic amplific (ORNL-TM-2195) Development of tra is on transistorized using alternat [NP-17356] ting current, accu 22 p3849 N68-35843

ng propagation of free ring and transient Equations of motion formionic waves in sa sponse of ring subjected ingic circuits in integrated form [NASA-CR-66644] lial impact loads 24 p4346 N68-37511

is of electric power systems using direct method of Liag 24 p4239 N68-37668

TRANSIENTS (SURGES) TRANSISTOR AMPLIPTERS

Analysis and design of m

mediate frequer 01 p0037 N68-10263

(RADC-TR-67-124) 01 p0038 N68-10583 Digital computer technical frequency true (ECOM-024 3-F) for design of broadband

02 p0187 N68-11217 Performance evaluation for istorized amplifier

02 p0190 N68-11875 Unity short circuit current gain frequency measured to analyze large-signal RF behavior of power transistors

[ECOM-2881] 03 p0329 N68-12127 lifier for automatic con-

(RT/EL/67/12) 11 p1673 N68-21157 nperature components fiers working with sta

(REPT_899/III/E) 19 p3254 N68-32167

20 p3448 N68-32328 on transistorized ORNL-TM-2195) 22 p3849 N68-35843

norized Y ampliffers and for LRP-34/67] 23 p4032 N68-36761

plifier designs 23 p4034 N68-37378 [FTD-MT-24-118-67] Transister as operations, and (ECOM-2995) cations for reliable

24 p4235 N68-37956

TRANSISTOR CIRCUITS

(UCRL-13304) 01 p0039 N68-10718 Con stor circuits using tel-selenide for n-type a for p-type : (ECOM-02432-F) 02 p0187 N68-11113

tural and applica spects of short active 02 p0190 N68-11874

is design of tra rized azimuth super-

06 p0903 N68-15070 Analog to digital com rter for low level input signals

06 p0806 N68-15298 [FTD-HT-47-44] etz crystai oscillator using silicon (TN-186) 06 p0815 N68-15670

ary operated circuit Design, and part (FTD-HT-44-435) 08 p1180 N64-17886 cration of inverter

10 p1461 N66-20492 or for use with low

11 p1672 N68-20968

circuits for spark chamber

Soil humidity and densi meter composed of tran Mueller tube and electroni [CNEA-204] easurement by portable r circuits with Geiger 17 p2889 N68-29393

19 p3253 N68-31597 Characteristics and performance of solid state in-tegrated microwave circuit components, devices and [NASA-CR-96449]

20 p3452 N68-33329 of beryllium fluoride ized mixer circuit for 21 p3692 N68-34358 [EUR-3942.F]

Evaluation of existing ining feasibility of tra ng techniques for deter-rized counting or scales

[ORNL-TM-2214] 21 p3741 N68-34412 field effect transistor cir-ted electronic packaging ent and la

[NASA-CR-1113] 22 p3841 N68-35193 Design of transi

nalyzer 23 p4032 N68-36842 (PINSTECH/PHY-11) Development and experimental testing of high ower, high speed, pulse-type germanium p-n-p drift

23 p4033 N68-37314

TRANSISTOR LOGIC

High speed micropower mic gic circuits in integrated form icroelectronic transistor [NASA-CR-66644] 19 a3253 N68-31597

TRANSISTORS

FIELD EFFECT TRANSISTORS
JUNCTION TRANSISTORS
PHOTOTRANSISTORS

NT SILICON TRANSISTORS

Nanosecond pulse generator using avalanche [NRL-6539] 02 p0187 N68-11165

Epoxy and sil [ECOM-2879] packaging 02 p0188 N68-11252 Static and dy ince of micropower

transistor logic circuit (ECOM-2863, PT. 21 02 p0192 N68-11344 Fully transistorie and on surface be dutonium-alpha air monitor detectors and single channel

pulse height analyzers [UCRL-50228] 06 p0844 N68-15478 Transistorized electrically operated chronometer

(RAE-LIB-TRANS-1248) 07 p0996 N68-16399

thriques, low and high frequency amp (RHEL/R-133)

Fabrication of metal or ector tran [RADC-TR-67-478] 08 p1154 N68-17934

band gap emitter 10 p1506 N68-20075 (AROD-3397-22-E)

Low frequency not ductor transistors n metal oxide semicon-11 p1675 N68-21804

on techniques for, and thin film transistors 12 p1848 N68-22145 Vacuum deposition fab roporties of, evaporated s

ncies and microwi or current and collec-

13 p2040 N68-23778 Ultrasonic cleaning tech conformal coatings on print [ECOM-2894] se for removal of epoxy viring assemblies 15 p2436 N68-26317

Infrared detection of hot spot and breakdown in (ECOM-2944) 16 p2630 N68-26996

16 p2633 N68-27303 istor and tunnel diode

16 p2634 N68-27627

Thresholds and characterist rising tunnel diode and trans ircuit eristics of electric relay, com-transistor, acting as switching [FTD-MT-67-05] 17 p2862 N68-29072

its, and errors in circuits using both pentos [FTD-HT-23-946-67] 18 p3052 N68-30133

Application of high p olid state electronics to [PB-176920] 19 p3255 N68-31114 Measurement of noise factor in high frequency trans-

20 p3448 N68-32386

Analytical expressions to de fects on radiation resistance termine transistor design effects on radiation [NASA-CR-1167] 21 p3671 N68-33767

sistors using different technologies Gallium arsenide n-p-n tra technologies 21 p3667 N68-34068 crystal materials and [NASA-CR-86097]

Screen printed cad sulfide layers used as [NASA-CR-66669] 21 p3668 N68-34253

Operational reliabil mined by infrared scar [ECOM-2991] ty of RF power transistors deter-22 p3850 N68-35998

Stabilization of input transistors by extraction of pedance of channel ority charge carriers 23 p4033 N68-37315

Mathematical model with variable threshold 24 p4238 N68-37612

TRANSIT IB SATELLITE

Earlyburn cinetheodolite observations of Transit 1B satellite - October 1964 to March 1966 [ROE-STS-69] 10 p1600 N68-20306

TRANSIT SATELLITES

Bibliographic review on OGO, OSO, OAO, and [LRBA-45-64-EN] 17 p2975 N68-28462

TRANSIT TIME

Instrument errors, stellar ti-rotation effects, clock adjustme sources at Latvian Observatory me transit data, earth mts, time lag, and light Time Services Facility 05 p0739 N68-14921

Artificial star light source apparatus for determinine lag of astronomical photoelectric time trans time lag of astro

05 p0740 N68-14925

Instrument errors of astronomical photoelectric time transit device determined using oscillograph and artifi-cial star light source apparatus 05 p0665 N68-14926

Time lag of photoelectric stellar time transit device and effects of temperature, atmospheric absorption, and optical properties

05 p0740 N68-14927 Inclination of grating slits effect on accuracy of star transit observations

05 p0740 N68-14928

Recording errors effect on clock adjustment calcula-tions of photoelectric time transit device 05 p0740 N68-14929

Photon fill-time of Fabry-Perot spectrometer [UCID-15224] 07 p0999 N68-16879 Beam pulse and pri flight timing technique used

ar reactions producing neutrons 10 p1562 N68-19588 for measuring not [ORNL-P-3206] Neutron flight tru cross section mea [LA-3478, PT. 1] 21 p3742 N68-34445

Kolmogoroff backward equation for analyzing first passage time problem for linear single degree of freedom vibratory system with linear viscous damping [NASA-CR-97149] 23 p4180 No5-36331

TRANSITION

harmonic effects in even-even Importance of deformed nuclei (JINR-P4-3432) 01 p0104 N68-10372 TRANSITION FLOW

Laminar and transitional heat transfer in two dimen-onal separated flow behind sharp protruding leading sional separa edge step mo [TAE-71] 06 p0925 N68-15451

et transitions and critical currents cting surface sheath 07 p1066 N68-16497 Alternating current tre in type 2 superconducting [NYO-3029-13]

27301 diode 27627

DEX

, com-29072 in cir-30133

31114 trans-32386 design 3767

ferent 4068 d as 4253 leter-

5998 7315 7612 t 1B

306 462 921

28 da. 29 79 RR re-

rst of 12

1

ation for conical vehicles in ow regime Drag coefficient evaluation-density transitional fic [TR-0158/3240-20/-3] 08 pl107 N68-17917

Definition of location and height of roughness initiat-g transition without additional drag for supersonic flow [NASA-TT-F-11558]

08 pl 107 N68-18138 Response of pneumatic systems to step input in free a continuum flow regimes [NBS-R-439] 10 p1529 N68-19804

diffusion in porous Knudsen and transition solids over thousandfold p range 10 p1517 N68-20255

clevated pressures ob-11 p1681 N68-20623

to subsonic flow in tube different stagnation pres-

11 p1683 N68-20777

Flow breakdown elimination studies for transition speed wind tunnel tests on V/STOL aircraft [REPT.-68-1] 19 p3198 N68-31127 to turbulence in

BN-5421 19 p3340 N68-31430 Laminar, transition, and turbulent flows of stably ratified fluids over barriers [TM-55] 22 p3863 N68-35735

CADMIUM
CADMIUM ISOTOPES
CHROMIUM COBALT
COBALT ISOTOPES
COBALT 60 N N N

COPPER GOLD GOLD ISOTOPES GOLD 198 HAFNIUM IRIDIUM

BRIDIUM IRON IRON ISOTOPES IRON 57 IRON 59 MANGANESE MANGANESE ISOTOPES MERCURY [METAL] MERCURY VAPOR MOLYBDENUM NICKEL

NT MERCURY VAPOR
NT MOLVEDENUM
NT NICKEL
N NIOBIUM
NT NICKEL
N NIOBIUM ISOTOPES
NT OSMIUM
NT PLATINUM
NT REFRACTORY METALS
NT RHENIUM
NT RHODIUM ISOTOPES
NT RIFERIUM
NT RHODIUM ISOTOPES
NT SCANDIUM ISOTOPES
NT SCANDIUM ISOTOPES
NT SCANDIUM
NT SILVER
NT TANTALUM
NT TICHONETIUM
NT TICHONETIUM
NT TICHONETIUM
NT TITANUM
NT ZIRCONIUM
NT

institual compounds oxygen fuel cell cathodes 01 p0003 N68-10251 Preparation of immetals for hydrogen o (NASA-CR-89953)

lon exchange distribu of transition elements in reclite-molten sodium n [USNRDL-TR-67-104] 01 p0026 N68-10857

Electronic specific heat, magnetic susceptibility, and hardness of HCP binary transition alloys [AD-660423] 02 p0258 N68-11226 ms of solvent exchange reactions

Rates and mechanism with transition metal in (AFOSR-67-2387) 02 p0176 N68-11362 Ch. ical transport growth and preparation techniques for electrolytic of transition metal compounds

single crystals
[A. ML-TR-67-239] 83 p0404 N68-12109 transition metals for ikaline hydrogen oxygen Interstitial compounds of shodic oxygen reduction in all fuel cells [NASA-CR-92582] 06 p0793 N68-13859

ctions of silver, relative lements, and hydrogen bon at 2000 deg C 07 p0952 N68-16127 cross sections of tra [COO-1147-22]

vapors for pulsed laser 07 p1005 N68-16942

ali halide crystals, to (NRL-MR-1815) 08 pl186 N68-17660

d super transferre

10 p1567 N68-19849 es of photosynth agnetic resonance ervey of p biological interest 1 p1633 N68-20582

etak co nitrogen, phosphorus, or su [AFOSR-68-0343] 11 p1646 N68-20775 al impurities in liquid Knight shift and tru

12 p1886 N68-22099 Electronic structure of carbides and nitrides of face entered cubic transition metals of sodium chloride 12 p1886 N68-22113

Solubility of tra kaline earth metal [UCRL-50315] 12 p1838 N68-22642

ment for determining sition metals 12 p1890 N68-22643 Charge on inte (TID-24210) on phase diagrams for

Calculation of regular e titanium base binary alloys [TR-14] 13 p2081 N68-23252 ses on transition and ta-diketones 13 p2010 N68-23285 Kinetics and structural rare earth metals with chela [NYO-906-80]

Alloying behindren (AD-666993) tic properties of rure

13 p2081 N68-23363 er shift of iron dissolved in

14 p2331 N68-25039 Transition metal catalysts for polyethylene encurion of substrates

14 p2217 N68-25123 n, crystal structure trans-Bibliography for preparation port properties for transition in [ORNL-RMIC-8]

14 p2274 N68-25555 Spin fluctuation effects on properties of transition

15 p2544 N68-26804 Selected papers from and transitions acciated compounds om symposium on place forme-of titanium-nickel and other associated compour [NOLTR-68-16] 16 p2676 N68-27267

ion study of structural ricus transition metals 16 p2676 N68-27268 Single crystal X ray diffract milarity among hafnium and v

Dependence of transport properties of transition tetal alloys and compounds on electron number 16 p2742 N68-27276 on polarographic half d spectral behavior of

16 p2617 N68-28325 mic structure of

17 p2836 N68-28407 emical properties of some staining sulfur liquoch 17 p2836 N68-28423

17 p2836 N68-28443 Oxygen and nitrogen de bides, uranium nitrides, an (JUL-517-RW) nation in uranium car-ic transition metals 17 p2099 N68-28552 Chemisorption a fraction /LEED/ to [NYO-3830-5]

17 p2847 N68-29527 e thermal expansion

oup 48 and Group 58 18 p3095 N68-30720 Crystal and m 19 p3220 N68-30899

sicity of metals

20 p3428 N68-32897 of apactral reflectance and transition metals at infrared (RE-330) 20 p3572 N68-32991

ition metal cur-20 n3574 N68-33367

complexes of chromous, a, acid hydrolysis of applexes, and kinetics of

21 p3649 N68-33

21 p3651 N68-34183

23 p4146 N68-36063

23 p4004 N68-36 calculated for various sition metal complex in

24 p4212 N68-37618

TRANSITION POINTS

02 p0283 N68-11462

-[NASA-CR-91277] ies of hydro

(IS-T-194) 05 p0672 N68-13994

ect of filler contest on WRE-TN-CPD-113) OR p1189 N68-17312

of critical point 09 p1383 N68-19122

at flow for fir 16 p2644 N68-27462

ficial tension, str

16 p2798 N68-28326

17 p2984 N68-28519

reenductors 17 p2957 NGB-20693

18 p3148 M68-2951

18 p3118 N68

19 p3346 N of all all the series

042 M68-11937

Tra LA-D Tre (SRD Con ion cr

SUBJE

Con [NAS TRANS Tra for he [NAS TRANS Tra

> Cal bility [RD-TRANS Pol and p in utr (DES

Fac and n and tr [RAE

U reflex [DES Ey RE TRANS tions com: [NA

Ve D RD

All

Tee techn system [RD-

Tn At radia (U-4

> Sy [NA

> (EL

R dese mitte [EL

Rotation translation coupling effect in rare gas crystals containing molecular impurities [AFCRL-67-0641] 08 p1142 N68-17926

06 p0886 N68-15952

06 p0887 N68-15954

10 p1518 N68-20405

ies for visible lines of

11 p1658 N68-21839

12 p1898 N68-22241

in odd mass rare earth fiffused potential 12 p1930 N68-22588

ompanying capture of

14 p2304 N68-24642

15 p2522 N68-26556

15 p2420 N68-26820

16 p2727 N68-28005

17 p2954 N68-28489

ents for absolute elec-ultraviolet molecular

n prob

21 p3654 N68-34706

22 p3931 N68-35598

23 p4125 N68-36969

23 p4127 N68-37003

24 p4215 N68-37785

14 p2255 N68-24655

23 p4168 N68-36494

08 pl151 N68-17783

07 p0995 N68-16251

ons and beta decay

dies for electron states and

te forces and collective states in ffects on transition probability 10 p1562 N68-19586

Solution of equations of self consistent field for omic ground and excited states utilizing BESM-2M

Decision rules in Markovian decision processes with completely known transition probabilities 08 p1195 N68-18127

Fe and Cr oscillator strength and statistical population factors measured by absorption technique froshock heated gas

Ratio of E2 transition probabilities for de-excitation to ground state levels of beta and gamma rotational hands of rare earth elements [AD-664799] 11 p1751 N68-20811

Elementary excitation of electron states in even-even nuclei and BCS theory
[IPNO/TH-114] 15 p2522 N68-26556

Transition probabilities formulation to explain per-turbation effects in elastic differential scattering cross

Fermi surface of tin from high field thermal magne-presistivity and oscillations in thermoelectric elec-omotive force

Coherence properties of electromagnetic radiation mitted from or propagated through random medium 20 p3437 N68-32804

Reduced probabilities of electric quadrupole transi-ons in even-even nuclei

Green functions used to determine transition proba-lities and expected values of single particle operators

brational relaxation of harmonic oscillators in-ing multiple quantum transitions

stronomical transit for observing Southern Hemi-ere stars at observatory in Chile

Filter evaluation for solar observation transits in solar right accession determinations

Algorithm to recognize sets of character strings seciled by canonic systems, and program for imple-

cillator strengths and trans

ibilities of E lambda to

in odd mass rare earth nuclei [JINR-P4-3935]

NT CINETHEODOLITES

TRANSLATING NT MACHINE TRANSLATION

NT THREE DIMENSIONAL FLOW NT THREE DIMENSIONAL MOTION

[MAC-TR-46]

TRANSLATIONAL MOTION NT SECONDARY FLOW

Linear and circular transler ects on indication accuracy

3288 lines of iron [[NBS-MONOGRAPH-108]

(ITF-68-7)

Green fu

TRANSITS

Spin quadrupole forces and deformed nuclei effects on transit [JINR-E4-3134]

Functions of transition for Kahler n

shock heated gas [NASA-CR-93856]

carbon, silicon, phos [NASA-CR-93928]

nuclei for approxi [JINR-P4-3650]

[FTEF-52]

N-forbidden beta tra

Molecular beam str

[UCRL-17961]

[NASA-CR-95344]

Transition of 341 keV acc

d neutron by Ti 48

Surveyor 6 spacecraft flight performance charac-teristics, including data on television equipment, alpha scattering experiment, and powered flight translation [NASA-CR-93495] 09 p1431 N68-18661

Steady state response of hypercritical shafts with anslationally and rotationally resisting elastic sup-

13 p2157 N68-23100 Dynamic and geometric analyses of five-element ve-jointed spatial crank drive motion sequence 18 p3081 N68-30401

Effect of translational bo ndary motion on standing of elastic media (NOLTR-68-92) 20 p3535 N68-32371

TRANSLUNAR SPACE
U INTERPLANETARY SPACE

TRANSMISSION

ACOUSTIC ATTENUATION AERODYNAMIC HEAT TRANSFER

AUTOMATIC PICTURE TRANSMISSION
CONDUCTIVE HEAT TRANSFER
CONVECTIVE HEAT TRANSFER
DATA TRANSMISSION
DIFFRACTION PROPAGATION NT

ELECTRIC POWER TRANSMISSION ELECTROMAGNETIC WAVE TRANSMIS-

SION FREQUENCY DIVISION MULTIPLEXING GROUND WAVE PROPAGATION HEAT TRANSFER HEAT TRANSMISSION

HYPERSONIC HEAT TRANSFER NT INTERSOR. HEAT TRANSFER
IONOSPHERIC F-SCATTER PROPAGATION
IONOSPHERIC PROPAGATION
LAMINAR HEAT TRANSFER
LIGHT SCATTERING
LIGHT TRANSMISSION

NT

MANDELSTAM REPRESENTATION MICROWAVE ATTENUATION MICROWAVE TRANSMISSION

MULTIPATH TRANSMISSIO

NT MULTIPLEXING RADAR ATTENUATION RADAR TRANSMISSION

RADIATIVE HEAT TRANSFER RADIO ATTENUATION RADIO TRANSMISSION NT NT NT NT

RADIO I RANSMISSION SATELLITE TRANSMISSION SCATTER PROPAGATION SELF PROPAGATION SHOCK WAVE ATTENUATION SHOCK WAVE PROPAGATION NT

SHORT WAVE RADIO TRANSMISSION SIGNAL REFLECTION

SINGLE SIDEBAND TRANSMISSION SOUND TRANSMISSION

STRESS PROPAGATION SUPERSONIC HEAT TRANSFER TELEPHONY

TELEPHONY
TELEVISION TRANSMISSION
TIME DIVISION MULTIPLEXING
TRANSEQUATORIAL PROPAGATION

TURBULENT HEAT TRANSFER

WAVE ATTENUATION WAVE DISPERSION WAVE PROPAGATION

Principles of operation and out-of-band charac-ristics of rectangular/coaxial rotary joints REPT.-53-5309.06] 02 p0189 N68-11473 teristics of rectangula [REPT.-53-5309.06]

TRANSMISSION CIRCUITS

Theory and experiments on transient wave expansion various transmission line arrangements to determine unsient voltage form in short-line faults

09 p1321 N68-19469

TRANSMISSION EFFICIENCY

Transmission loss and correlation of regular terrain at 20, 50, and 100 MHz [ITSA-35] on coefficients in ir-03 p0338 N68-11970

ents and hydrodynamic efficiency of spiroid and helicon gears

15 p2472 N68-26035 Literature review on use of analog computers for economic analysis of electrical power systems in U.S.R., U.S.A., and Japan [FTD-MT-24-316-67] 15 p2434 N68-26536

Mathematical model for propagation reliability of microwave signals as function of path length, fade mar-gin, and geographical location 16 p2624 N68-27734

Communication theory, entropy, and transmission efficiency of feedback control systems stems 16 p2636 N68-27896

Efficiency, impedance, and comparative per-rmance of electrically short, circular transmission line /ring/ antenna [RADC-TR-68-85] 18 p3035 N68-30083

Design and solutions of transmitter filter for improved analog voice communication
[AFCRL-68-0227] 20 p3436 N68-32489

Maximum principle for distributed systems applied to design of waveguides and transmission lines [NASA-CR-96358] 20 p3455 N68-33578 TRANSMISSION FLUIDS

Hydrodynamic drive instability due to fluid oscilla-

15 p2451 N68-25888 TRANSMISSION LINES

BEAM WAVEGUIDES COAXIAL CABLES COMMUNICATION CABLES

FLUID TRANSMI PLASMAGUIDES

POWER LINES WAVEGUIDES

Microwave all-pass [RADC-TR-67-385] 01 p0045 N68-10886 ce probe for measuring trans-

Standing wave impeda [UU-67-5] 03 p0342 N68-12091

Dispersion relations for uniformly periodic dipole ar-tys driven with glide-symmetric excitation from minor transmission lines and interspersed with un-tiven parasitic elements driven parasitic eler [AFCRL-67-0389] 06 p0798 N68-15419

Cascaded low pass lumped sections, and transmission lines of commensurate length for filter synthesis 07 p0979 N68-16988

Standard cable circuits for data tra [WRE-TN-EC-27] 08 p1145 N68-17250 Probe impedances and radiation pattern for excita-tion voltages in ring antennas

10 p1494 N68-19609 Eighty way stripline power divider design for antenna

array feed [REPT.-67SD361] 11 p1673 N68-21261

Numerical methods for calculating time functions of linear transmission systems [RAE-LIB-TRANS-1283]

13 p2046 N68-24342

Thin film optical transmit [C7-929.1/501] 15 p2438 N68-26957 Finite difference methods for calculation of upper and lower bounds for characteristic impedance of transmission line cross sections with curved conducting

boundaries [WRE-TN-PAD-143] 17 p2850 N68-28885 ion line type large digital spark chambers 17 p2869 N68-29323 [BNL-12362]

Theoretical analysis of hollow waveguide coupling by thin impedance layers 18 p3054 N68-30608

Transmission line model for analysis of planar equiangular spiral antenna 19 p3235 N68-30900

Correlation function calculations for wind field at

20 p3576 N68-33521 Relationships between continuously scaled, periodic and log periodic structures with application to log periodic antennas

21 p3656 N68-33690

Coupled microstrip propagation and related problems [ESD-TR-68-226] 22 p3917 N68-35390

Radio frequency techniques, microwave thermal noise standards, radio frequency breakdown in coaxial transmission lines, and coaxial cavity radiator develop-

23 p4024 N68-37418 ents in cable manufacture, and use of New developments in cable manufacture, and use of waveguides for long distance communication [FTD-HT-23-1006-67] 24 p4236 N68-38135

TRANSMISSION LOSS

Transmission loss from precipitation scatter inter-ference between space and earth communication NASA-CR-90108] 01 p0032 N68-10936 Transmission loss and correlation coefficients in irregular terrain at 20, 50, and 100 MHz [ITSA-35] 03 p0338 N68-11970

Attenuation rate of very low radio frequency waves propagating over Antarctic region 14 p2224 N68-25201

A-1324

14 p2257 N68-25202

18 p3069 N68-30615

19 p3240 N68-31482

pling and acquisition multitransmissometer

12 p1872 N68-22228

17 p2834 N68-29461

12 pl889 N68-22636

14 p2299 N68-25154

EX

183

im-

89

ed

78

Radar altimeter recording errors caused by electrical properties of Arctic region Transient radiation effects on transmission loss and reflectance in optical glasses and quartz [LA-DC-8636] 17 p2952 N68-28358 Tropospheric scatter path loss at C band and meteorology of Greek island [SRDE-67021] 18 p3059 NAS TOLES Computer programs for tropospheric transmission [IER-45-ITSA-45] Computer method for predicting transmission loss over irregular terrain [NASA-CR-97275] 23 p4022 N68-37023 THANSMISSIVITY Transmissivity of carbon particle-seeded nitrogen jet for heat transfer predictions [NASA-TN-D-4722] 18 p3124 N68-30596 TRANSMISSOMETERS Transmissometer for snowfall measurement by opti-cal attenuation [MW-51] 07 p0993 N68-17132 Test program and data sam techniques for evaluating systems at five different airports [RD-67-72] Factors affecting the range of light visibility in fog and range estimation at airports by visual observation and transmissometers [RAE-LIB-TRANS-1295] Calibration techniques development for runway visi-bility tranmissometer systems [RD-68-7] 21 p3692 N68-34311 TRANSMITTANCE Polarization dependent transmittance, reflectance nd photoeffect of Al films using synchrotron radiation in utraviolet region (DESY-67/33) Beam transport system analysis for particle accelera-(BNL-12138) Transmittance of thin films and photoionization of gases in selective detectors set for photons in ultravoicet appearrum [NASA-CR-1096] 16 p2732 N68-28250 (REPT.-314)

Absorption spectra and transmittance for infrared distion absorbed by carbon dioxide U-4132] 18 p3026 N68-30265

Ultrahigh vacuum reflectometer for use in studying reflectance, transmittance, and photoemission [DESY-68/26] 23 p4065 N68-37173 Eye protective welding filter transmittances using 24 p4263 N68-38446 TRANSMITTER RECEIVERS

Assembly and development of radio frequency por-tions of transmitter and receiver in thin film personal communications and telemetry system [NASA-CR-65937] 07 p0967 N68-17170

System package design for thin film radio frequency transmitter receiver circuit modules [NASA-CR-65988] 09 p1303 N68-18780 og p1303 N68-18780 Very low frequency ground station transmitter ob-rvations of whistler mode signals in OGO satellites. 09 p1336 N68-19310

Development and flight tests of modifications to resolve airborne/ground glidepath tracking errors [RD-67-69] 10 p1553 N68-19702

Radio frequency interference analysis for onboard transmitter of ELDG launch vehicle configuration [ELDG-RFI-11] 10 p1498 N68-20102

Radio frequency interference measurements and desensitization of ELDO launch vehicle radio transmitter receiver system [ELDO.RFI-6] 10 p1501 N69-20348 Airborne transciever system for telemetry and

telecommand applications (BMWF-FB-W-67-21) 11 p1665 N68-21726 Novel designs of small, linear, single frequency radio repeaters for FM tactical transceivers [AIL-2282-1] 13 p2026 N68-23330 13 p2026 N68-23350

Calculated mutual interference between satellite and ratio repeater systems [REPT.-6097] 13 p2028 N68-23884 Solution of breakdown problem at partial pressures in Apollo LEM transceiver

15 p2445 N68-26892 Analysis of orthogonal tro-less and noisy feedback link smitter signals for noise-17 p2849 N68-28701 Operation and troubleshooting of transceiver training by programmed computer control
[TR-59] 21 p3666 N68-34622

tion and testing of thin film personal communications and telemetry system (NASA-CR-92323) 23 p4023 N68-37330

SACE-923(23)

SMITTERS
INSTRUMENT TRANSMITTERS
INSTRUMENT TRANSMITTERS
ONNOSONDES
OMNIDIRECTIONAL RADIO RANGES
RADIO BEACONS
RADIO TRANSMITTERS
RADIOSONDES
RADIOTELEPHONES
RADIOTELEPHONES
RAWINSONDES
REFEATERS
SONOBUOYS
TRANSMITTER RECEIVERS
TRANSMITTER RECEIVERS

Refractivity variations measured by use of radar antennas at both ends of wave propagation path [NASA-CR-95479] 17 p2849 N68-28656

inr transmitter 20 p3492 N68-32447 Solid state laser rada: [WRE-TN-PAD-146] Spectral studies of signals present in command and communications system uplink transmitter of Saturn 5 radio frequency tracking and ranging systems (NASA-CR-96033) 23 p4023 N68-37208 TRANSOCEANIC SYSTEMS

High-speed HF radio transmissions for global decommunication system in World Weather Watch PB-174842] 02 p0183 N68-11893 Operational and cost estimates for rocket planes in ansoceanic traffic

15 p2385 N68-26024 TRANSONIC AIRCRAFT
U SUPERSONIC AIRCRAFT

TRANSONIC COMPRESSORS Blust trailing edge blade concept application to low hub tip ratio transonic and supersonic compressors [VKI-IN-27] 24 p4194 N68-38033

TRANSONIC FLIGHT

Tail assembly design requir body-wing configurations for tre ments and effects of nsonic fighter aircraft 11 p1621 N68-21636 Aerodynamic engine integration and propulsive effi-ciency studies for transonic and supersonic aircraft flights.

TRANSONIC FLOW

Heat and momentum transfer in region of Reynolds analogy disturbance, transonic flow properties, boun-dary layer formation, and heat flux density valves 02 p0287 N68-11722

11 p1778 N68-21669

riscid flow past plane airfoils 19] 03 p0335 N68-12133 [ONERA-TP-519] Series expamiom used in throat region of two di ry smooth walls [ARC-R&M-3481]

06 p0829 N68-15759 or transonic flow in turning arbitrary smooth profile O6 p0829 N68-15760 Approximate solu-region of annular no [ARC-R&M-3480]

Mach number at which drag begins in transonic flow stermined by method of characteristics

Hypersonic and transonic gas flows
06 p0830 N68-15984 Nonlinear approximation for three dimensional lift-ing surfaces in transonic gas flow applied to symmetric body and thin wing for two and three dimensional cases

[TR-47] 07 p0934 N68-16547 Stability of two dimer al transonic flows arou (NLR-TN-T-182) 07 p0985 N68-16561

Steady transonic potential flow obtained by hodo-aph method applied to non lifting symmetrical airfoil NI B.TR.T. 1341 07 p0934 N68-16605

Transonic potential flow around quasi-elliptical air-foil profiles obtained from integral transform methods [NLR-TR-T-172] 07 p0934 N68-16609

Subsonic and transonic flutter and flow studies of T tail of large multijet cargo airplane [NASA-TN-D-4316] 07 p0936 N68-17035 77 p0936 N68-17033 litting, and lifting airfolis [T-172]

down wind tunnel test facility [NASA-TM-X-53571] 06 p1160 N68-18190

Analytical and numerical solutions of partial dif-rential equations for effect of viscosity on transmic [AROD-3537-5-E] 10 p1455 N68-19732

Wind tunnel drag measurements on afterbodies at transonic speeds showing sting interference [RAE-TR-66298] 11 p1622 M68-21783

Three dimensional transonic and supersonic flows nast elliptical cones [FTD-HT-67-70] 12 p1814 N68-23038

Marching procedure for determining inviscid two dimensional sonic flow past binnt symmetrical bodies [ARC-CP-92] 18 p.2994 N64-29837
Linear and nonlinear small perturbation theory for nonequilibrium plane flows [IA-133] 19 p.3363 N68-31688

Transonic stator with me tiple circular arc sirful ed over range of flow as and minimum curvature ter gles and velocities - stator A [NASA-CR-54621] 20 p3394 N68-33499

Transonic stator with multiple circular are sinfulla and minimum curvature tented over range of flow angles and velocities - stator B [NASA-CR-34622] 20 p.3394 N68-33500 -20 p3394 N68-33500

Transonic stator with double circular arc airfolia tested over range of flow angles and velocities [NASA-CR-54623] 20 p3395 N66-33501

Unsteady flow approach to computing axisymmetric transonic swirl flows using three dimensional mothod of characteristics, and accuracy check on smaller (ARL-68-0070) 21 p3682 N68-34465

Steady and fluctuating airloads on protuberance and surrounding structure of transonic progulation wind tunnel/16T/ [NASA-CR-61994] 22 p3801 N68-35786

Effect of geometry of conical aftertodies on base drag at subsonic and transonic speeds [NASA-TN-D-4821] 23 p3986 N68-37054

TRANSONIC INLETS
U SUPERSONIC INLETS TRANSONIC NOZZLES

Performance evaluation of on-deflection nozzles incl on of annular plug and expan-scluding external flow effects nt transonic Mach mmi [NASA-TN-D-4462] 10 p1456 N68-20330

TRANSONIC SPEED

Measurements of sideforce and yawing moment on wing-fuselage stores-on 45 deg swept wing model (ARC-CP-935) 04 p0432 N68-12913

Comparison of wind tunnel data with transonic speeds torque of Fairey Delta 2 aircraft [ARC-R&M-3485] 04 p0445 N68-13675 Design and performat empression axisymmetr testing of large scale mixed inlet at transports and super-

(NASA-TM-X-1507) 07 p1074 N68-17028 microd wings and deter

Calculations for three din sination of surfaces for va-cristics for tramonic speeds 07 p0934 N68-17049

Wall interference of of half-models in venti [NPL-AERO-1243]

factuating pressures on nic upond 12 p1972 N68-22742 Wind tunnel investi INASA-TM-X-1574)

Subsonic and transoni teristics data on 60 deg is [NASA-CR-95373] Comparative theory tions of forces on oscillating wings thro [NPL-AERO-1246] 21 p3618 N68-34258

Aerodynamic drug s layer flow over V socch neasurements and boundary es at transcoit and supersonic

NASA-CR-11321 22 p3659 N68-35252 Flexibility effects on lift an aspect ratio delta wing-conic binacions at transcoic speeds [NASA-TN-D-4655] of pitching moments of lo

23 p3906 N68-37065 Effects of simulated jet exhaust flow on transcri-credynamic characteristics of Apollo hunch escap

INASA-TN-D-48431 23 p4177 N68-37074 i states for tree

NASA-CR-54624) 23 p3987 N48-37393

TRANSONIC WIND TUNNELS

An

AN

Sta

(AD-

Tra layer (FTE

Sta

Ga elect [NA

Bo

NA

Re effec [AD

M

TA!

IDI-

N

FC tions tubu [NA

Di

Ti

T

Ti

T

T

Colv calc

tran (UC

T

Wind tunnel monitoring device for setting and hing constant test Mach numbers at transonic spearing Wheatstone bridge [RAE-TR-67155] 04 p0510 N68-134 04 p0510 N68-13652 mics wind tunnels Techniques used in tra to solve launch vehicle as [NASA-TM-X-60862] 07 p1090 N68-16551 el testa of air-Velocity range of tra-07 p0986 N68-16768 Microelectronic data an dynamic transonic wind tur [NASA-TM-X-61231] te control system for 21 p3692 N68-34325 Steady and fluctu [NASA-CR-61994] 22 p3801 N68-35786 RANSONICS U TRANSONIC FLOW TRANSPARENCE Preparation of transposide by hot forging and [AVSSD-0415-67-RR] 64 p0525 N68-12985 tracing optics for 05 p0699 N68-14297 characteristics, and trans-d as part of gaseous nuclear (NASA-CR-92987) 07 p1030 N68-16664 netic ceramics, trans-nobility ceramics 11 p1719 N68-21258 Ceramic suclear serent ceramics, and [REPT.-67-C-234] of photographs of scin-(RT/EL/67/13) 11 p1698 N68-21348 , and temperature effects on polymethyl mer [MINTECH-T-5766] 24 p4273 N68-38352 TRANSPARENCE TRANSPIRATION 02 p0231 N68-11022 ation source for solar 03 p0400 N68-12149 ICP-3/3121 at of 50 kW fluid trac spiration are solar (NASA-CR-92067) 12 p1857 N68-22888 ergy exchange and evaporation at earth a (PS-177748) 19 p3304 N68-31687 TRANSPIRATION COOLING U SWEAT COOLING TRANSPONDERS [NASA-CR-93669] 09 p1306 N68-19390 ation on ELDO 10 p1498 N68-20071 rature differences undrants of GEOSat pipe for m 13 p2168 N68-23540 of digital phase means cent retrodirective tran 15 p2428 N68-26498 NASA-CR-614061 Experimental FM a ig tramponder system metering 15 p2429 N68-26867 15 p2446 N68-26901 patterns by single recognition and inter-(RADC-TR-48-146) 18 p3033 N68-29774 nder system for phase 19 p3238 N68-31296 Engineering design or rhit determination for airborne range and der station, and test

onder obeckout 19 p3238 N68-31328

21 p3659 N48-34179

n range altitude moni-ating air traffic control r-equipped aircraft 23 p4097 N68-36019 Tra NASA-CR-92354 24 p4227 N68-38105 test using ground equip-Applications Technology 24 p4228 N68-38162 BOEING 707 AIRCRAFT BOEING 720 AIRCRAFT BOEING 721 AIRCRAFT C-47 AIRCRAFT C-130 AIRCRAFT C-135 AIRCRAFT CARGO AIRCRAFT CHARLES AIRCRAFT CH- 47 HELICOPTER CH- 53 HELICOPTER CH-53 HELICOPTER
CONCORDE AIRCRAFT
DC 9 AIRCRAFT
DC 9 AIRCRAFT
DO-31 AIRCRAFT
F-20 TRANSPORT AIRCRAFT
HTB-320 AIRCRAFT
TU-124 AIRCRAFT
VISCOUNT AIRCRAFT
VISCOUNT AIRCRAFT
VISCOUNT AIRCRAFT
XC-142 AIRCRAFT XC-142 AIRCRAFT V/STOL short haul tra including noise charac [NASA-CR-670/01/] 02 p0159 N68-11174 Thrust and altitude effuring steep approaches o on ground track noise engine, medium range, furbojet transports [NASA-TN-D-4241] 02 p0157 N68-11253 Drag of large subso gures-of-merit derive ft analyzed in terms of Melvill Jones original concept of street [ARA-66] 02 p0161 N68-11854 Goals and performat supersonic transports ds for development 03 p0299 N68-11917 Economic and m transport aircraft co [NASA-CR-986] serison of short haul 04 p0444 N68-13517 ations, passenger traffic and airport planning 06 p0766 N68-15099 06 p0766 N68-15100 a analysis from four-en-Velocity, gr NASA-TN-D-43301 07 p0935 N68-16522 d by mass and inerti aircraft - survey and i 08 pl108 N68-17440 ns induced by turbu 08 pl 109 N68-17448 alling in transport air-08 p1112 N68-17470 bility and flig ties of swept wing, (NASA-TT-F-10204) 09 p1271 N68-19018 ie model d al airborne stages of (NASA-TN-D-4438) 11 p1623 N68-21112 Log-linear, log-qui curves and cost estan d log-cubic learning lods for cargo aircraft GSM/SM/67-2/7] 11 p1623 N68-21116 New concepts f aircraft following (ADS-68-2) ion of transport 11 p1625 N68-21519 rations for transining speed 11 p1621 N68-21635 and cost estimates for 11 p1626 N68-21793 soceleration and im-14 p2183 N68-24476 ques for older trans 14 m2184 N68-24778

Longitudinal and lateral directional control of large slender transport aircraft 15 p2384 N68-25792 parative direct transport aircraft 15 p2385 N68-26159 tical ans lysis of n d loads on general aviation and transport aircr [NASA-TM-X-60385] 16 p2587 N68-27430 Interaction between airframe-powerplant integration and hot gas ingestion for jet lift V/STOL transport air-craft 17 p2807 N68-28859 Economic effects from aircraft designs which extend fatigue life and integrate fail-safe factors.

18 p3000 N68-29646 Jet wake effect of high bypass jet engine on wing-nacelle interference drag of subsonic transport model [NASA-TN-D-4693] 18 p2999 N68-30595 Inertial Navigation System for con sercial air trans-20 p3526 N68-32623 Feasibility of revised V/STOL design and flight plan oncepts for short haul transport aircraft NASA-CR-743/1/) 22 p3804 N68-35177 concepts for short has [NASA-CR-743/1/] Aerodynamic charatransport model in slo [NASA-TM-X-1660] of subsonic cargo jet onic wind tunnel 22 p3800 N68-35617 Sideslip angle effects teristics of T tail transport [NASA-TM-X-1665] static stability characguration 23 p3983 N68-36112 accidents during 1957-1966 in-ns in fuel systems 23 p3988 N68-36269 TRANSPORT COEFFICIENTS
U COEFFICIENTS TRANSPORT EQUATION

U BOLTZMANN TRANSPORT EQUATION TRANSPORT PROPERTIES

NT ATMOSPHERIC CONDUCTIVITY

NT CARRIER MOBILITY

NT DIFFUSION COEFFICIENT

NT ELECTRICAL RESISTIVITY

NT ELECTRICAL RESISTIVITY

NT ELECTRON MOBILITY ELECTRON MOBILITY
GAS VISCOGITY
GASEOUS DIFFUSION
GASEOUS SELF-DIFFUSION
HOLE MOBILITY
IONIC MOBILITY
IONIC MOBILITY
MAGNETORESISTIVITY MAGNETORESISTIVITY
PHOTOCONDUCTIVITY
PHASMA CONDUCTIVITY
SUPERCONDUCTIVITY
THERMAL CONDUCTIVITY
THERMAL DIFFUSIVITY
VISCOSITY Automated Hall effect and resistivity apparatus for dying electrical transport properties of semiconduc-ION [NASA-TM-X-1464] 01 p0004 N68-10103 ations for fusion product nalysis in reactor coolant cir-01 p0090 N68-10434 ORNL-P-32051 wo dimensional neutron d and isotropic scatter-KAPL-P-33651 01 p0107 N68-10474 Electron mobility [REPT.-4763.5-C] olten salt solutions 01 p0022 N68-10572 Heat transfer and ten upper layer of North Atla [NOO-TRANS-294] re profile changes in 01 p0061 N68-10819 Mass action equidefects in binary al [ARL 67-0147] for formation of point 02 p0174 N68-11132 nal trans

ms in quantum theory

02 p0246 N68-11535

03 p0408 N68-12450 ta compared with theory sutron transport code for and plutonium 239 03 p0377 N68-12595

04 p0557 N68-13253

04 p0455 N68-13316

Stationary high field domains in negative differential poductivity range analyzed in cadmium sulfide single

of transport pher WIS-TCI-225]

Experiment ing one di

uranium 235, ura [LA-DC-8386]

antimonides in high of [RADC-TR-67-607]

Charge carrier tram liquid crystals to deter magnetic fields on biol (NASA-CR-91523)

(TR-21)

06 p0925 N68-15485

07 p0955 N68-16356

07 p0955 N68-16374

07 p1096 N68-16681

07 p0986 N68-16772

08 p1223 N68-17657

of complex materials 08 p1225 N68-17865

08 p1165 N68-18204

09 p1396 N68-19263

actor order parameter and

EX

urge

792

rect

159

130

159

md

46

RS-

23

77

17

12

Methods and equipment for determining transport coefficients using high power arcs [ARL-67-0219] 04 p0554 N68-13389 American Nuclear Society proceedings on radiation ransport and biological effects
ANS-SD-4]

04 p0458 N68-13781 [ANS-SD-4] ANS-SD-4]
Statistical theory of emission, absorption, and conscrivity of radiation in ionized plasmas
06 p0839 N68-15295 Transport processes of fuel oxidizer mixture when in-ceted through porous plate into luminar boundary layer [FTD-HT-23-790-67] Stable gaseous isotope separation by thermal diffu-ion and other means, molecular beam scattering, ransport coefficients and properties, and low tempera-(MLM-1419) Air-ground interface effect on transport of fission neutrons through atmosphere [ORNL-TM-1819] 07 p1041 N68-16360 Gas solubilities and transport properties in fuel cell [NASA-CR-92997] Boltzmann equation for calculating transport coeffi-cients and thermal conductivity of partially ionized NASA-TM-X-60857] Small-scale structure of turbulence in curved mixing yer at primary jet speed of 34 ft/sec Relaxation of superconductor facts of electron-phonon intera [AD-663463] Research survey on molecular structure, chemical actions, magnetic and electrical properties, transport roperties and reaction kinetics of complex materials Mixing function for integral analysis on separated boundary layer flow [TAE-77] 08 pl 165 N68-18204 t of cosmic rays in interplanetary medium 09 p1416 N68-18422 [D1-82-0625] Neutron transport in cylindrical rod determined by method of successive collisions [ITEF-482] 09 p1387 N68-18483 FORTRAN subroutines for determining intersec-tions of nuclear particle flight path and wall of helical tubular duct (NASA-TN-0-4435) 09 p1374 N68-18541

Discrete ordinates method applied to photon trans-ort calculations by computer SC-RR-67-419]

Transport and acceleration of particles as result of electric and magnetic disturbances [REPT.-68-04] 10 p1588 N68-20442 Thermal conductivity of nickel-zinc ferrite at liquid helium temperatures, and transport properties of n-type germanium at low temperatures 10 m1532 Nos.20502 10 p1582 N68-20502

Transport properties of metals, equations based or perturbation theory, and suggested changes for trans-port theory 10 p1583 N68-20507

Transport properties of polyatomic fluids 10 p1518 N68-20517 Transport properties for weakly ionized gases, binary Maxwell molecular gases, and fully ionized gases [NASA-CR-93918] 11 p1683 N68-20860

Boltzmann treatment of electron gas transport in agnetohydrodynamic flow to enhance electric con-

11 p1761 N68-20981 Coupled, first order partial differential equations in-volving particle current density and particle density for calculating high frequency effects on charge transport

12 p1952 N68-21957 Nuclear activation technique for studying details of ansport mechanisms during sintering UCRL-70164) 12 p1841 N68-23015 (UCRL-70164)

Intermolecular interaction for polar and nonpolar molecules correlated with thermodynamic and transport properties of gases 13 p2165 N68-23070

Transpiration cooling of cylinder in crossflow 13 p2167 N68-23441 Temperature history and fluid-solid interface effects heat conduction in certain liquids. 13 p2172 N68-26031

Measured electron drift mubilities and life times in lithium-doped ainc unide crystal [AD-667489]

Transport properties of palladium gold alloys 14 p2331 N68-25046

Bibliography for preparation, crystal structure trans-port properties for transition metals [ORNL-RMIC-8] 14 p2274 N68-25555 tion, crystal structure trans Steady laminar magnetohydrodynamic gas flow in

15 p2529 N68-26230 Chapman-Enskog theory and Boltzmann equation or transport properties of partially ionized gases 15 p2530 N68-26279

Dependence of transport properties of transition tetal alloys and compounds on electron number 16 p2742 N68-27276

Bibliography of low temperature mechanical, ther-modynamic, and transport properties of methane [NASA-CR-95219] 16 p2793 N68-27412

Transport properties of high temperature gases [NASA-TM-X-52315] 16 p2795 N68-27697 Oblique collisionless shock wave structure in deu-terium and hydrogen, and plasma turbulence [ORO-3647-2] 16 p2739 N68-28171

Gallium arsenide band structure, transport and physical properties, crystal growth, and hazards [AERE-R-5757] 16 p2685 N69-28276

Thermodynamic and transport properties of water apor and mixtures of water vapor and nonpolar gases 18 p3021 N68-29978

Research progress in plasma transport properties, save interaction, electron density measurements, ther-nal conductivity of argon and helium, heat transfer and NASA-CR-958741 18 p3144 N68-30295

Transport theory and computer calculations for sta-tionary phenomena in semiconductor devices [DISS. NR. 4030] 18 p3155 N68-30481

Transport properties of Se-PbTe combination for possible use in infrared photoconductive multipliers [AD-670009] 18 p3049 N68-30675

oximation and convergent kinetic equation mechanical treatment of static transport in nondegenerate plasmas Born approx 19 p3338 N68-31023

Translationally invariant magnetic field single parti-cle wave functions of electrons in periodic potential with applications to frequency and wavelength depen-dent transport phenomena 19 p3351 N68-31150

Gas solubilities and transport properties in fuel cell [NASA-CR-95957] 19 p3203 N68-31340

Permeability characteristics and transport properties f membranes for salt water conversion, and experi-[NASA-CR-96282] 20 p3478 N68-32704

Transport coefficients of high temperature, partially egenerate plasma calculated with Chapman-Enskog (N68-1) 20 p3556 N68-32759

Transport properties and reactions of thermal energy mass identified by drift tube mass spectroscopy [SQUID-TR-GIT-3-PU] 20 p3423 N68-32797

Dense phase horizontal transport characteristics of ir-solid mixtures in region of dense phase or mass flow 20 p.3464 N68-33109

ion sources and beam transport systems for pre-ac-celerator of linear particle accelerator [BNL-12494] 20 p3457 N68-33135

Statistical mechanical the ties for dilute, dissociating, m ories of transport proper-noderately dense, and critical region steam [NASA-TM-X-52478] 20 p3613 N68-33516

rt, and nuclear properties 21 p3794 N68-34076

Integral approximation and cumulant expansion ethods for solution of Boltzmann equation and trans-ert processes compared with Chapman-Enskey method (SQUID-TR-MIT-43-PU)

21 p3796 N68-34760 Research program on physics transport properties of alkali me [AGN-8284] l, thermodynamic, as tale 21 p3796 N68-34793

Permention, diffusion, and solubility of helium, water vapor, hydrogen, nitrogen, and carbon dioxide in amorphous and crystalline polypropylene and polyester

(TRANS-1537) 22 p3896 N68-35327

d for calculating transport coef-Approximate method ficients of thermal plasms [DLR-FB-68-38, PT. 4]

22 p3944 N68-35569 tions required to calculate s of plasmas - inelastic dif-excited states of hydrogen 22 p3944 N68-35384 Expressions for cross sectinelastic transport properties fusion cross sections for first [SC-RR-68-171]

1-to-waist transport of ns optics 22 p3918 N68-35684 Graphs for co charged particle beam in the [UCRL-18217] Selected thermodynamic and transport properties of inary electrolytes in aqueous solution compiled from

UCRL-17767 22 p3831 N68-35921 Transport relationship characteristics of non-biot [ORO-490-12A] or adoption-description dable solute 23 p4006 N68-36230

23 p Dislocations on tilic (FTD-HT-67-395) erystals by indentation 23 p4151 N68-36609

Aqueous electrolytic solu structure and transport prop [AD-674407] ons studied to determ 24 p4219 N68-38240

Galvanomagnetic and the gallium arsenide after coppo [FTD-HT-23-762-67] omagnetic properties of iffusion 24 p4335 N68-38342

Meteorological and particle studies related to health physics - plume rise, site evaluation and calculation, diffusion and transport, spectra, scavenging, theory, and air pollution [AECL-2787] 24 p4284 N68-38375 24 p4284 N68-38375

TRANSPORT THEORY

NT CHAPMAN-ENSKOG THEORY

NT MIXING LENGTH FLOW THEORY

Approximate solution for neutron transport in infinite homogeneous slate with fluite thickness (EUR-3420.E) 01 p0101 N68-10024 01 p0101 N68-10024

Boundary value probles vergence theorems, and tra [AROD-407-76-M] analytic functions, con-02 p0228 N68-11261

Direct and inverse price initial value methods (RM-5447-PR) as for integral equations 04 p0528 N68-13034

Thermal diffu ort phenomena, and molecular collisions in gases (AROD-5366-14-P) 04 p0595 N68-13312 Users manual on Fortran programs for gamma trans-

EUR-3555.E) 04 p0538 N68-13359 monogenetic gamma rays in finite media

Transport theoretical c of thermal and epitherma ns of spectral indexes

m spectra 07 p1025 N68-16216 Monte Carlo calcu of transport of 5001

MeV/c muom in iron cylinds [ORNL-TM-2048] 07 p1043 NGE-16453

on transport theory to action-free zero power PERCENT [TUBIK-5] OR p1201 N66-17245

port processes in to-08 p1217 N68-17367

JPRS-44390 08 p1204 N68-17535

Monte Carlo code port calculations in p (DAC-40659) 06 p1213 N68-17617 Ergodic theory and discrete transport processes [AD-664026] 09 p1366 N68-18432

neutron thermalis

Continuum behavior of triquid crystals espect phonomers in 10 p1558 M68-19930

-Theory of electron true 11 p1771 Non-20040

Transport-theory angular SNAP reactor analysis [NAA-SR-MEMO-12592] milion could 11 p1740 148-210 Theory of trumpo

A-1327

Trans

Perfo

Equat

WRE-1

dinal wa

Trans

First o

TR-15

With tras

Finite

RR-56-

Intera

Liquid

Reflec

NASA-

Trans

Atten

fined but |SIT-28

Trans beams a plification UTEC-

interp tions of tion of T [WRE-T

Ritz 1

springs i

STRONG U

Dynamical theory of thermoelasticity using form of transport equation that includes time required for ac-celeration of heat flow Neutron transport approximations used in light water breeder reactor development program [WAPD-TM-690] 18 p3134 N68-30468 13 p2157 N68-23270 Transport theory and computer calculations for sta-tionary phenomena in semiconductor devices [DISS. NR. 4030] 18 p3155 N68-30481 Multigroup diffusion theory for solution of tramport (TRG-1568/R/) 13 p2170 N68-23739 Solution for equation of charged particle transport in Error correction transport theory code used after pectral and lattice structure analysis of uranium rods (A.8462) [4 p2292 N68-24987 (ORNL-TR-1912) [GA-8462] Photon gas formulation and electromagnetic wave regulation for transport of energy and momentum by termal radiation port equation theory 14 p2316 N68-25255 [AEEW-M-676] SORS Monte Carlo phot TRAN for CDC 6600 comp [UCRL-50358] -transport code in FOR-Theory for corrosion product transport in water cooled reactors [BNWL-676] 20 p3534 N68-33433 14 p2316 N68-25261 Space radiation transport, design and advanced concepts, at lating radiation penetration through conference. transport, spacecraft shielding I concepts, and methods for calcu-tration through protective shields -FORTRAN 4 code to prepare 16-group nuclear data tape for transport codes [GEMP-617] conference [NASA-SP-169] 15 p2550 N68-26128 Cross section set sensitivity to neutron transport in Inelastic and large angle scattering effect on calcula-m of relativistic electron transport through malter OXYGEN [ORNL-TM-2252] port through matter 15 p2552 N68-26140 TRANSPORT VEHICLES m Lewis transport equa-istribution in space, ener-instruction medium Multiple scattering probler tion solution from electron di gy, and direction of motion in Design, and development of satellite communica-tions ground terminals on moving vehicle - vocoders for speech compression, signal modulation, and auto-matic repression. 15 p2552 N68-26142 (ESD-TR-67-182) te Carlo calc ns for high energy nucleon Transportable satellite military signal processing ort in spacecraft radia 15 p2552 N68-26144 command control of Concorde super-ic transport - interfaces with other systems, use of undancy, and safety considerations Computer programs determining critical control arameters for nuclear reactors and fuel handling and WAPD-T-21221 15 p2505 N68-26834 Amplitude statistics of vibration measurements on trucks and airplanes during spacecraft transportation 14 p2361 N68-25479 Solar neutron trus neutron spectral mea [NASA-CR-95145] rt in Earth atmosphere from 16 p2752 N68-27208 Conversion of FORTRAN two dimensional transport program code for use on CDC computers [WANL-TME-1680] 16 µ2729 N68-28079 Aerodynamic analysis of high speed ground transportation system TRW-06818-6026-R000) Application of discrete or neutron and other transport [ORNL-RSIC-19] nes 5 sub a method to lations, conference 17 p2936 N68-29213 TRANSPORTATION NT AIR TRANSPORTATION
NT HIGHWAYS
NT RAIL TRANSPORTATION
NT ROADS 5 sub a discrete ordinat pplication to neutron radi ethod development and transport calculations 17 p2937 N68-29214 Comparison of radi of radiation transport data calculated by stes methods with measured fast neutron 17 p2937 N68-29217 Reusable orbital pass [NASA-TM-X-53595] Application of two dime ethod to NRX reactor radi mal S sub n transport Computer programs and network algorithms for olving minimal or maximal cost flow problem of trans-17 p2937 N68-29218 Discrete ordinates adjoint calculations of transport AD-6681741 17 p2937 N68-29219 ent ordinates method with straight ahead ap-tion used in high energy soutron transport cal-a for linear electron accelerator desire. Feasibility of NASA literature application to highway safety and transportation engineering [NASA-CR-95223] 16 p2799 N68-27724 Transportation in technically developed societies -approach to development of effective national trans-portation system lerator design 17 p2938 N68-29221 ery calculated and experimental transport igle dependent neutron spectra emergent ead and polyethylene slab shields Review and screening of defense and space oriented echnology applicable to urban transportation 17 p2938 N68-29222 PB-1782721 fect of input cross sections 17 p2938 N68-29223 Propulsion and braking of tubeflight vehicles [TR-AE-6708] 19 p3195 N68-31693 DTF-4 and GAMLEG codes for photon and neutron Defense and space original to fedure transportation 17 p2938 N68-29224 ble to future to [PB-178270] portation accidents and fires to complet standards or ackaging and safe transport of radioactive materials [EUR-3485.E.F. V. 3] ergy dependence of neutron capture, gamma ray action cross sections, and their utilization in S sub crete ordinates codes 17 p2938 N68-29225 ort theories in large aluation and testing of packagings for transport of active materials in accordance with applicable in-tional regulations 17 p2938 N68-29226 a of 5 mb a s n method to time dependent tion for pulsed neutron experiternational regulations (EUR-3485.E,F, V. 2)

17 p2939 N68-29229

rm methods applied to dion of monoenergetic

17 p2946 N68-29558

18 p3143 N68-30116

port equation used to on with matter 18 p3134 N68-30451

and volt-ampere

port vehicles TRW-06818-6009-R0001

NT CALIFORNIUM NT CALIFORNIUM ISOTOPES

19 p3311 N68-31578 20 p3555 N68-32708 21 p3742 N68-34461 22 p3934 N68-35772 04 p0476 N68-13209 unications terminal for 04 p0477 N68-13211 08 p1110 N68-17452 23 p3985 N68-36764 n of transportation and 05 p0762 N68-14618 osport system 09 p1431 N68-18662 15 p2433 N68-26430 17 p2991 N68-29529 19 p3388 N68-31690 i technologies transfera-19 p3389 N68-31723 TRANSVERSE WAVES
NT MILLIMETER WAVES
NT POLARIZED ELECTROMAGNETIC RADIATION 20 p3492 N68-33603 itial application of superconductive magnets to nagnetic suspension of high speed ground trans-NT POLARIZED LIGHT NT SYNCHROTRON RADIATION 23 p4149 N68-36247 NSURANIUM ELEMENTS verse rad [LPS-1] NT AMERICIUM NT AMERICIUM ISOTOPES NT AMERICIUM 241 NT BERKELIUM Traveling-wave power amplifier tube using transverse-wave interaction between negative synchronous wave and circuit wave [ECOM-0226-2] 03 p0328 N68-12005

CURIUM ISOTOPES
CURIUM 242
CURIUM 244
FERMIUM
LAWRENCIUM
MENDELEVIUM
NEPTUNIUM
NOBSEL BIM NT NOBELIUM
NT PLUTONIUM
NT PLUTONIUM SOTOPES
NT PLUTONIUM 238
NT PLUTONIUM 239
NT PLUTONIUM 240
NT PLUTONIUM 241 isotope identification of parison of element 104 wn transplutonium, and Continuous separation and iso transition elements, and compa-properties with hafnium, known [JINR-DC-3281] 05 p0626 N68-14600 Synthesis and chem ical identification of kurchatovi-05 p0628 N68-14786 Preparation, properties, and application possibilities of transplutonic elements [EUR-3893.D] 14 p2209 N68-24415 Chemical properties and synthesis of transuranium elements 14 p2303 N68-24607 Anion exchange for transplutonium elements and lanthanides in hydrochloric acid organic solvent mix-[ANL-7415] 15 p2416 N68-26420 Annotated bibliography on production and nuclear properties of transplutonium elements and chemistry, production, and nuclear and physical properties of [TID-3317] 16 p2614 N68-28141 Fission, absorption, and thermal neutron cross secm isotopes [BNL-12353] 16 p2731 N68-28166 Conference papers on synthesis and properties of [JINR-D7-3548] 19 p3319 N68-30864 Cyclotron developm of isotopes of transura research facility ent, alpha decay, and properties nium elements studied in Soviet 19 p3319 N68-30865 Radiochemical experim roperties of element 104 to determine chemical 19 p3218 N68-30866 Model studies and calculat ons for structures and 19 p3320 N68-30869 Optical anisotr (JINR-P2-3738) nium element nuclei 19 p3317 N68-31901 element 105 20 p3550 N68-33424 Alpha radioact [JINR-P7-3808] car fuel element analy-Spectroscopic irra for transuranium i burnup percentage 21 p3725 N68-34381 [EUR-3949.E] Paper chromatography and electrophoresis used in udy of thorium, protectinium, and transuranium ele-[CEA-R-3411] 22 p3828 N68-35651 Alpha decay of element 104 i [JINR-P7-3835] otope 260 23 p4127 N68-37018 Short lived isotope for element 104 expe [ANL-TRANS-632] ion methods developed 24 p4214 N68-37672 TRANSVERSE OSCILLATION
NT MILLIMETER WAVES
NT POLARIZED ELECTROMAGNETIC RADIA-TION
NT POLARIZED LIGHT
NT SYNCHROTRON RADIATION Oscillation damping of tall structures by hanging [NASA-TM-X-60522] 14 p2360 N68-25434 Transverse oscillation coupling for coherent radia-tion from intense electron beam 21 p3729 N68-33759

Collective approach technique to determine ther-sodynamics of N-perticle electron gas including trans-erse radiation.

02 p0251 N68-11093

INASA-Vibral degree vibration freedom [FTD-H Analy IECOM-TRAPEZO Positio groups o

> TRAPPED Plasm ble helix (NASA-Micro field dur [LRP-35

iem of space time di rons in infinite medius #1/68/15]

Space charge, characteristics in tr

[AFCRL 48-0149]

Linearized Boltz determine interaction [WAPD-TM-661]

EX

vi-

86

13

ım 07

nd ix-

20

41 c-

15

0

Refracted transverse and body waves used for deter-mining tectonic shear zones 06 p0835 N68-15379 Transverse edge effect in netohydrodynamic generators plane induction mag-07 p1057 N68-16290

ing gas jet generator for ustic modes 07 p0988 N68-16998 Performance tests of rotal introng traveling transverse ac [NASA-TN-D-4380] que propagation of high

Equations derived for obli-frequency radio waves in iono [WRE-TN-CPD/T/-135] 08 p1145 N68-17310

verse electric field fluc-interaction of longitu-Stationary spectrum of tran ations generated by nonline tuations generated by dinal waves in isotropi [LGI-67/19] 08 p1217 N68-17629

Transverse vibrations of circular cylinder on linear springs in steady fluid stream 10 p1602 N68-19694

First order spatial dispersions and acoustic activity of transverse acoustic waves in crystals [TR-15]

Development of traveling wave power amplifier tube with transverse wave interaction [REPT-8]

Finite element method for transverse vibrations of beams and plates [RR-56-8] 11 p1795 N68-21164

Interaction of transverse waves in waveguide with

Waves on rotating elect 16 p2633 N68-27199 Liquid jet stream breakup by transverse gas flow 16 p2645 N68-27583

Reflection coefficient of ground-plane mounted transverse electromagnetic mode parallel-plate waveguide illuminating comducting sheet (NASA-CR-66635) 16 p2625 N68-27899

Transverse diffusion and optical properties of con-fined barium plasma column [SIT-2813-44] 16 p2740 N68-28210 16 p2740 N68-28210

Attenuation of transverse opagating parallel to extern ultrasonic radiation nal magnetic fields in 17 p2956 N68-28628

ctions between rotating iting in oscillation and am-Transverse wave interactions and wave guides resulting

UTEC-MD-67-035] 17 p2862 N68-29279 Interpolation used to improons of two dimensional Lapla re finite difference solu ce equation, and deriva tion of TEM mode paran [WRE-TN-PAD-142] 17 p2865 N68-29299

between rotating elec-Transverse wave interact on beams and waveguides

18 p3130 N68-29937 Rotary polarization of tran optically active crystals erse acoustic waves in

18 p3123 N68-30252 Ritz method for solving problems on transverse vibrations on plane elastic plates, and tables on coeffi-cients of elasticity [NASA-TT-F-11376] 19 p3382 N68-31982

19 p3382 N68-31982 Interaction of tranverse jet injected into main super-

sonic stream [AFOSR-68-1419] 20 p3466 N68-33258 Dumping nonperiodic transvalar elastic plate with layer of rse vibration in rectan-

viscoelastic material 21 p3781 N68-33621 Stable Maxwellian plan ave modes, theoretical and experimental treatment [NASA-CR-96787]

21 p3749 N68-34367 Vibrations in turbomachinery, systems with one degree of freedom, critical rotor speed, transverse vibrations of rods, and systems with several degrees of

freedom [FTD-HT-23-527-67] 21 p3791 N68-34649 Analytic and experimental warractions with rotating electrons ork on waveguide wave interactions with rot (ECOM-01279-10) 24 p4303 N68-37971

TRAFFZOIDS

Position judgment accuracies of three perceiver groups of stationary targets of Ames trapezoid illusion 22 p3815 N68-35053

TRAFFED MAGNETIC FIELDS

Plasma injection into closed magnetic trap with dou-12 p1948 N68-22330 suring rotating magnetic

12 p1950 N68-22739 Transverse diffusion and optical properties of confined barium plasma column [SIT-2813-44] Trapped magnetic field system for high temperature plasma control and confinement [CTO-436] 17 p2951 N68-29293 17 p2951 N68-29293

Ginzburg-Landau free energy used to study trapped tagnetic flux interactions in superconductors 18 p3150 N68-29794

ma preheating in megajoule theta pinch device tic compression 20 p3559 N68-33372 for subsequent magnet (NASA-TN-D-4708)

TRAPPED PARTICLES

NT ARTIFICIAL RADIATION BELTS

NT INNER RADIATION BELT

NT MAGNETICALLY TRAPPED PARTICLES

NT OUTER RADIATION BELT

THEORY AND THE TRAPPED PARTICLES

T PROTON BELTS
T RADIATION BELTS

Trapped radiation detector developed for Mariner 5 (NASA-CR-89924)

01 p0137 N68-10080 Motion of single charged particles in trap with mag-etic mirrors and detection of nonadiabatic electron [UCRL-TRANS-1358] 07 p1044 N68-16513

electrons at low and high al-te and Explorer 26 satellite 08 p1234 N68-18182 Observations of trapped el titudes by 1963 38C satellite [NASA-TM-X-63121]

Index of magnetic act etic dimensions of mag [NASA-CR-93796] 10 p1524 N68-20343 Literature survey on Van Allen radiation belts (CEA-BIB-103) 11 p1779 N68-21177

es and infrared radiation stime Trapping propertie

bility of zinc sulp [ARL-67-0277] 11 p1776 N68-21775 Enhanced ion cyclotron radiation and effects of icrowave plasma heating on its stability and trapped ORL-70841] 17 p2950 N68-29073

Plasma flux measurements in vicinity of Venus by charged particle traps on Venera-4 spacecraft [NASA-CR-93835] 18 p3139 N68-29926

Temporal variations of 100 keV to 1700 keV trapped protons from data recorded by scintillation counter on Explorer 26 - Jan. 29, 1965 - June 29, 1965 (NASA-TM-X-63320) 21 p3761 N68-34039

TRAPPED RADIATION
U RADIATION BELTS

TRAPPING NT CRYOTRAPPING

Methyl iodide used for testing of charcoal bed of in-ulled fission product trapping plant TRG-1548/W/J 02 p0174 N68-11136

Migration and trapping of excitation quanta in hotosynthetic units 10 p1463 N68-19949

Acoustic self trapping of high power Q switchs pulsed laser beams [REPT.-9204] 13 p2079 N68-2391 13 p2079 N68-23912

m trapping in Astron ther-High vacuum bear conscient reactor (UCID-15305) 17 p2950 N68-29049

d vector couplings related to recom-complex atoms 18 p3162 N68-29844 Acoustoelectric effect, ultrasonic attenuation, and trapping in cadmium sulfide single crystals [COO-[112-157] 20 p3573 N68-33211

NT COLD TRAPS NT ION TRAPS (INSTRUMENTATION)

Field enhanced ionization of traps in cade fide cryst [TR-22] 10 p1580 N68-20230

TRAVELING SOLVENT METHOD

Solvant zone growth of single crystal silicon carbide [AFCRL-67-0509] 01 p0023 N68-1060 Growth of single crystals of silicon carbide by traveling solvent method (APCRL-68-0288) 20 p3508 N68-32294

TRAVELING WAVE AMPLIFIERS

[NASA-CR-93192]

Viscous fluid flow induced by sinusoidal traveling are motion of tube walls at moderate amplitudes of otion in two dimensional cases 02 p0198 N68-11332 ing wave tube amplifier design

Twenty watt traveling suitable for spacecraft appl [NASA-CR-66325] 05 p0638 N68-14636 Harmonic filter, electron gun, performance tests, nd design of traveling wave tube amplifier for space

08 pl 153 N68-17620

Low weight focusing design for traveling wave tube IECOM-02578-F) 10 p1506 N68-20252

ment of traveling wave power amplifier tube one wave interaction Development of trave 11 p1672 N68-21013

Traveling wave amplification by drifting curriers in [ECOM-2958] 20 p3449 N68-32434 TRAVELING WAVE MASERS

Microwave pump requirements for field operation roadband rutile traveling wave maser for Application (echnology Satellite program NASA-TN-D-4764) 21 p3699 N68-3363 21 p3699 N68-33635

Transverse oscillation coupling for coherent radia in from intense electron beam 21 p3729 N68-33759

TRAVELING WAVE MODULATION

Quantum theory of traveling wave modes for inter-nally modulated lasers 23 p4072 N68-36705

TRAVELING WAVE TUBES NT BACKWARD WAVE TUBES

Traveling-wave power ampliverse-wave interaction between wave and circuit wave [ECOM-0226-2] differ tube using trans in negative synchronou 03 p0328 N68-12005

03 m0329 N66-12638 Development of 100 watt S be and traveling wave tube

NASA-CR-914421 04 p0486 N68-12998

Single helix, focused trave spacecraft telemetry systems an 25 watts power at 2.3 GHz at or veling wave tube for ad capable of delivering overall efficiency of 42.2 NASA-CR-66522]

e tube amplifier design Twenty watt tra suitable for spaceers [NASA-CR-66525] 05 p0638 N68-14636

Textbook on truw [FTD-MT-65-453] 08 p1154 N68-18008

Low weight focus amplifiers [ECOM-02578-F] for traveling wave tube 10 p1506 N68-20252

Amplifier system design, on, installation, and maint d information for opera-unce of 5 hand 200 watt tion, installation, a TWT amplifier (SU-SEL-67-079)

11 p1674 N68-21506 Cyclotron wave a n using self good

RADC-TR-48-1081 14 p2229 N68-24395 erter storage tube in

Electron gun type sc SE90 waveform digitizer [SC-TM-67-2978] 14 p2230 N68-25052

17 p2838 N68-28486

Traveling wave high po (ECOM-0226-F) plitude tulie design 21 p3669 N68-34396 y of multiplier klystros

Output power as with traveling wave (FTD-MT-47-16) 22 p3846 N68-35292

teristics of 100 wast, 50 kg wave tube for space splications 23 p4031 N6B-36587 Design and operating or ercent efficient, S-band percent efficient, 3-6 communication and to [NASA-CR-97222]

ing gas jet generator for water modes 07 p0988 N&E-16998 (NASA-TN-D-4380)

10 p1494 NGE-19592

ce of tr FTD-MT-24-49-47 1 p1763 N68-21360 Nonstationary flow ock tube experiment o in travelle

16 p2646 N68-27 ncy of finite length mag-uve cylindrical accelera

18 p3055 N68-36 register in motion

19 p3313 NGB-31135

travelling ionospheric disturbances [AD-671061]

SUBJE

Trit

to op CRR Rad metas partic LA-J OF BAR Des reaction (COO Rai PR-6 and p Mo nuclei (AER Age sten-v Des CEA Chi and tr [JINE energ Ati molu ters (BNV He LA-(STI/ Sel tritiu [LA-TRITO (JIN (LY ILA trito copp value (BM

Pro

Tri

Cr

Su

C

De

TRIVA

Effect of N waves at oblique incidence on response of simply supported plate to transient loads [NASA-CR-[176] 20 p3604 N68-33168 Coupling between traveling acoustic waves and drift-ing electrons in piezoelectric semiconductors amplified 22 p3846 N68-34972 Feedback use in traveling wave superconducting (SLAC-PUB-437) 22 n3853 N68-35914 TREAT (TEST FACILITY)
U TRANSIENT REACTOR TEST FACILITY TREES [MATHEMATICS] Single tree-finding program for digital computer evaluation of topological formulas for network analysis [NASA-CR-93774] 17 p2865 N68-29357 Mean horizontal windspeed profiles within and above Japanese larch plantations [RR-395] 05 p0655 N68-14968 Visible and near infrared spectrometric tests of selected black and white film-filter combinations for descriminating between healthy and diseased Douglas fir trees [NASA-CR-93186] 08 p1126 N68-17378 Multispectral sensing techniques for ground and air-borne detection of Ponderosa pine trees under stress from insect or pathogenic organisms [NASA-CR-93173] 08 p1126 N68-17408 Boundary layer conditions, and tree number and pacing on drag forces within forest canopies in turbu-ent shear flow [CER67-68GH-JHN50] 15 p2455 N68-26715 Radioactive age determination of giant tree and ecular variation of atmosphere radiocarbon concen-INSJ-TR-104] 18 p3069 N68-30471 TRENDS ntor design trends 04 p0448 N68-13094 mic genera [FTD-HT-66-378] TRESCA FLOW ion of pinhole in rigid sk of nonuniform thickness [TR-17] 13 p2159 N68-23411 Structural analysis of plastic spherical sandwich shells under hydrostatic pressure 15 p2571 N68-26532 Equations for axially symmetric state of isotropic plantic material under Tresca strain 16 p2778 N68-27588 TRIANGLES Plate vibration analysis using finite element method with assumed stress distribution and triangular ele-08 p1249 N68-17520 Structural vibration analysis using triangular finite 08 p1249 N68-17521 TRIANGULAR WINGS U DELTA WINGS TRIANGULATION Optical triangulation method for determining lunar surface elevation relative to Surveyor spacecraft [NASA-CR-90512] 02 p0271 N68-11607 Light beam triangulation technique for atmospheric [NASA-CR-61191] 07 p0993 N68-17200 Visual factors affecting precision of coordinate mea-(AD-663821) 09 p1339 N68-18328 Strip, and block adj synthetic aerial triangula [PB-176461] ents by polynomials for tion photogrammetry 10 p1527 N68-19519 [NASA-CR-94140] 11 p1786 N68-21710 Triangulations of fixed points in plane 13 p2094 N68-23675 Comparative accuracy of two passive rangefinding [OEG-RC-80] 13 p2030 N68-24178 Basic principles of goodesy and goodetic surveying [AD-670156] 18 p3071 N68-30858 and for controlled analytical Horizon cam (PS-178030) 19 p3269 N68-31180

Simultaneous high frequency Doppler and ultrahigh frequency incoherent backscatter measurement of travelling ionospheric disturbances 19 p3272 N68-31673

CTO-453] TRICHLORIDES [EP-RR-16] [LGI-67/15] TRIGGERS NT TANGENTS metric functions for solving rate of apparent [NASA-TM-X-57246] 09 p1422 N68-18958

SUBJECT INDEX Simultaneity circle model for space triangulation and geodetic localization of satellites from nonsimultane-TRIGONOMETRY Apochromatization and trigonometric calculation of ray path in Cerenkov counters [JINR-P13-3488] 06 p0882 N68-16087 19 p3368 N68-32004 Approximation of orbital properties from multiple tellite distance measurements by tracking stations 19 p3369 N68-32011 TRIM [BALANCE]
U AERODYNAMIC BALANCE TRINITRO COMPOUNDS Analysis of performance of three station aferics posi-tion azimuth range spectrum analyzer network for de-tecting and tracking thunderstorm [AFCRL-68-0272] 20 p3523 N68-32820 Absorption and fluorescence of trinitrobenzene and initrofluorenone [TR-7] 01 p0025 N68-10832 Experimental investigation to determine effect of weighting of observed data on accuracy of aerotriangulation results [AD-672101] 21 p3688 N68-34720 TRINITROTOLUENE Shock tube performance tests of very long TNT explosive charges |SUFFIELD-MEMO-60/67| Optical theodolite T1 for angular measurements at triangulation points and for polygonometry [JPRS-46457] 22 p3881 N68-35974 14 p2297 N68-24664 Shock wave generated thermodynamic data for hydrocarbons, organic compounds, explosives, and other alloys and mixtures [UCRL-50108, V. 2, SUP. 1] Helicopter employment for geodetic surveys in remote and near inaccessible regions.
[ACIC-TC-1444] 24 p4251 N68-38021 15 p2565 N68-25693 TRIATOMIC MOLECULES Ideal gas, nitromethane, and TNT time dependent reaction zone calculations [LA-3764] Special properties of triatomic molecular hydrogen 23 p4013 N68-36975 18 p3132 N68-30266 TRINITROTRIAZOCYCLOHEXANE Existence and properties of triatomic molecular jets U RDX TRIODES [NP-TR-1637] 19 p3332 N68-31575 Static characteristics, power gain, no imittance, cross modulation, and Harmonic oscillator meta-vibration of bent triatomic molecule 21 p3647 N68-33696 admittance, cross modulation, and radio frequency power output tests of nuvistor triode [ECOM-2810] 01 p0037 N68-10517 Performance and service life tests conducted with 300-mWX band triode oscillators [ECOM-01795-6] 02 p0187 N68-11121 TRIAXIAL STRESSES Analysis of satellite perturbations induced by lunar ravitation and earth triaxiality DLR-FB-68-13] 14 p2345 N68-24799 DLR-FB-68-13] Triode sputtering techniques for fabrication of urani-m coated stainless steel neutron detector anodes BNWL-553] 07 p1003 N68-16630 U TRIAXIAL STRESSES [BNWL-553] Production, life tests, and evaluation of C band and X band dual function oscillators for lightweight radar [RCS-OSD-1366] 09 p1314 N68-18430 Light actuated trigger generator for synchronizing recorder with mechanical device [SCL-TN-67-42] 03 p0329 N68-12425 Design, construction, and performance evaluation of different triodes for 300 milliwatt X band triode oscilla-TRIGGER CIRCUITS (OR-71 10 p1506 N68-19960 Light actuated trigger generator for synchronizing recorder with mechanical device [SCL-TN-67-42] 03 p0329 N68-12425 Experimental design and construction of X band riode oscillator IOR-81 13 p2040 N68-23911 Short circuit current switching triggering for high voltage network 06 p0813 N68-15045 Life and performance tests at C and X bands on triode for dual function oscillators [RCS-OSD-1366] 15 p2437 N68-26479 Trigger mechanisms transctions linear capacitance of p-n junctions 06 p0817 N68-15258 ms based on LC circuits with non-Developments in triodes, diodes, magnetrons and vacuum tubes in U.S.S.R. 16 p2631 N68-27304 Simple thyristor circuits to pulse fire ignitrons for undred milliwatt X band triode oscillator 1795-9] 22 p3809 N68-35888 [ECOM-01795-9] 07 p0974 N68-16755 High surface gas triode for detecting atomic or Envelope, electrode, and trigger design for high voltnuclear particle [CEA-R-33191 age high current switc [NASA-CR-61519] 23 p4064 N68-37134 07 p0975 N68-17073 TRIPHENYLS Digital command system used as trigger circuit and me measuring instrument in plasma physics LGI-67/15] 10 pl 507 N68-20472 Photochemical behavior of triphenyl methane derivatives 02 p0178 N68-11873 Synchronizer for delayed trigger circuit of oscil-loscope sweep to study long series of nanosecond pul-Crystal structures of triphenyl aluminum und lead [IS-T-100] 10 p1484 N68-19926 [IFVE-SEF-67-12-K] 11 p1700 N68-21451 separation of hydrogenated Gas chromatographic New circuits for frequency dividers with variable terphenyls and analyses of component spectra [CONF-660553-5] 15 p2418 N68-26686 [FTD-HT-67-203] II p1674 N68-21580 Pressurized switching unit designed to start and to nowbur turbulence heating experiment PP-4/52] 20 p3449 N68-32431 TRIPLET EXCITATION U ATOMIC ENERGY LEVELS TRIPLET STATE ATOMIC ENERGY LEVELS Design analysis and operating characteristics of voltage step-down dc-to-dc regulated converter with hysteretic bistable trigger TRIPROPELLANTS **U LIQUID ROCKET PROPELLANTS** 24 p4199 N68-37510 TRITIUM [YALE-1957-111] thane and hydrogen 01 p0019 N68-10290 U ACTUATORS TRIGONOMETRIC FUNCTIONS Techniques for tritium removal from gas mixtures [MLM-1389] 03 p0316 N68-12630 Uniqueness of expan methods of summation ion in trigonometric series for Molecular physical properties of deuterium and triti-um in gaseous, liquid, and solid phases [CEA-BIB-87] 04 p0551 N68-13802 06 p0861 N68-15278 DuBois-Reymond theorem for generalized integrals and trigonometric series summable by Abel-Poisson method Life tests on titanium tritide and erbium tritide tar-asts bombarded with deuterium ions [AWRE-O-52/67] 05 p0710 N68-14339

06 p0862 N68-15429

Comparison of proton-tritium, and proton-helium 3 reactions with nitrogen 15, and carbon 13 targets [UCRL-17790] 05 p0717 N68-14720

INDEX ulation of 68-16087 8-10832 TNT ex. 8-24664 data for 8-25693 pendent 8-36975 e, input -10517 ed with -11121 f urani--16630

nd and -18430 tion of 19960 band 23911 nds on

26479 s and 27304 35888 tic or 37134

thane 1873 lead 9926 nuted 6686

tar-1339 m 3 720 SUBJECT INDEX Self diffusion of tritium, parallel and perpendicular to optical axis of natural and artificially grown ice (CRREL-RR-232) 06 p0880 N68-13495 Radiofrequency spin filter theory and selection of metastable hydrogen, deuterium, or tritium atoms with particular nuclear spin polarization (LA-3725) 07 p1039 N68-16190 Tritium ions, and electrical discharges for labeling organic compoun (FUR-3731,F) 07 ±0960 N68-17129 Deuterium and tritium effects on rates of organic rescrioss (COO-1008-3) 09 p1297 N68-18967 Raimout of radioactivity in Illinois (PR-6) 09 p1335 N68-18996 Methods, equipment, and and protection against tritiu [CEA-R-3350] ent, and calculations for detection 12 p1830 N68-22876 Monitor equipment for tritiated water in air of suclear reactor installation
[AERE-M-1929] 13 p2068 N68-23707 Ages for D-D and D-T neutrons in water and tung-(NASA-TN-D-4581) 14 p2292 N68-25058 Decontamination tests on tritium contaminated thin stainless steel slabs [CEA-R-3312] 14 p2316 N68-25307 Charge distribu and tritium nuclei (JINR-P2-3705) tion radii of odd nucleons in helium 3 14 p2318 N68-25398 Recoil technique for reacti with methane and hydrogen ons of hot tritium atoms 18 p3128 N68-29779 Production of tritium from helium irradiated by high energy protons 20 p3540 N68-32254 Atmospheric tritism effects on photographic, ther-oluminescent, and radiophotoluminescent dosime-(BNWL-SA-1569) 20 p3413 N68-33498 Carbon 14/proton, alpha/boron 13 reaction at bom-barding energies from 2 to 3.6 MeV, and tritium titani-um target degradation 21 p3733 N68-33693

Helium 3-tritium and helium 3-helium 3 reactions [UCRL-18263] 21 p3741 N68-34343 Liquid tritium to produce He-H molecular com-plexes
[LA-3956-MS] 21 p3654 N68-34653 21 p3654 N68-34653 nmental isotopes in ications

Tritium and other environmental inotopes is meteorology and hydrology applications [STI/DOC-10/73] 23 p4056 N68-36779 Selective collector for tritiated water vapor from tritium atmosphere using bubbling [LA-3916] 24 p4209 N68-38460 TRITONS Cross sections for neutron scattering by helium 3 and

(INFN/BE-67/1) 02 p0246 N68-11523 Reduced cluster widths for nitrogen 14 and nitrogen IINR.P4.36811 12 p1935 N68-22698 Survey on neutron-alpha particle, neutron-proton, rutron-deuteron, and neutron-tritium reactions NYO-1082-10] 13 p2114 N68-23232 INYO-1082-101

Neutron bombardment of tritium target and analysis on emission of protons, deuterons, and tritons
16 p2719 N68-27163 Elastic scattering of tritons by oxygen at various an-JINR-P15-3756] 16 p2730 N68-28122 Comparative study of angular distributions of /d, He 3/ and /d, U (LYCEN-6789) 17 p2940 N68-29292 17 p2940 N68-29292

Deuteron-triton fusion reaction over deformed Maxwellian distriction (FOA-4-4360-25) tion rates using averages ibutions 21 p3743 N68-34482 Triton-proton reactions of zirconium and tin isotopes

23 p4113 N68-36138 Excitation energies and spectroscopic factors from triton-alpha particle nuclear reactions of zine 64 to copper 63, ainc 66 to copper 65, and chromium 50 to (BMWF-FBK-67-75) 23 p4130 N68-37101

TRIVALENT IONS Oxidizing potential of trivalent and tetravalent ceri-um in solvent nitric acid, water, and tributyl phosphate 06 p0794 N68-15961

inefficiency of triplet energy transfer from ketones to trivalent rare earth loss [AD-673073] 22 p3826 N68-35422 22 p3826 N68-35422 Infrared adsorption lines in rutile result from proton or deuteron trapped near cation of valence 3 [COG-1434-04] 23 p4156 N68-37126

TROPICAL METEOROLOGY oscale studies of instability patterns and winds in

ECOM-00443-F] 02 p0232 N68-11518 Tropical meteorological data catalog, including wind irections and speeds, mointure parameters, and rainfall data (NCAR-TN-351

09 p1370 N68-19166 en cloud putterns and (ARA-9G37-F) 10 p1551 N6E-19508

Conference proceedings on tropical, local, small scale meteorological phenomena, specifically exciteding hurricanes and typhoons [ML-48063] 12 p1900 N68-21966 Global obser tropical disturbances and

REPT.-114) 13 p2099 N68-23661 Summary data on tropical cyclones in northern Aus-

20 p3525 N68-33552 Evaluation of shipping and transportation, site operations, air operations, and government coordinates too during Line Islands experiment to collect tropical meteorological data (PinCAR-TN-30) 21 p3684 N68-33934

Hurricane and tropical storm climatology including echanics of formation, frequency, motion, and struc-23 p4094 N68-36491

TROPICAL REGIONS Finishing systems for corrosion resistance protection of aluminum and magnesium materials in tropical en-(CCL-233) 02 p0221 N68-11429 Corrotion of nickel and nickel-copper alloys in tropical environments 04 p0519 N68-12867 RL-65921 Microclimatic data on Panama Canal Zime and vicinity -September 1967 [AD-669394]

Stratospheric wind observations in tropics [ECOM-2960] 19 p3304 N68-31470

Climatological data on Cambodia (AD-670353) 19 µ3305 N68-31953 Atmospheric circulation in tropical regions in low 20 p3519 N68-32469

(SAR-9) 22 p3835 N68-35454 nestal data facility and instrumentation for ical studies in tropical regions 24 p4283 N68-38177

le radiation pottern measurements of high field antennas in Thailand tropical forest 39] 24 p4230 N68-38471

NT HURRICANES NT TYPHOONS

recenting extratropical onshore gales at Virginia (W-50) 03 p0365 N68-12601 Relationship between tangential wind field and transverse circulations of tropical cyclones [HIG-66-22] 03 p0366 N68-12706

d dissipation processes of cirrus canopy in tropical storms [ARA-9G31-F] 03 p0366 N68-12762

Radar hurricane research, and tropical storm effects on radio wave propagation [ML-67291] 07 p1017 N68-16340 Synoptic analysis of two Caribbean tropics disturbances [IERTM-NHRL-78] 07 p1018 N68-16728

Numerical analysis of vector motion in severe tropi-cal cycloses for predicting burricase and typhoon movements [PR-1] 08 pt197 N68-17940

Predictions of tropical cyclone development based on Nimbus 2 high resolution infrared radiometer mea-surements, and ESSA 3 photographic observations of 1966 typhoen (NASA-TM-X-43197) 13 p2098 N68-23592

Movement and intensity predictions from wind and pressure fields for tropical storms in Indian Ocean (EDS-4) 15 p2497 N48-26468 Tropical cyclones in nort Australian regions

Summary data on tropical cyclones in northern Austrian regions 20 p3525 N68-33552

Linear model of large scale tropical disturbances in-cluding sentinear advective terms, know offects of earth rotation, and disbatic processes 24 p4280 N68-37891

TROPICS
U TROPICAL REGIONS

U GEOTROPISM U GYROTROPISM U NEUROTROPISM

TROPOPAUSE

Climatology, and estima derstorm penetrations of trop [AFCRL-67-0471] 04 p0532 N68-13072 Mathematical prediction of oscillations of

FTD-MT-24-373-671 24 p4252 N68-38052 NT TROPOPALISE

ng tropospheric vertical tem-AFCRL-67-0548] 05 p0652 N68-14441 Twenty-seven day solar cycle on tropospheric tens-

06 p0837 N68-15407 Synoptic measurement of wind structure in upper troposphere and lower strateghers of herricanes (IERTM-NHRL-79) 07 p1019 N68-16835

Infrared interferometer spectrometer techniques for staining data on vertical humidity profiles in trans-08 p1174 N68-18097

Radar observations on tropospheric cloud comp m, and distribution over United States of America 09 p1338 N66-194

Long wave radiati-al prediction model (NPS-S1DD0011A) 13 p2098 N68-23204 of particle dispersion in sion processes in tropo-see and diffesion 13 p2065 N68-24326 Kinematics and dy

COO-1585-3 Relationship between certain parameters of tropo-shere and ionosphere, and variations of solar wind NASA-CR-956981

17 p2530 N68-29268 magnetosphere, tropo-Solar activity off phore, and strainmak NASA-CR-95701) 17 p2880 N68-29396

reasurements of tropospheric RTS-4693] 20 p3469 7668-32537

Preliminary study of general circulation in upper oposphere and lower and middle stratosphere over east Asia (EMM-66-142) 20 p3524 N68-33013 m at 500 mb ever

20 p3525 N68-33518 Correlat 500 mb [M-7373] as for wind field at

20 p3525 N48-33520

22 p3903 N6B-35249 here wind flow using RR-TR-67-141 22 p3870 N68-35331

opeopheric turbulence 23 p4057 N68-37072

Synoptic-prographic distribution of tropospheric all and warm air fronts and resulting promet level course changes in Northern Hemispheric 24 p.222 1468-38147

TROPOSPHIERIC RAMATION
Radiotive host budget of tro [A2] 00 p1370 1668-19460

Equivalent temperature values (value temperature)
or describing temperature and immediate observations for properties placements, and terrorists
success of resident energy 17 p2880 NGS-29105

PRIESC SCATTERING

Mode theory methods of tropospheric redirence AC 0-47-0113 01 p0029 N68-10321

SUBJ

Tu

[AAI

2400 [ANI

(NAS

CU-

Pre of re

INAS

Tur perati profil NAS

Va field i

Ter of cyl mal

(NAS

energ

Adi

Ext functi oxide [ECC

Re 186 [NA

Oxi sten-s by ho [NAS

Cre

10 pe

BM-

03 p0313 N68-12418

ated single crystal tung-ardment 03 p0399 N68-12785

Analytic model of thermal flow oscillations in heat exchangers for supercritical fluids [NASA-CR-61745] 13 p2167 N68-23231 rgy as tools for designing opt h performance structures minimication system simulator for ction of tropospheric hop dynamic high performance s (NASA-CR-1038) 13 p2159 N68-23399 fading and multipat [CSI-67-TR-2437] 01 p0046 N68-10570 ty analysis of two dime it transfer loop 13 p2169 N68-23657 High pressure str [AERE-R-5145] sional truss and frame structs [AFFDL-TR-68-38] logical experiment to measure ray oposphere by means of vertical inter-22 p3973 N68-35488 Predicting heat tras passages of Nerva and P [NASA-TM-X-52437] pefficients in cooling 2 rocket norzles 13 p2171 N68-23862 **TSR-2 AIRCRAFT** [MTR-118, V. 1] 02 p0180 N68-11287 Pilot response during TSR-2 aircraft flights through Noise-power-ratio measurements to obta-ion data for evaluating path role in interelectroplating tank by heat [ARC-CP-997] 23 p4004 N68-37139 exchanger [WVT-6806] 13 p2171 N68-23907 distortion of tropospheric scal [ESSA-TR-IER-41-ITSA-41] TU-124 AIRCRAFT Thermal hydraulic heat exchanger for sod (UNC-5200) 06 p0797 N68-15300 Noise reduction during takeoff and landing of Tu-124 aircraft [NASA-TT-F-11557] 16 p2590 N68-28020 d reactor plant 14 p2295 N68-25275 Effect of troposcatter r speed digital data signal tras [DC-66-5] lia on analog and high for forced flow single 08 pl 149 N68-18055 Frequency response as tube boiler containing Fre [NASA-TM-X-60523] TUBE ANODES Design and de tungsten filament [AD-660033] nt of ultra linear thoristed and detection 14 p2193 N68-25280 techniques for tropos (C&S-68-TR-2623) flash evaporator used in 15 p2427 N68-26369 02 p0188 N68-11245 elope, electrode, loss at C band and trigger design for high volt-15 p2482 N68-25971 age high current swit [NASA-CR-61519] Optimal control tubular schange models 16 p2796 N68-27834 18 p3069 N68-30615 07 p0975 N68-17073 Anode material b ed by field emir nal control of unsteady and heat exchangers 18 p3113 N68-29759 Mathematical model for op-state plug flow tubular reaction tropospheric propaga-with aircraft operating on at very high freq 09 pl313 N68-18345 [NA-68-10] 19 p3242 N68-31724 Surface properties effect on anode erosion in electric Single tube-in-shell water-boiling heat exchanger erformance with helical wire insert and flow stabiliz-TROPOSPHERIC WAVES [ARL-68-0069] 20 p3449 N68-32465 Absorption effects of tropos ing devices [NASA-TN-D-4767] TUBE CATHODES

NT COLD CATHODE TUBES

NT HOT CATHODES

NT PHOTOGATHODES

NT PHOTOGATHODES

NT PHOTOGULTIPLIER TUBES

NT PHOTOGUCTORES

NT PHOTOGUCTORES 19 p3387 N68-32099 17 p2852 N68-29106 Refractive index structure opagation of VHF-UHF waves and tropospheric ing partial differential simulation of single tube 24 p4225 N68-37830 heat exchanger (RISO-M-736) 21 p3791 N68-33626 TROUBLESHOOTING U MAINTENANCE Transient and steady state fluid flow and conductive eat transfer analysis for tube heat exchangers using THERMIONIC CATHODES NT TUNNEL CATHODES TRUCKS . TRACK computer program
[WANL-TME-1736] surface to determ Develo status and feasibility of battery 22 p3912 N68-35916 powered vehic [PB-174982] 02 p0188 N68-11220 TUBES 06 p0850 N68-15499 es for studying ion beams of operating Design and destungation filament: [AD-660033] ultra linear thoristed Techn Fuel cell-battery hybrid power source for electric neutron tubes [R-68-ND-11] 20 p3456 N68-32952 [AD-662235] UZ p0188 N68-11245 06 p0768 N68-15525 TUBING U PIPES (TUBES) Extended area tungst inction formed by reac kide on base metal at ele cathode with low work tungsten with strontium Fuel cell-battery hybrid power source for automo-TUMBLING MOTION [AD-662236] 06 p0769 N68-15641 oxide on base met (ECOM-0381-1) emperatures 09 p1405 N68-13311 Surface roughness effects on fall pattern of cylinders and disks in viscous fluids Design and testing of fuel cell-electric propulsion system for cargo truck [REPT-1921] 13 p2143 N68-23223 ed meta bility of la 20 p3459 N68-32339 of iron and copper h [NASA-CR-94391] fe gas discharge tubes 12 p1884 N68-22913 TRUNCATION (MATHEMATICS)
U APPROXIMATION after space tumbling 20 p3406 N68-32800 [SAM-TR-68-32] lary planar cathode for nt of n U CANCER WF-FB-W-68-40) TRUNCATION ERRORS 22 p3849 N68-35829 d upon dependent varia merical integrati TUNERS NT WAVEGUIDE TUNERS [NASA-CR-97322] 24 p4200 N68-38001 (R67SD52) 02 p0230 N68-11655 TUBE GRIDS tor methods, and ex-Vapor depo (S-1075) n of materials for electron tubes 21 p3670 N68-34605 tronically tunable [HDL-TR-1359] 06 p0814 N68-15181 SDC-SP-2961/000/00) Development of metal capillary planar cathode for grid controlled tubes
[BMWF-FB-W-68-40] 22 p3849 N68-35829 Thermal control, tunin hydrogen maser for time as [NASA-TM-X-63223] and design of atomic frequency standards 15 p2477 N68-25753 04 p0529 N68-13269 ignal with limited spectrum truncated by Ketch [NASA-CR-92569] Microelectronic electronically tuned receiver tuner for determining feasibility of thin film microelectronics [AGC-1166-01-3] 18 p3037 N68-30478 **TUBE HEAT EXCHANGERS** 06 p0798 N68-15370 Cryogenic tests on Teflon tube heat exchanger [LA-DC-9659] 02 p0283 N68-11536 Error bo (TR-450) TUNGSTATES

NT CALCIUM TUNGSTATES 09 p1359 N68-18510 Heat pipe operating principles and performance Kutta methods derived for ordinary differential equa-SC-TM-66-26321 03 p0426 N68-12363 Strontium tungstate mixed crystal cuthodes [ECOM-0381-F] 16 p2631 N68-27151 ne best working Heat pipe design analysis fluids and capillary material [TRW-99900-61[4-R000] 11 p1726 N68-20804 TUNGSTEN [AD-645764] cture and electrical properties of single enum and tungsten ribbons 04 p0593 N68-12857 crystal molybde [COO-1417-3] 01 p0123 N68-10442 s on tube wall of TR-5381 11 p1730 N68-21375 heut exchanger [NEL-272] nique for studying Debye-Waller facrolations of odd degree spaced joints 22 p3902 N68-35793 05 p0757 N68-14715 tor of tungsten microcrysta (SGAE-M-9/1967) 01 p0124 N68-10505 Data sheets for surface tension, vapor pressure, vapor density, and viscosity of fiquid metals used in heat pipes [EUR-3653.E] O5 p0757 N68-14750 Mechanical behavior or of ch emically vapor deposited tungsten at elev (ORNL-4162) 01 p0079 N68-10989 Field electron emission d tion of tungsten /211/ plane [AD-660210] 22 p3937 N68-35865 of high order with stepsize truncation error term 23 p4089 N68-36753 Rompe-Kotta formulas of control (brough leading trus-[NASA-TR-E-287] LA-3798] 07 p1095 N68-16650 02 p0258 N68-11256 Aluminum, petassium, used in tungsten filaments improve lighting effects, ar Heat transfer me and mass flow densi in [40 to 250 bar ra [EUR-3658.D] nd silicon trace elements increase crystal structure, extend metal lifetime 02 p0222 N68-11604 TELNIKS (LINES)

U TRANSMISSION LINES 07 p1096 N68-16697 U SHAFTS (MACHINE ELEMENTS) NASA-CR-93664 09 p1278 N68-19392 (UCRL-50209) 03 p0351 N68-12242 Theoretical and exp determination of heat apaces between pipes Spectrochemical determination of impurities in tungstartic imperfect simple act of geometrical imper (JUL-506-Rb)

11 p1804 N68-21236

of finite homogeneous turbulent tube flow 13 p2166 N68-23192

[K-1683]

sten ribbon under pro (SC-DC-66-1559)

m of fi

(TB-5)

04 p0588 N68-13290

DEX

23231

23657

3862

heat

13907

ce of

5275

single

5280

ed in

5971

7834

9759

bile.

2099

3626

5916

2952

1339

inc-

181

753

151

fac-

505

989

256

504

142

10

118

Tungsten pickup during inert gas welding of alu-03 p0348 N68-12804 [AAEC/TM-361] ermodynamic properties of tungsten from zero to 2400 deg C [ANL-TRANS-452] 04 p0594 N68-13057 Microbend tester and heat-treating apparatus development for study of high temperature protective coatings for refractory metals [NASA-CR-91539] 04 p0522 N68-13737

X ray diffraction analyses on shock compressed silicates, and mixtures of iron-tungsten and tungsten-car-bon powders

04 p0523 N68-13800 juinoline complexes of trace elements during solvent extraction from tungsten solvitions (BM-R1-7072) 05 p0624 NA8-14444

Brief account of field ion microscopic studies of setal radiation damage correlated with mechanical

CU-3551-9] 05 p0677 N68-14596 Pressure dependence of tensile stress-strain behavior of recrystallized powder metallurgy tungstes at environmental pressures of 11 kilobars [NASA-CR-92392] 06 p0836 N68-15715

Tungsten-stainless steel sensor for averaging tem-erature measurement of nonuniform temperature NASA-TN-D-42421 06 p0847 N68-15936

Vacancy removal in irrac lated tungsten studied with (CU-3551-8) 07 p1006 N68-16128

Temperature distributions measured on top surface of cylindrical specimens for determining effective ther-mal conductivity of solid and porous tungsten in vacuum and hydroge [NASA-CR-54429] 07 p1095 N68-16628

Work functions and adsorption of cesium fluoride on 07 p1067 N68-16761

Probe field emission studies of work function and energy distribution of cesium-oxygen-tungsten system 07 p1067 N68-16762

rption of mercury on clean and 07 p1067 N68-16763

ts in copper and tungsten f defect metal lattices 07 p1010 N68-17181 [NYO-3653-2]

and solution of nitrogen in m by mass spectroscopic and

[WERL-2823-28] 08 pl139 N68-17328 mass spectroscopic ogen behavior in tung-

ERL-2823-271 08 p1139 N68-17335

Extended area tungstate cathode with low work function formed by reacting tungsten with strontium oxide on base metal at elevated temperatures [ECOM-0381-1] 09 p1405 N68-18311 Resonance integral and Doppler effects in tungsten

09 p1381 N68-18481 [NAA-SR-12500] Oxide deformation and fiber rei on-urania and tungsten-zirconia reinforcement in tung-in elongated into fibers

by hot extrusion [NASA-TN-D-4475] 09 p1352 N68-18610 Creep rupture properties of 10 percent W, and T-111 alloy [ORNL-TM-1994] unalloyed tantalum, Ta-

09 p1353 N68-18874 of 5/6 and 5/7 ring or-

09 p1300 N68-19384 Chemisorption and surface id ethylene on tungsten surfa-on emission microscopy reactions of acetylene ces studied by field elec-

10 p1488 N68-20103 chanical properties of

(BM-RE-7118) 10 p1491 N68-20221 Electrical properties of taille sodium tungsten

11 p1767 N68-20671 itus for secondary elec-ow primary energies 11 p1767 N68-20672

ment, thermoelectri nd compounds, super nd gas pump bessed o Thermal diffusivity a reperties of graphite al unductivity in tungsten 11 p1802 N69-21036 tantalum, and molybden [25-T-113] 11 p1650 N68-21068

nents of tungaten water moderated nucl (NASA-TM-X-1568) engines 11 p1740 N68-21111

Structure of epitaxial finergy electron diffraction surface layers with low d tungsten single crystal INASA-CR-94082] 11 p1772 N68-21292

on plane surfaces of tang-11 p1763 N68-21356

Applications of Me resonance absorption [NASA-TN-D-4345] lo analysis to tungsten 12 p1903 N64-21924

12 p1953 N68-22119

on nickel surface, am-lace, and work function Hydrogen and oxygen effects onia catalysis on tungsten surf neasurements on tungs [NASA-CR-94332] al planes 12 p1886 N68-22201 velocities of tung

as function of temperatu [ANL-7272] 12 p1889 N68-22559 m of tungsten and tungsten

(ORNL-4216) 12 p1889 N68-22562 of impurities in molyb-Neutron activation analys denum, tungsten, and graphic [CEA-R-3267]

12 p1841 N68-22997 ics of variable spaced sten emitter and niobi-Current-voltage character termionic converter with to

NASA-CR-10331 13 p1995 N68-23476 Surface interaction [REPT.-67-C-338] vapor with tungsten 13 p2019 N68-23919

m oxides and tung 14 p2370 N68-24750

Ages for D-D and D-T ner sten-water mixtures [NASA-TN-D-4581] ons in water and tung-14 p2292 N68-25058

Fermi surface of tung 14 p2332 N68-25149

Influence of adsorbed a from exploding tungsten w [UUIP-362] on emission of X rays vacuum 15 p2509 N68-26435

of atoms sputtered from tury ions 15 p2540 N68-26480 Spectral energy distribution tungsten single crystal by n [FTD-HT-67-193]

Shot noise fluctuations sion of magnesium as polycrystalline tungsten edary electron emi

15 p2541 N68-26595 Cavitation corrosion of steels and tungsten subjected to vibration tests [NIC-TRANS-2582] 16 p2675 N68-27180

Fluorine and oxygen effects on work function of polycrystalline tungsten [NASA-CR-85160] 16 p2743 N68-27389 16 p2743 N68-27389

High temperature p tantalum, niobium, mo [NASA-CR-95569] e coatings of iridium on am, and lungsten 17 p2900 N62-28655

Neutron irradiati on embrittlement of 17 p2900 N68-28818

moxide from tungon impact 17 p2930 N68-28863

Electron diffraction for crystallographic data on vacancy dislocation loops formed in assessing of seutron irradiated tungsten [OEMP-594] 17 p2901 N68-29231

al orientation, texture tropy of Rockwell hard nation, and plastic anisot destations in T and Mo o 18 p3152 N68-29976

[NASA-TN-D-4725] 18 p3093 N68-30504

18 p3155 Nee-30532 [BNL-11594]

High temperature tung fabricated and tested for r (ALO-3634-8) 18 p.3006 N64-30677 of electronic K X ray ad tungsten 19 p3325 N68-31142 er technique for studying micleur hyperfine is in platinum 195, tungenen 182, and tung-

19 p3326 N68-31152 of tantalum carbide as conius, and habite ungaten with ti nitrides WRE-CPD-141]

19 p3223 N68-31200 a for cesium thermiunic paten electrodes 19 p3341 N68-31640 Emitter and collect diodes with polycryst NASA-TN-D-47441

walled tungsten tubing 20 p3488 N68-32977

ements on tangeten [NASA-CR-1154] 20 p3531 N64-32983 scattered electrons in

tungsten at low energ [NASA-CR-96376] 20 p3548 N68-33221 of various guess on in vacuum 20 p3490 N68-33227 Influence of chemisors adhesion and friction of to [NASA-TN-D-4694]

eron triiodide on of be 21 p3649 N68-33956

Measurements of particle emission produced by in-raction of high power laser radiation with tungsten

AD-6720931 21 p3701 N68-34718 a and tungsten cermet Impact test results for nuclear fuel elem [SC-DR-68-295]

roups of tungsten field Structures of bright in COO-1198-5181

ining metallic and in-Analytical methods for determining metallic and in-erstitial impurities in high purity tungston BM-IC-8397] 22 p3819 N68-34832

Description of carbo ide in tungston by elec-

interactions of sentres 23 p4118 N68-36633 TUNGSTEN ALLOYS

ion of A15-type stree

01 p0076 N68-10596 (ORNL-TM-1888) ples for machine reactor tempera (CEA-R-3182) 03 p0344 N68-12648

rements of carbide layers on tantah tengeten alloys 05 p0676 N68-14543

dable and ductile Mo. and extrusions of Wat

06 p0853 N68-15355

of p0854 N68-15362 at offices on high to NASA-TN-D-4379) 08 p1184 NGS-17317

12 p1873 N68-22383 NASA-TT-F-11623

alloy tubing 12 p1889 1968-22562

NASA-TN-D-45671 14 p2200 N66-34477

of areal control offi 17 p2900 NAS-200

on TEM and make

BM-R1-71491 18 p3093 HER-30467 spectics of ten 18 p3094 NGB-3

IT pall to hand he

Inter

Axia

Asyn

Surfi

FTD-

Airc

Turt

NT

Sele

COTTO

HT-6

Mac

of turb

Det

Per

IFTD

tion s

Mic field

ARL

UCF

Ma

Por

friction

NAS

nurfa [NAS

Scale [NA

D

INA

Di

C

Pirst (NA

estigation of mechanisms of defor-d brittle fracture of chromium-iron m alloy systems 20 p3507 Ne8-33600 and tungsten-shemium a [RTS-4399] funed receiver [REPT.-1166-01-2] 11 p1674 N68-21502 Bird voices and reing in helium-air mixtechnetium 22 p3893 N68-36001 Fabrication to 13 p1997 N68-23080 sten-technetium alle [NASA-CR-97099] [ECOM-2908] nal conductivity of W-26Re [GEMP-562] 23 p4153 N68-36814 two optical frequency signs and magnetic tuning TUNGSTEN CARRIDES d horon, tit **TUNING FORK GYROSCOPES** 02 p0216 N68-11376 Floquet theorem for dete tuning fork gyroscope [RAE-TR-66198] Growth of tungsten mustified Crochralski m [COO-1198-501] ocrystals using 12 p1956 N68-22659 Solid state phase equitide allows in cobalt tungsten car-22 p3887 N68-34849 Chemical diffusion of car sten, and chromium carbides [LA-3795-MS] n in molybdenum, tung-22 p3829 N68-35754 TUNGSTEN CHLORIDES REPT.-74] Conversion of tungste achloride by chlorimatio [BM-RI-7132] le to tungsten hex-14 p2214 N68-24751 TUNGSTEN COMPOUNDS NT CALCIUM TUNGSTATES TUNNEL CATHODES Comparison of con-low cathode low press [AFAPL-TR-67-63] NT SCHEELITE NT TUNGSTATES Tungsten compounds used as liquid absorbers in continuer transmission experiments Electron temp [SR-1] 03 p0314 N68-12471 (ISL-T-19/66) powder on tragsten foil n in radioisotope power film tunnel cathodes [NASA-CR-66617] (TE-4059-77-48) 09 p1348 N68-19052 Tungsten and the sion stability in beryfii-TUNNEL DIODES (TR-0158/3250-10/-9) 10 p1539 N68-19998 Reinforcing tur loys to attain el s applied to metals and sture strength and cor-Operating character (BM-RJ-7130) (FTD-HT-67-38) 13 p2086 N68-24250 Tin tunnel diodes evapora crystal for quantum genera phonons in superconductors re of Mo, Cr, Re, Mn, azide ion 18 p3021 N68-29934 sten compounds and paric semiconductors Current-voltage char iunctions in semicondi NASA-TN-D-44031 [AROD-3783-4-C] 19 p3223 N68-31125 TUNGSTEN PLUORIDES Theory of electron tran Pyrolytic tungsten depo drogen/tunesten fluoride and flow rates, and for mandrel sizes and Electroforming of tunnel rectifying properties of galliu [FTD-MT-66-90] [OKNL-TM-2074] 12 p1892 N68-22956 curves for tungsten and s in uranium hexafluoride, ing solutes in uranium hex-Triple point depressionlybdenum hexafluorid Thin film widels 1 ar theory of some tri 15 p2405 N68-25890 [K-1697] port through chemi-NASA-CR-971181 23 p4099 N68-36100 TUNGSTEN HALIDES Caleria saly in galli 13 p2020 N68-24069 TUNGSTEN INERT GAS WELDING U GAS TUNGSTEN ARC WELDING NT SCHEELITE (FTD-MT-47-05) diding allows e-streams dis-(NASA-TN-D-4279) 05 p0697 N68-14986 Tunnel and avalar ctive reflector opti se cross section of a pten trioxide analyzed eg to 900 deg C 06 p0787 N68-15415 ADC-TR-48-11) (SC-TM-47-712) og fork evaluation 03 p0385 N68-12761 (SU-SEL-68-033) TUNNEL RESISTORS

U ELECTRON TUNNELING

U RESISTORS TUNNELING 07 p1001 N68-17208 des for airfoil com cting Jose

06 p1247 N68-17505

ave filter 19 p3253 N68-31618 es of gas laser amplifier with nals of arbitrary polarization 24 p4264 N68-37486 g motion stability of 08 p1192 N68-17290 for set of linear dif-08 p1209 N68-17515 Factors affecting stability, service life, effective gnal, and interferences in tuning fork gyrotron 14 p2286 N68-24636 ring rotary velocity 19 p3308 N68-31782 I hollow and coaxial hol-01 p0120 N68-10945 ts for calibrating 07 p1093 N68-16155 of deterioration in thin 15 p2436 N68-25757 Statistics of switching time jitter for tunnel diode threshold crossing detector [NASA-CR-90306] 02 p0190 N68-11039 tics of two pulse counters using 03 p0329 N68-12657 erated on sapphire single 05 p0728 N68-14457 tics of tunneling p-n 09 p1315 N68-19062 port processes in tunnel 11 p1771 N68-20848 des and rectifiers, and menide point contact 11 p1674 N68-21643 de ampliner 13 p2040 N68-23677 er and tunnel diode 16 p2634 N68-27627 16 p2745 N68-27830 mide tunnel diode 17 p2861 N68-28764 tics of electric relay, com-sistor, acting as switching 17 p2862 N68-29072 18 p3046 N68-30104 mplifiers considered in dy to increase scatter-20 p3437 N68-32633 investigation of a tun-24 p4236 N68-37981 Current flu 05 p0636 N68-14454

though model of microelectronic electr

SUBJECT INDEX Josephson effect in tunnel junctions and point con-tacts to maintain reference standards of electromotive with gu axial fic 05 p0728 N68-14458 of anisotropic energy gap 05 p0728 N68-14464 TUNNELING (EXCAVATION) Designation | FTD-I Hydraulic tunneling and mining improvements by more efficient water jet delivery techniques [R.4-23-68] 20 p3456 N68-32605 Acceleration of liquid slugs to high velocity by super-nic gas nozzles for drilling rock during tunnel con-FTD-I [R-4-22-68] 20 p3456 N68-32616 NASA TUPOLEV AIRCRAFT U TU-124 AIRCRAFT Heat cooling cooled TUPOLEV TU-124 AIRCRAFT U TU-124 AIRCRAFT TURBIDITY Densities, turbidities, and refractive index incre-tents of icosahedral carborane and its carbon-sub-citated derivatives 10 p1494 N68-20522 FTD-Scattering and ab waves by particles of turbid m
[NASA-TT-F-477] n of plane electromagnetic TURBIN NT C 12 p1868 N68-22462 On atmospheric turbidity and its bearing upon pyrelicmetric measurements NT J 21 p3689 N68-34116 Weakening of parallel narrow light beam in turbid (FTD-MT-24-215-67) 22 p3918 N68-35451 TURBONE BLADES Temperature distribution of turbine rotor cooled by vapor passing through circular channels in blade shafts [FTD-HT-66-743] 02 p0282 N68-11419 Heat transfer coefficients and cts for gas turbine blades and w d pressure gradient ef-02 p0288 N68-11732 Radial turbine examined to determine influence of clearance on turbine efficiency between blades and (FTD-MT-67-15) 04 p0434 N68-13166 as for gas to blade surface ditions of gas turbine 05 p0755 N68-14498 Heat transfer coe under various operating [NASA-TT-F-11448] Turbine driven circulation gy available from high prelower powered by ener-ire breathing oxygen in manned spacecraft [AMRL-TR-67-126] 05 p0615 N68-14511 carculations and experadial gap between a multistage turbin nts to determine losses at 06 p0897 N58-15123 tric parameters for compu-tione engine blades 06 p0898 N68-15416 n of ge terized design of airci (FTD-HT-66-535) Turbine stage ch tics in terms of two dimensionless parameters (FTD-HT-66-537) 06 p0898 N68-15417 Temperature field calculati blades in gas turbines [NASA-TT-F-11183] n for effective cooling of 06 p0927 N68-15795 Reynolds number effect on single stage axial flow turbine in air [NASA-TN-D-4383] 07 p0937 N68-16228 Cold air study of high to blade feature effects on stato [NASA-TN-D-4418] perature gas turbine -07 p1074 N68-16632 TURBE tested for suitability as Oxidation resistant allo transpiration cooled gas tu [NASA-CR-930] 08 pl 185 N68-17591 Load carrying capacity of turbine blades sleeve type, two circuit 09 p1441 N68-18673 Effects of surface Mach mand specific heat ratio on geo sonic impulse turbine blad number range of 1.5 to 5.0 (NASA-TN-D-4422) shers, inlet flow angle etric features of super-sections over Mach TURBI 10 p1460 N68-20276 sical design layout for ocer, computer simula-t facility performance, Hydrodynamical and m ro-speed hydraulic turbin two-speed hydraulic t tion of pumping syste and study of demonstr [NASA-CR-72378] 12 p1961 N68-22325 Effect of radial cle in turbine performance [FTD-HT-47-52] 13 p1989 N68-24264 Experimental cold for static pressure distribution (AFAPL-TR-67-147) w investigation of chordwise in around turbine airfoil 16 p2587 N68-27232

NDEX

int con-

-14458

W P4

-14464

ents by

-32605

super-

32616

20522

gnetic

2462 pyr-

4116

urbid

5451

ed by

1419

it ef-

1732

e of

1166 face

498

511

s at

123 pu-

416

en-

117

tof

195

28

.

32

88

73

de rich

16

18

IT SOUS DE THAN

Interaction of revolving circular cascade of blades with guide blades streamlined by nonviscous liquid in axial flow centrifugal pump [FTD-MT-67-46] 16 p2644 N68-27314 16 p2644 N68-27314

Axial flow turbine blade loading characteristics examined by surface, diffusion and velocity diagrams [NASA-TM-X-52307] 16 p2585 N68-27755 velocity diagrams 16 p2585 N68-27755 Design of axial turbine nozzle assembly with movable

18 p2997 N68-30175 FTD-HT-66-6681

Asymptotic methods for computing temperature distribution of working blade of gas turbines [FTD-HT-67-40] 18 p3005 N68-30490 Surface diffusion and loading effectiveness parameters examined to increase turbine blade loading [NASA-TM-X-52445] 19 p3193 N68-31260

Heat transfer in turbojet combustion chambers, film cooling experiments on wall temperatures, and air cooled gas turbine rotors [FTD-HT-23-938-67] 20 p3580 N68-33575

Air cooled gas turbine rotors 20 p3580 N68-33577

Turbine blade injected cooling air effects on gas tur-bine engine propulsive efficiency [FTD-HT-67-303] 22 p3954 N68-35228

TURBINE ENGINES

NT GAS TURBINE ENGINES

NT 1-75 ENGINE RA-28 ENGINE T-53 ENGINE

NT TURBOFAN ENGINES NT TURBOJET ENGINES NT TURBOPROP ENGINES

Selection and procurement of materials having hot corrosion resistance applicable as tubing in gas turbine engine recuperators and for dynamic hot corrosion

02 p0223 N68-11866 Machines, tools, and materials for flow turning cold orking process used for manufacturing components

06 p0849 N68-15168

Determination of geometric parameters for computerized design of aircraft turbine engine blades [FTD-HT-66-535] 06 p0898 N68-15416

Performance evaluation of nitrogen inerted lubrica-on system with contact seals for ball bearing of tur-INASA-TM-X-524131 10 p1534 N68-19861

Microscopic particle separation and applications in field of air pollution, and in protection of turbine engines from dust or sea sprsy ARL-68-00241

ARL-68-0024] 13 p2078 N68-24234 Mathematical model for performance analysis of brayton cycle in turbine engines [UCRL-70827] 14 p2193 N68-25297

Portable suppressors for turbine engine ground maintenance noise reduction [INC/C6/P7] 14 p2187 N68-25386

Standard method of estimating comparative direct operating costs of turbine engine transport aircraft 15 p2385 N68-26159

Friction and fretting wear tests on materials used as friction dampers to reduce vibrational stresses in compressor blades for turbine engines [NASA-TN-D-4630] 17 p2893 N68-28871

Performance of single stage turbine with rotor blade surface diffusion factor of 0.3 [NASA-CR-1172] 20 p3578 N68-32987

TURBINE EXHAUST NOZZLES

Radial axial flow turbocompressor modifications to improve efficiency 04 p0567 N68-13736

Performance tests, exhaust velocity, and design of scale model for nuclear exhaust system [NASA-CR-91275] 08 p1202 Ne8-17289

TURBINE PUMPS

Dynamic characteristics of turbine pumps with rapidly fluctuating flow rate [NASA-TM-X-53639] 01 p0068 N68-10172 Damping, and shaft load deflections in rotary screw

02 p0219 N68-11879

Cold air performance test of scale model oxidizer pump drive turbine for M-1 engine - performance of first stage with inlet feedpipe manifold assembly (NASA-TN-D-4392) 07 p1073 No8-16413

Lubricating mechanism, cage design, and heat eneration of ball bearings for liquid hydrogen tur-opumps, and design factors of contact seals for liquid NASA-TM-X-524151 08 p1183 N68-18124 inasa-cr-61682) 09 p1414 N68-19048

Reactor design and development, interactions with strate and turbopump during integrated testing, and brication and safety efforts related to NERVA pro-

NASA-TM-X-60977] ... 11 p1743 N68-21402 Pressure rise response of turbopumps to flucturating flow rates and unsteady flow about two dimensional linear cascade of airfolis [NASA-TN-D-4298] 12 p1810 N68-21930

12 p1810 N68-21950

Performance prediction and improvement of tur-SP-9151 20 p3401 N68-32403

Future designs and applications of turbopumps [SP-916] 20 p3460 N68-32535 Lubrication, design, and material requirements of ball bearings in liquid hydrogen turbopumps [NASA-TM-X-52476] 20 p3488 N68-32934

Analog and digital simulation of performance prediction for test assembly on turbine pump self-compensating thrust balance systems (NASA-CR-72430) 21 p3697 N68-3427

21 p3697 N68-34271 Hydrogen turbopump system vibration measure-nents at cryogenic temperatures using wideband celeration instrumentation techniques LA-DC-9331] 24 p4257 N68-37930 [LA-DC-9331]

Radial turbine examined to determine influence of clearance on turbine efficiency between blades and [FTD-MT-67-15] 04 p0434 N68-13166

Friction and ventilation losses in radial turbine wheels of helicopter and transport gas turbine installations. 04 p0568 N68-13850

Stationary and transient thermal analyses for gas tur-bine rotor disks under themperature stress [FTD-HT-23-705-67] 13 p2164 N68-24305

Rigid-body dynamics of rotors supported in plain, lindrical, cavitated, fluid-film journal bearings in-estigated by Runge-Kutta extrapolation techniques 19 p3275 N68-30914

NT AXIAL FLOW TURBINES NT GAS TURBINES NT STEAM TURBINES

SUPERSONIC TURBINES TWO STAGE TURBINES

Experimental performance evaluation of radial in-flow turbine with exit diffuser [NASA-TM-X-1480] 03 p0302 N68-11920 03 p0302 N68-11920 Optimum design geometry for high radial inflow tur-bine performance efficiency [NASA-TN-D-4384] 06 p0770 N68-15943

Effect of contamination of flowing media on turbine

(DLR-MITT.-67-19) 07 p0995 N68-16186 Effect of radial clears ce on turbine performance [FTD-HT-67-52] 13 p1989 N68-24264

Calculation of trajectories of atomized drops in wet vapor turbines [NASA-CR-94708] 14 p2338 N68-25418

Vortex effects on sta n temperature for flow of 15 p2381 N68-26301

Turbines and heat recovery system for thermal energy in Hanford power reactor
[CONF-680204-2] 17 p2916 N68-29074

17 p2916 N68-29074 Flow velocity, pressure distribution, and difference echnique for laminar flow of viscous, incompressible, lewtonian fluid through rotating terribus disks 18 p3058 N68-29613

Effect of variable stator geometry on performance of air cooling turbine [NASA-TM-X-1632] 18 p2996 N68-29994

ne refrigerator 18 p3006 N68-30521 Low temperature helix (FTD-HT-67-227)

Performance predict bines and turbogumps [SP-915] in and improvement of tur-20 p3401 N68-32403

Cavitation in suction pipe aperture and its characteristic curve for Kaplan turbine construction [TT-NEL-1959] 22 p3859 N68-35311 22 p3859 N68-35311 Cavitation testing method for hydraulic turbine

FTD-MT-24-242-67] 22 p3861 N68-35436

Turbine performance with 130 percent design stator INASA-TM-X-1663] 22 p3808 N68-35536 Combination temperature, pressure, and flow direction sensing probe to study rotating machinery [NASA-TN-D-4816] 23 p4060 N66-36021

Performance tests of stator component in closed outline and effects on performance of single stage turbine suitable for air co [NASA-TM-X-1675] 23 p4162 N69-37264

TURBOALTERNATORS
U AC GENERATORS
U TURBOGENERATORS

TURBOCHARGERS

U SUPERCHARGERS

U TURBOCOMPRESSORS

Aerodynamic characteristics of single stage tur-bocompressor with double circular arc blades [NAL-TR-134] 01 p0129 N68-10929

Effect of aspect ratio on axial flow compressor per-(ARC-CP-943) 03 p0297 N68-12409

Leakage and secondary flow effect on lift, united angles, induced drug and loss coefficient in rectilinear cascade of compressor blades | 03 p0297 N68-12857 03 p0297 N68-12457

Selected articles on turbocompressor and com-bustion chamber burner improvements and flow calcu-lations in turbogenerator long blade compressor stage [FTD-HT-46-364] 04 p0367 N68-13733

Radial axial flow turbocompre aprove efficiency 04 p0567 N68-13736

Jet aircraft compressor soise reduction by absorp-tion and choked flow [QPR-8] 05 p0732 N68-14808 05 p0732 N68-14808

Brayton cycle turbocompressor using self-acting gas [MTI-67TR74]

07 p0940 N68-16922 Performance tests on closed loop Brayton cycle tur-compressor alternately using nitrogen and argon

Working gases [MTI-67TR81] 07 p0940 N68-17029 Wear tests and performance variations of axial and centrifugal compressor stages operating in dusty air 08 p1230 N68-17404

Rankine cycle low power turbocompressor for space applications

08 pl121 N68-17799 Brayton cycle turbocom ressor for space applica-

08 pl121 N68-17800

Modified scale model Freon compressor facility for full scale fan noise simulation studies [FAA-DS-68-5] 09 p1322 N68-18490

Partial choking and application of acoustic materials to vanes, strats, and duct walls to reduce jet engine compressor resise (DS-68-7) 11 p1744 N68-30873 Literature survey on tip cles compressors (K-1682) arance problems in axial

11 p1686 N68-21721 Breakaway flow in stage characteristics of asial com-pressors with large hub diameters. [NASA-TT-F-11583] 12 p1810 N68-22251 12 p1810 N68-22251

riques for high lift sta-Boundary layer blowing for blades in axial flow or [NASA-CR-S4564] 12 p1813 N68-22579

Axial flow turbi for space power plant 14 p2191 N68-24596

INASA-CR-8021 14 p2191 N68-24597 Esperimental evaluation cycle turbs n of par injection start of INASA-TM-X-15901

14 m2191 NSB-24757 Design and dynamic a stor support for high r testing of pas bearing NASA-CR-8011

14 p2264 N68-25042 single compressor after [NASA-TT-F-11594] 15 p2300 N68-25914

adjust combassion work 15 p2547 N68-26771

Piroted pad gas bearing properation of Brayton cycle to [NASA-TM-X-52372] rmance in exploratory

mor with high three conf-Two stage axial flow co-DLR-FB-68-221 16 p2585 Nee-27556

SUB.

cool cool [FT

form [NA

TURB

NT NT NT

C

T

sing blud [AR

D

TURNERSESSESSES

T

F

C

mei mei

deg vibi free [F]

TURN

TURE

TURBOCONVERTERS Stress analysis and wear tests in use of lacing wire as Low speed wind tunnel tests on aerodynamic louses due to porous fiber metal plates used as noise suppres-sors in turbofan engines [DAC-33722] 20 p3399 N68-32219 vibration damper on to [NASA-TM-X-1603] ressor blades 16 p2790 N68-28238 High intensity sound tests of acoustic fatigue strength of turbofan engine nacelle modification to reduce fan NASA-CR-54569) 17 p2802 N68-28621 e reduction in axial flow Inlet guide vane choki Data acquisition and reduction of measured noise in-tensity levels of DC-8-62 powered by turbofan engines with long fan discharge ducts [DAC-33676] 20 p3399 N68-32222 [NASA-TN-D-4682] 17 p2809 N68-29406 Dynamic performate rotating axial flow com [NASA-TT-F-11838] nce of blade rows in counter Data acquisition and reduction of measured flyover cise intensity levels of DC-8 powered by turbofan en-ines with short fan discharge ducts DAC-33523] 20 p3399 N68-32223 18 p3000 N68-30831 Noise origins in axial compr 20 p3392 N68-33010 DAC-33523] Development of low leakage rate senis for advanced air breathing engines [NASA-CR-54628] 24 p4260 N68-37608 Measured flyover noise intensity levels of DC-8 powered by turbofan engines with short fan discharge duct suppressors [DAC-33524] 20 p3399 N68-32224 Axial flow compressor de corporating radial distribut flow path or axial velocity ra [NASA-CR-54531] or design computer programs in-tribution of total pressure and 24 p4194 N68-38057 Boundary layer separation in axial compressor vane [LB-30637] (FTD-HT-67-187) 24 p4195 N68-38212 TURBOCONVERTERS
U TURBOGENERATORS TURBOELECTRIC CONVERSION B- 52 AIRCRAFT B- 32 AIRCRAFT BOEING 707 AIRCRAFT BOEING 720 AIRCRAFT BOEING 727 AIRCRAFT CONCORDE AIRCRAFT CV-990 AIRCRAFT [NASA-TM-X-52469] DC 8 AIRCRAFT DO- 31 AIRCRAFT [DCR-248] F- 28 TRANSPORT AIRCRAFT F- 111 AIRCRAFT TURBOFANS P-1127 AIRCRAFT TU-124 AIRCRAFT TURBOFAN ENGINES R67FPD2181 Acoustical data from TF-33-P-11A turbofan engine easured in RB-57F aircraft TURROGENERATORS [SEG-TR-67-26] 06 p0766 N68-15129 Selected articles on action chamber burner Relationship between fan drive turbine geometry and output efficiency of turbofan engine [NASA-TM-X-1581] 12 p1962 N68-22725 lutions in turbogen (FTD-HT-66-364) Aircraft noise abategineering solutions erational methods and (INC/C1/F16) 14 p2189 N68-25641 Nacelle design for turbofan engine compressor noise suppression on Douglas DC-8 aircraft [NASA-CR-1056] 15 p2547 N68-26771 ment, procedures, Brayton cycle demon [NASA-CR-65924] Cycle characteristics and structural configuration of turbojet and turbojen engines for lightweight aircraft [NASA-TM-X-1624] 9 p3359 N68-31476 NASA-TN-D-4302] Acoustical design criteria on lining materials for fan noise reduction in turbofan engines [D6-17100, V. 1] 20 p3395 N68-32190 Dynamic characteristroller for Brayton ofan engines 20 p3395 N68-32190 Controller for Brayton cycle tu [NASA-TM-X-1456] Computer programs for calculating acoustical data on ducted flow experiments and evaluating lining materials for fan noise reduction in turbofan enjines [D6-17100, V. 2] 20 p3395 No6-32191 Design, operating conditions lubricated journal and thrust be turbomachinery [NASA-TM-X-57367] Fan discharge noise reduction test on acoustically treated high velocity duct system of turbofan engine [T6-3166] 20 p3396 N64-32199 Hypergolic turboalt to complement lunar n [NASA-CR-92043] Jet noise reducti criteria, and scale m Turbogenerator mater um and tantalum alloys ([NASA-TM-X-59596] 20 p3397 N68-32208

ameters for communi a turbofan and turboj

sound transmission in ab-turbofan engine rotational

dan engine far field noise spec-

cal performance evaluations of raisms of JTSD-1 turbofan ex-

20 p3398 N68-32211

20 p3398 N68-32212

20 p3398 N68-32213

20 p3398 N68-32214

20 p3398 N64-32215

nd scale model tests of 20 p3398 N68-32216

riniet whine noise by lining

Noise intensity levels under flight path of DC-8-50 with JT3D-1 turbofan engine during takeoff and landcalculations on digit [COA-AERO-198] 01 p0036 N68-10865 20 p3400 N68-32228 Simulated wind-tur mented flap [NASA-TN-D-4278] ated wind-tunnel investigation with jet-aug-Noise intensity levels under flight path of DC-8 with IT3C-6 turbofan engine during takeoff, and selection of runway lengths and engine power reduction [SM-23641, REV.] 20 p3400 N68-32229 02 p0160 N68-11627 ulation of turbine engines and controls 05 p0731 N68-14331 Digital simul Attenuation rate effects on performance and con-purations of turbojet engines, propulsion system, and propean Aerobus Noise intensity levels during takeoff under flight path of DC-8 with JT4A-9 turbofan engines and Daisy-Ejec-20 p3400 N68-32230 06 p0766 N68-15100 Performance calculations for subonic aircraft tur-Load carrying capacity of sleeve type, two circuit turbine blades 20 p3578 N68-32909 09 p1441 N68-18673 Comparative performance data on open propeller, trouded propeller, and turbofan propulsion systems or army aircraft mission requirements Small deviations method of establishing relationships between turbojet engine gas temperature and compres-sor speeds and thrust reverser parameters 23 p4160 N68-36232 09 p1413 N68-18678 stion zone characteristics of high in-Primary combo Acceptability of variable area scroll for power amfer in tip turbine lift fan system for variable thrus [NAL-TR-143] 10 p1584 N68-19567 Turbojet engine analyzer using airborne and ground quipment to process engine performance and stress 15 p2547 N68-26805 [AD-665158] 10 p1530 N68-20203 compressor and com-vements and flow calcu-lade compressor stage 04 p0567 N68-13733 Noise reduction problems of jet engines and turbojet [INC/C1/P6] 14 p2189 N68-25621 erator long blade com-led difference method 04 p0437 N68-13735 Flow calculations in turbogenera preusor stage solved using modified Turbojet aircraft noise abater [INC/C1/P22] 14 p2189 N68-25636 Inlet guide vane spacing effects on compressor noise reduction in turbojet engines [NASA-TM-X-59214] 16 p2751 N68-27443 nd methods used in ckout tests 06 p0771 N68-15993 strumentation techniques for acquisition and Reduction of apparent power requirement for phase outrofled parasitically loaded turbualternator by mul-ple parasitic loads 17 p2886 N68-29194 07 p0941 N68-17110 Cold flow tests of serodynamic characteristics of itug nozzle configuration for turbojet engines operatof parasitic loading speed urboalternatur ing at supersonic spee (NASA-TM-X-1619) 09 p1274 N68-18702 18 p3157 N68-29953 s, and problems of gas searings for space power Turbojet engine nois system guide vane-rotor [NASA-TN-D-4690] ion by increasing intake lade spacing 18 p3157 N68-30040 10 p1459 N68-19606 Theoretical and experi ex signal reflections or sental data on effects of comight-type power system ectrical power supply 11 p1630 N68-21401 s on acoustic pressure spectra of 19 p3197 N68-30932 patibility tests of niobi-ling potassium. 14 p2272 N68-25150 Cycle characteristics and structural configuration of turbojet and turbofan engines for lightweight aircraft [NASA-TM-X-1624] 19 p3359 N68-31476 Heat transfer to boilin [NASA-TM-X-59568] accordary flow mixing lengths on ast nozzles of turbojet engines. 19 p3359 N68-31559 14 p2193 N68-25234 Effect of primary-se shrouded rotary exhau [NAPTC-ATD-147] for forced flow single Frequency response tube boiler containing I (NASA-TM-X-60523) Computer program and parameters for communit noise intensity levels of various turbofan and turboja engine cycles and weight flows [D6-8147] 20 p3398 N68-3221 14 p2193 N68-25280 Thermal power cali Enrico Fermi atomic 20 p3398 N68-32211 APDA-NTS-161 16 p2704 N68-27966 Heat transfer characteristics of cylindrical ejector for rbojet engine and shroud material temperature pre-Principles, characte sent status of conver nd technology develop [NASA-TM-X-1641] 20 p3610 N68-32988 for heat into space election [NASA-TM-X-52472] 18 p3113 N68-29921 Turbojet engine thrust determination using ratio of specific heats
[FT-TM-3-68] 20 p3578 N68-33039 SNAP-8 systems design or ris, and assessment of [NASA-TM-X-52464] 19 p3309 N68-51164 Jet VTOL aircraft inlet temperature rise and induced recirculating flow patterns [NASA-CR-1147] 20 p3392 N68-33043 Radioactive decay kinetics purent and daughter nuclides thermal power, and spontanes (NUMEC-3731-4.5-6, PT. 1) plutonium 238, related and helium generation, Scale formation in turbojet engines from inadequate temperature and low oxygen concentration [FTD-HT-23-825-67] 20 p3580 N68-33472 19 g3313 N68-32022

Computer program and part nine intensity levels of various name cycles and weight flows

Comparative according nic and Hush Kit versions in 7200 test arcraft

DEX

6564

cycle

0865

-sug-

1627

4331

con-

5100

rcuit

673

678

in-

567

resi

201

ojet

621

636

143

94

of

mt.

53

ke

32

of

26

59

11

18

of

10

13

Heat transfer in turbojet combustion chambers, film cooling experiments on wall temperatures, and air cooled gas turbine rotors [FTD-HT-23-958-67] 20 p3580 N68-33575 2 tur-34637 20 p3580 N68-33575 Heat transfer in turbojet engine combustion chambers and film cooling of wall temperatures
20 p3613 N68-33576 35068 brica-ystem

Inlet air pollution effects on turbojet engine per-[NAPTC-ATD-152] 24 p4337 N68-38298

TURBOMACHINE BLADES
NT COMPRESSOR BLADES

ROTOR BLADES [TURBOMACHINERY]

STATOR BLADES TURBINE BLADES

Cascade flow analysis with gradual increase in axial flow velocity for flow optimization in high turning decelerating blades (VKI-IN-19) 06 p0763 N68-15185

Tandem cascade solved by replacing second blade by singularities and conformal transformation of first blade by Howell method - computer program [ARC-CP-971] 06 p0829 N68-15799

FORTRAN computer program for calculating two dimensional subsonic inviscid flow for rotating or sta-tionary circular cascade of blades on blade to blade stream surface of turb [NASA-TN-D-4525] 11 p1619 N68-21374

Diakoptics uncoupling method for determining tur-bine bucket frequencies by applying matrix calculus to general eigenvalue problem 19 p3300 N68-31178

TURBOMACHINERY

NT AXIAL FLOW TURBINES

NT CENTRIFUGAL COMPRESSORS

NT CENTRIFUGAL PUMPS

GAS TURBINES
STEAM TURBINES
SUPERSONIC TURBINES

NT TURBINE PUMPS TURBINES NT

NT TURBINES NT TURBOCOMPRESSORS NT TURBOFANS NT TURBOGENERATORS NT TWO STAGE TURBINES

Test facilities summary for Fluid Dynamics Institute 01 p0046 N68-10334

FORTRAN computer program for supersonic tur-bomachinery blading design calculations [NASA-TN-D-4421] 09 p1308 N68-18620

Computer prediction of transient performance of raulic turbine 12 p1881 N68-22094 [NASA-CR-72379] Digital computer program for through-flow fluid mechanics in arbitrary turbomachine using matrix

[ARC-R&M-3509] 14 p2181 N68-24817 Development of low capacity high pressure stages for entrifugal compressor

centrifugal compressor [FTD-MT-24-174-67] 15 p2475 N68-26683 Parametric analysis and sys omachinery performance in and system optimization of tur-

(NASA-CR-89172) 15 p2505 N68-26838 a erosion in turbomachinery Reduction of cavita

by material selection (SP-931) 20 p3458 N68-32295 Individual element by vibrating flexible rotor (RTS-4630) ncing for stabilization of

20 p3536 N68-32503 Vibrations in turbomachiner degree of freedom, critical rot vibrations of rods, and systems w ery, systems with one rotor speed, transverse with several degrees of freedom (FTD-HT-23-527-67)

21 p3791 N68-34649

TURBOPROP AIRCRAFT NT C-130 AIRCRAFT NT P-3 AIRCRAFT NT VISCOUNT AIRCRAFT NT XC-142 AIRCRAFT

Velocity, gust, and height data analysis from four-en-gine turbojet transport simplane (NASA-TN-D-4330) 07 p0933 N68-16522 07 p0933 N68-16522

TURBOPROP ENGINES NT T-53 ENGINE

Wind tunnel stability tests of twin engined turboprop aircraft with rotating cylinder flaps [NASA-TN-D-4489] 09 p1268 N68-19189

Electrophoretic coating method for application of Sermetal W to all critical surfaces of exhaust diffuser, air diffuser, and combustion chamber housing of T-53 VL-2488-3-01 10 p1536 N68-20462

Performance tests of turboprop engine during bird INA-68-61 13 p1992 N68-23763

TURBOPUMPS
U TURBINE PUMPS

BOROTORS TURBINE WHEELS

Design and dynamic simula rotor support for high performance or testing of gas bearing rmance axial flow tur-[NASA-CR-801] 14 p2264 N68-25042

Approximation formulae for transition integrals of flexible shaft through critical speeds with friction 20 p3516 N68-33122

TURBOSUPERCHARGERS
U SUPERCHARGERS
U TURBOCOMPRESSORS

ATMOSPHERIC TURBULENCE
CLEAR AIR TURBULENCE

GUSTS
HOMOGENEOUS TURBULENCE
ISOTROPIC TURBULENCE
LOW LEVEL TURBULENCE
MAGNETOHYDRODYNAMIC TURBU-

NT PLASMA TURBULENCE

Grooved-shaft viscoseals designed for laminar and turbulent regions [NASA-CR-90309] 02 p0214 N68-11025 Electronic instruments for recording turbulent pulsons of current velocity and temperature at gre

[NOO-TRANS-376] 04 p0510 N68-13644 Mean wind gradients and spectral measures Brookhaven National Laboratory [BNL-11889] 07 p1019 N6i 07 p1019 N68-16807

Positive pressure gradient effect on generation of turbulence in laminar boundary layer in incompressible fluid

07 p0988 N68-17000 ce of magnetic fields in

turbulent conducting flu [NASA-TM-X-60924] 09 p1402 N68-19005 Fluid turbulence energy spectrum in gas solid

11 p1681 N68-20617 Effect of turbulence on static pressure tubes [ARC-R&M-3527] 14 p2180 N68-24769

Effective Asc. R&M-3527]
Use of models of turbulent flow in soishout rigid boundary layers

19 p3195 N68-31584 flow without rigid hou [FTD-MT-66-171]

Spectrum of turbulence and concentration fluctua-ons with chemical mixing and reactions (P-407) 19 p3266 N68-31750

Burger equation applied to understanding of turbu-lence and evaluation of Navier-Stokes equations [P-402] 19 p3266 N68-31812

Assumptions for use of Navier-Stokes equation for kinetic theory of turbulence in incompressible fluids [PIBAL-68-5] 20 p3460 N68-32516 ner to turbulent regimes in suble flows 20 p3460 N68-32602

OR-94421 Spherical wave prent media in non-stationary turbu-

[AFCRL-68-0333] 22 p3864 N68-35993 Role of diffusivity in to 23 p4042 N68-36013

Turbulence transfer equation derived to determine universal f [LA-3854] n of energy decay rate functions variations 23 p4049 N6E-36725 Detached cylindrical turbule reasing mass transfer rates in a

race promoters for in-queous channel flow 24 p4242 N66-37458 Spectrum of final decay of localized disturbances in viscous fluid [NSRDC-2785] 24 p4245 N68-37882

TURBULENCE REFECTS

Statistical model of atmosp ment related to manned flight 01 p0058 N68-10565

cts of turbulence with sotropic cases 02 p0197 Ned-11138 Review of funds emphasis on homographic (IDA/HO-66-3163)

Data summaries for energy spectra and cospectra associated with subulent energy exchange processes within first 100 meters of atmosphere (ECOM-43-G10, V. 4) 03 p0366 N68-12716 03 p0366 NGB-12716 loss in bubble chamber graphs 05 x0754 N68-14256 Turbulent exchange effect in boundary layer on efficiency of diffusers with large aporture angles [FTD-HT-23-536-67] 06 p0826 N66-15486

Jet transport control problems induced by turbo

08 pl 109 N68-17448

08 ml 196 N68-17491 liquid hydrocarbon 06 p1261 N68-18165

Wind tunnel tests to det mass transfer on comes [REPT.-67-8] 12 p1981 N68-22058

Analysis of turb sonic shear layers [NASA-CR-838] 12 p1859 N68-22087

13 p2124 N68-23146

Effects of photosphere i 13 a2151 N68-23928

15 p2573 N68-25770

K-TRANS-31] 17 p2803 N68-29054

17 p2850 N68-29084 ce effects on per

17 p2897 N68-29109 17 p2853 N68-29111

Free stream turbule nation zone heating (AFFDL-TR-67-195) nce on hypernonic stag-20 p3609 N68-32615

nce in unidirectional mideration 21 p3718 M68-34296

Convection velo sublayer of turbuless [NPL-AERO-1251] nerode in viscous 21 p3682 Non-34363 ting aircraft flight sta-

Miny (FTD-HT-67-185) 23 p3991 N68-36710

d droplet growth rate 23 paigs N68-36821 (RM-5489-PR) Pilot response during TSR-2 aircraft flights thros

23 p4004 N68-37139 ph abblack turbulouse [ARC-CP-997] of high at

Meteorological aspects encountered by XB-70 airs [NASA-TM-X-61114] 23 p3992 N68-37299 TURBULENCE METE

of wire anomometer system for manusing orders, testions in turbulent coaxial flow field of dissimilar

NASA-CR-9611 04 p0492 1968-1281

14 p2248 N68-24958

y data of physical during 14 p2249 1688-24

16 p3663 1088-279 of with figure markets using he RM-414) 17 p2000 1068-293

TURBULENT AR CURRENTS
U AIR CURRENTS
TURBULENT BOUNDARY LAYER

NASA-TT-F-11375) ---01 mat 37 Hua-H

SUB

A

TX.

ly hyperic

TUR

ed [N

8 E

TUR

F

Formulas for limiting heat exchange law when chemical reactions occur on entrainable surfaces as well as within boundary layers 01 p0052 N68-10611 Approximate integral method for solution of turbu-lent boundary layer displacement effects in hypersonic

[VKI-TN-34] 01 p0002 N68-10814 Mixing length hypothesis for turbulent boundary layer with suction and injection [IR-8] 02 p0198 N68-11285

Entrainment and kinetic energy methods for calculating turbulent hydrodynamic boundary layers in in-[TWF/R/6] 02 p0202 N68-11703

Radiative and convective heat transfer and friction in turbulent boundary layer of diathermic gas flow nermic gas flow 02 p0289 N68-11738

Convective heat transfer in unsteady laminar thermal oundary layer on semi-infinite plate in viscous liquid

02 p0291 N68-11750 Turbulent boundary layer experiments near separa-tion along circular cylinder with flow in axial direction (REPT.-91) 02 p0202 N68-11763

Rotts differential equations used to calculate length scale of turbulence in free-flow turbulent boundary (TWF/TN/31)

03 p0335 N68-11976 Response of constant pres yer to sudden application essure turbulent boundary tion of adverse pressure

NPL-AERO-1219] 03 p0335 N68-12096 Finite differences approximation of normal deriva-ves for solution of laminar and turbulent boundary

[AFOSR-67-2046] 03 p0337 N68-12448

Approximate method for predicting incompressible two dimensional turbulent boundary layer behavior [ARC-R&M-3484] 03 p0297 N68-12478

Determination of momentum thickness by equations of motion in turbulent boundary layer for subsonic flow

[ARC-CP-963] 04 p0431 N68-12912 Pressure distribution of compressible and incom-pressible flows in turbulent boundary layers [ARC-CP-967] 04 p0492 N68-12967

Effect of transverse surface curvature on remisother-al axially symmetrical turbulent boundary layers in compressed gases [FTD-HT-46-430] 04 p0493 N68-13159

Immersion shock generator to reduce heat transfer ad skin friction in turbulent supersonic boundary

[NYU-AA-67-106] 04 p0434 N68-13282 Wall temperature effects on boundary layer icknesses in subsonic gas flow

AD-661335) 04 p0496 N68-13808

Flow produced by turbulent boundary layer interac-tion with normal shock wave of sufficient strength to cause separation ARC-RAM-3502 04 p0438 N68-13904

Pressure gradient effects on surface heating of luminar and turbulent boundary layer hypersonic flow [R67SD49] 05 p0646 N68-14002

Dynamic and thermal characteristics of natural and iduced turbulent layers in supersonic flow along flat

05 p0647 N68-14020 Prediction procedures classified for turbulent boun-ury layer problems - integral equations for solving parury layer problems al differential equa TWF/TN/27)

05 p0647 N68-14107 dary layer nonuniformity investigated nowise bour

to amous one of gauce screen in wind tunnels [ARC-29271] 06 p0824 N68-15198

Turbulent exchange effect in boundary layer on efficiency of diffusers with large operture angles
[FTD-HT-23-536-67] 06 p0826 N68-15486

Measurements of wave number/ rum of wall pressure beneath turbs rr/phase velocity spec-rbulent boundary layer

(NPL-AERO-1224) 06 p0829 N68-15776 Digital computer program for predicting panel response to turbulent boundary layer fluctuations [NASA-CR-41555] 07 p1091 N68-16702

Heat transfer in to dury layer with pres-07 p1096 N&8-16711

fest boundary layer and transition on plane NASA-TT-#-5201 08 pi161 N68-17563 Injected gas flow effect on gradient pressure turbu-ut boundary layer flow around flat plate 08 p1256 N68-17710

Solution of incompressible, turbulent boundary layer equations using method of weighted residuals [FMTR-67-2] 09 p1325 N68-18327

Equilibrium skin temperatures on wedge surface for minar and turbulent boundary layers at hypersonic [RAE-TR-67114] 09 p1447 N68-18403

Turbulent boundary layer effect on panel flutter [NASA-TN-D-4486] 09 p1442 N68-18721 Curvature effects on turbule concave and convex surfaces [NASA-TT-F-11421] ilent boundary layers at

09 p1327 N68-18731 Turbulent boundary layer of dissociated gas at inlet ction of tube [NASA-TT-F-11254]

09 p1329 N68-19026 Boundary layer and wake survey data reduction techniques in compressible flows [NASA-TN-D-4401]

10 p1514 N68-19709 Influence of mass injection, through smooth and rough surfaces, on turbulent boundary layer and wall jet development [TWF/R/3] 10 p1516 N68-19987 10 p1516 N68-19987

Integral method for calculating incompressible tur-ulent boundary layer development in two dimemions NPL-AERO-1234] 10 p1518 N68-20516 outent boundary layer developm [NPL-AERO-1234]

Mathematical model for compressible turbulent slane Couette gas flow with equal heat transfer at both 11 p1682 N68-20697 [ARL-67-0223]

Turbulent shear stresses and turbulent intensities of viscous region of turbulent boundary layer [CER67-68HWT21] 11 p1682 N68-20752 Two dimensional turbulent boundary layers at walk of rotating channels [DLR-FB-68-07] | 11 p1685 N68-21220

Combined blowing and suction for laminar boundary layer control on two dimensional bodies and effectiveness of blowing in increasing boundary layer roughness tolerance [WT-51] 11 p1685 N68-21253

11 p1685 N68-21253 Computer program for calculating drag coefficient of slightly blunted slender cone [NOLTR-68-3] 11 p1621 N68-21672

ilent shear flow 12 p1859 N68-22126 ent in turbule Negative entrainm [NPL-AERO-1249]

Flow structure and velocity distributions in turbulent oundary layers over flut surfaces with roughness ele-12 p1859 N68-22133

Heat transfer calculations for constant property turbulent boundary layers [ARC-29716] 12 p1981 N68-22156 New two parameter family of mean velocity profiles for incompressible turbulent boundary layers on

amooth walls [ARC-R&M-3463] 12 p1863 N68-22654 Turbulent separation phenon dimensional fully stalled diffuser [MD-19] senon studied in two 13 p2051 N68-23337

relation analysis of fluctuat-ent boundary layer flow 13 p2052 N68-23482 Selected band cross correla ing pressures under [NASA-CR-1066]

Hot-wire mea sents of turbulence in thermally stratified flow (CEM67-68SPSA-EJP11)

13 p2054 N68-23917 Structure of turbs tary layer developed by [TR-88]

13 p2063 N68-23959 Shortened analysis of possible similarity solutions for ow in turbulent boundary layer after change in surface roughness [NPL-AERO-1242] 13 p2054 N68-24005

bulent boundary layer as steel ribbon induced vibrations of 14 p2242 N68-24938

Wall temperature and Prandtl number effects on disonic laminar and turbulent boundary layer thicke-14 p2372 N68-25126

d flat wall during injec-lent boundary layer 15 p2573 N66-25726 cooling of heat i (NASA-TT-F-11695)

led pipe inlet geometry and t boundary layer and heat operating with air 15 p2573 N68-25793 Some effects of uncook cone angle on turbulent transfer in conical nozzles o [NASA-TM-X-52213]

Friction and heat transfer turbulent boundary layer fit [NASA-TT-F-11663] calculation methods for 15 p2574 N68-25855

Interferometric me ent of mass transfer in turoutent boundary layer of permea [FTD-MT-24-105-67] 15 p2451 N68-26057

Airfoil pressure gradient perturbation effects on tur-bulent boundary layer thickness [ARC-CP-986] 15 p2382 N68-26566

Boundary layer conditions, and tree number and spacing on drag forces within forest canopies in turbulent shear flow [CER67-84GH-JHN50] 15 p2455 N68-26715

Skin friction and heat transfer rate in hypersonic tur-ulent boundary layer flow over flat plates and cold [NASA-CR-82425] 16 p2644 N68-27527

Vibration and sound field of flat plate excited by tur-ulent boundary layer pressure fluctuations with evelopment of analytical computer program 16 p2781 N68-27735

One dimensional energy spectra in turbulent boun-dary layer with analysis of surface roughness effects on spectral shape spectral shape (CEM67-68CYL10)

17 p2874 N68-29202 Friction, heat and mass transfer related to intensity of coolant fluid injection into porous wall for sweat cooling of high temperature gases in turbulent boundary layers (FTD-MT-66-109) 17 p2987 N68-29295

Mathematical prediction of variable density velocity field in turbulent she (RM-5549-ARPA) ariable density 18 p3060 N68-29807

Energy spectra of streamwise fluctuating velocity and mean velocity in study of viscous sublayer along wall in turbulent pipe flow 18 p3061 N68-29977

Pitot tube and hot-wire flowmeter data for turbulent oundary layer on rough surfaces in adverse pressure NSRDC-2659] 18 p3062 N68-30110

Turbulent to laminar flow reversion in boundary [ARC-29859] 18 p3063 N68-30588

Flow and velocity distribution in turbulence produc-tion near smooth wall in turbulent boundary layer with zero pressure gradient [MD-20] 18 n3064 N68-30641

Viscosity and velocity of two dimensional quasi-parallel turbulent shear flow 19 p3262 N68-31030

Equations of motion and boundary conditions for termal instability of fluid layers heated from below RM-416] 19 p3263 N68-31236 [RM-416]

Unparametric integral method for calculating turbu-ent boundary layer in presence of positive pressure NASA-TT-F-118731 19 p3264 N68-31295

Film cooling effectiveness with gas injection through hiscrete orifice into turbulent boundary layer in subsonic wind tunnel [NASA-CR-54604] 19 p3384 N68-31371

Experimental determination of critical blowing parameters on porous plate [FTD-HT-66-666] 19 p3265 N68-31424

Integral prediction method for two dimensional, in-impressible, turbulent boundary layers using kinetic 20 p3463 N68-32967

Heat transfer effect on drag due to surface roughness in supersonic turbulent boundary layer [NASA-TN-D-4746] 20 p3463 N68-33054 ary layer 20 p3463 N68-33054

Laminar or turbulent boundary layer separation treated as steady or unsteady separation 20 p3465 N68-33141

Method of integral relat applied to solution of in-ary layer equations 20 p3465 N68-33195 compressible turbulent b [NASA-TM-X-61169]

Mathematical model for calculation of mean and actuating properties of incompressible turbulent boundary layers (NASA-TM-X-61170) 20 p3465 N68-33244

Laminarization of turbulent boundary layer observed from heat transfer and boundary layer measurements in (NASA-TN-D-4788) 21 p3678 N68-33642

Direct measurement of density in turbulent bound ry layer on shock tunnel nozzie wall using electro NASA-CR-96612] 21 p3680 N68-33948

Logarithmic and defect velocity profile analyses for total skin friction formula of turbulent houndary layer [NPL-AERO-1252] 21 p3680 N68-34010

Motion of n-compo ent gas mixture in turbulent 21 p3683 N68-34627 EX

tur-

5057

tur-

MAN

715

tur-

527

735

an

202

195

ity

107

ent

10

lé

Navier-Stokes calculation for solutions to boundary (ARA-NT-2/68) 21 p3683 N68-34776 ient boundary layers with Velocity profiles f [ARC-R&M-3542] 22 p3854 N68-34842 tions of m NASA-CR-1144] 22 p3856 N68-35096 Mathematical methods for calculating coefficient of rbulence at isolated levels in atmospheric boundary 22 p3859 N68-35283 (FTD-MT-66-156) Approximation method for calculating two dime on turbulent boundary layers with arbitrary pressu NASA-TT-F-11915] 22 p3862 N68-35602 Experimental study of turbi under influence of adverse per hypersonic inlets using two of metric models [CAL-AF-2389-Y-3] lent boundary layer flow nure gradients typical of imensional and axisym-22 p3864 N68-35964 utation of m fluctuating quantities in turbulent boundary laye [NASA-TN-D-4815] 23 p4044 N68-36071 **Experimental** inver n of compressible turbulent boundary layer with air is [ARC-R&M-3526] 23 p4051 N68-37061 Analytic solution for acousti thind rectangular, simply sup-tundary layer turbulence ic field in closed space ported plate excited by 24 p4348 N68-37677 of wall pressure under (BBN-1557) 24 p4245 N68-37745 olution for flow of non-ry layers with variable 24 p4245 N68-37786 nt heat transfer on semiper-ection of foreign gases. 24 p4355 N68-38151 meated surface during inju TURBULENT DIFFUSION pheric circulation induced by nergy conversion variations in 15 p2497 N68-26656 Mathematical expression celerities of filtered turbules [AFOSR-68-0798] ns for space-time correlation ent velocity fluctuations 16 p2643 N68-27148 athematical treatment for separating entropy of alent gas into macroscopic and fluctuating part 16 p2792 N68-27149 nitial velocity effects on turbulent diffusion of dis-te particles in analysis of particle motion and kine-18 p3059 N68-29801 Energy budget of stratosphere analyzed by effects of eddy transport [MIT-224]-38] 19 p3272 N68-31717 Cascade theory of plasma turbulence described by nall eddy group mixing with larger ones to provide radient diffusive flow NASA-CR-87759] 21 p3749 N68-34265 at diffusion and intensity Richardson numb [DPG-T68-106] 22 p3869 N68-35354 Turbulence model for stat dynamics of eddies in chemical [NASA-CR-97103] tatistical analysis of fluid cally reacting flow 22 p3863 N68-35913 ion processes in thermal 23 p4139 N68-36265 Annular flow air-water mixing tests [WAPD-TM-727] 24 p4246 N68-37883 TURSULENT PLOW

NT CAVITATION FLOW

NT SUPERCAVITATING FLOW Turbulent flow interpreted as generalized stock R675D50] 02 p0199 N68-11363 Inverse flame cone method of measuring terming velocity of propane-air mixtures 02 p0286 N68-11688 Priction coefficient and Stanton number for high temperature, subsonic, turbulent gas flow in round tubes

02 p0287 N68-11691

Heat transfer from wall to turbulent gas flow inside pipe at large temperature gradients 02 p0287 N68-11723

DP-419 TR-117-ME-FI REPT.-483-0)

Heat transfer in supercritical region of carbon dioxide in turbulent flow in seed pipe 02 p0287 N68-11725 incompressible turbs (NPL-AERO-1232) 10 p1516 N68-19916 layer calculations on ting cus or density D-67-88 02 p0288 N68-11730 10 p1516 N68-20091 turbulent annular flow 02 p0288 N68-11733 ed spectra, plan on for turbo 02 p0289 N68-11737 coupling in turbulous [NASA-CR-93838] 10 p1559 N68-3 iscout, compressible tric flut channels 12 p0289 N68-11741 surface 10 p1614 NSS-20137 Heat trender in them res in turbulent flow pa heat transfer in entry Effect of entry conditions action of tube with turbulent flow 02 p0289 N68-11742 [AD-666581] 11 p1685 N68-21262 Flow equations for determining friction resistance uring unsteady flow of fluids in tubes tubes 02 p0202 N68-11753 effects - theory and app [ONERA-TP-520] 12 p1840 N68-22165 Kolmogoroff scaling of d subrange in turbulent flow (NPL-AERO-1220) compressible, viscous resoluted in terms of 03 p0334 N68-11925 12 p1947 N68-22254 Damping of turbu [C7-2535/020] w by long chain molecules 03 p0337 N68-12650 High speed fluid film (NASA-CR-1058) **Axial turbules** nts in coaxial flow of 12 p1883 N68-22810 (NASA-CR-960) person on wind Effect of ambient to madel model of aircraf NSRDC-2561) 04 p0495 N68-13612 Micrometeorology of turbulent flow field atmospheric surface boundary layer
[BNL-11800] 05 p0685 N68-14217 13 p2051 N68-23275 por condensing techniques 13 p2170 N68-23750 Wall suction effects on turbulent flow in porous lindrical tubes 05 p0649 N68-14997 similarity solutions in or other change in a al parameters, and of-rbulent flow Analogy between me fect of streamline curv. [NPL-AERO-1231] INPL-AERO-1242] 13 p2054 N68-24005 or poster flow 06 poste N68-15458 er entry region s Single turbulent stre deflection in flow from (FTD-HT-23-531-67) tulent jets 06 p0029 N68-15841 for solution of Nasian on dimensional turbules Average and local minar and turbulent ransfer cuefficients in circular channels with (SF/TN/5) 13 p2035 N68-24158 06 p0796 N68-16022 Insensitivity of tur and Reynolth number [NPL-AERO-1057] onible, coazial streams 07 p0987 N68-1689 Mixing of furth 14 p2240 N68-24729 Holograms as visual bandwidth product in hoptical signals or imagin [NASA-CR-92712] ys, reduction of space-phy, and propagation of gh turbulent media 07 p1036 N68-16924 [ARC-RAM-3527] 14 p2100 NGS-24769 d proportion on energy odel for turbulent 14 p2242 N68-25028 by distribution using hea-mic techniques 15 p2430 1466-25800 Turbulent water fi 08 p1219 N68-17707 [NASA-CR-61837] Perturbation theory for predicting electric field in-uced instability in fluid with stabilizing temperature ed on heat transfer and elseity in turbulent bean NASA-CR-93333) 08 p1220 N68-17953 Mean properties of to compressible jets issuing [PIBAL-1022] dary layers [NASA-TN-D-4611] 15 p2574 N68-25917 equations for solving ple plane, turbulent flow technique for remote and partial pressure in ion of local temp REPT.-70332-511 15 n2574 PMB-26921 08 p1164 N68-18098 to the phone pr of uphore, cylinder, disk, ent air flow 15 p2576 1668-26407 on heat or 08 p1184 N68-18099 FTD-MT-67-74) tion for determining lift, irfoil in nonuniform shou 09 p1265 N68-18338 for in turbs 09 p1447 N68-18442 ture and parameters of 09 p1327 N68-18677 turbulent liquid flowing in pipes [NASA-TM-X-53703] 09 p1350 N68-19078 cted ship propellers 09 p1415 N68-19148 reportion in its 09 p1331 N68-19473 10 p1513 Nee-19524 16 p2714 NGB-27534 76107-2)

Effe tures it [NAS.

Tur

TURBU

NT I

hind o

flows [ARC

Flor

Basi

Vor

[NAS

Tur

Soit exhau [APL

(PIB)

at var

Mo mand (NAS

Tu

Bor flow lence [REF

wake (VK)

Fic buler [IIHI

Tu ing i veloc

Gr in wa

TURIN

A

[SEL

PRA

Mo

SUBJE

TURBULENT HEAT TRANSFER ent flow of water over rough inside surfaces of test pipes 16 p2648 N68-27847 er and quartz conted, 16 p2663 N68-27848 tion for turbulent flow through rod [GEAP-5411] 16 p2704 N68-28010 Turbulence in pipe flows of gr [TR-118-MAE-F] n-solid suspensions 16 p2649 N68-28180 ultion from lan to turbulent flow in near wake of supersonic re [NASA-TN-D-4645] 16 p2585 N68-28220 Aerodynamic stabi its on dynamic model of electric power station [NPL-AERO-1227] 17 p2804 N68-29383 Laser beam measurements of sund fields and turbulent gas fi of frequency spectrum of sound fields [ISL-8/67] 17 p2922 N68-29392 al V-shaped notches in ent flow Drag forces of two di ansonic and supersoni 18 p2996 N68-29991 Semiempirical equal thermophysical proper flows of various fluids (FTD-MT-24-115-67) 18 p3187 N68-30143 Scattering amplitude a by time dependent autoc acattered by turbulent man [NP-17456] e fluctuation studied in functions for light 18 p3145 N68-30331 nt flow to channel or Particle tran WAPD-TM-765] 18 n3064 N68-30624 nts in initial section Velocity fluctus of turbulent axity to [TG-230-T552]

on to turbulence in (BN-542) 19 p3340 N68-31430 m of fluid motion review of research on fluids, turbulence flow me, and homogeneous wake formation, heteroge response, boundary layer turbulence theory [AFOSR-68-1268]

18 p3064 N68-30644

19 p3267 N68-32089 Nonviscous gas jets in rarefied a (REPT.-67-11) 20 p3461 N68-32628 base flows at subs

integral theory for to and supernotic speeds 20 p3463 N68-32960 d of integral rei ed to solution of iny layer equations 20 a3465 N68-33195 (NASA-TM-X-61169)

vective heat each g disks of gas turb ulent flow between 20 e3611 N68-33264

Wind nick general two near water surfaed to turbulent shear 21 p3678 N68-33703

rw, including effects of 21 p3792 N68-33741

on drop size distribu-miscible liquids 21 p3679 N68-33870

city profile analyses for belent boundary layer 21 p3680 N68-34010 total skin friction for [NPL-AERO-1252] Drug of cylinders all or pa at supersonic boundary laye rend in tu

22 p3856 N68-35025

22 p3858 N68-35192 22 p3870 N68-35561

ent flows of stably 22 g3863 N68-35735

23 p4184 N68-36040

(NASA-TN-D-48/5) 23 p4044 N66-36071

23 p4046 N66-36343

Disturbances caused by shock wave interactions with entropy discontinuity in turbulent flows [NASA-CR-98035] 23 p4052 N68-37232 Transport of anisotropic or low in [LA-3947] 24

w intensity turbulence 24 p4242 N68-37452 Flat plate laminar flow between fixed concentric

24 p4243 N68-37499 turbulent electric arcs [ARL-68-0067] 24 p4325 N68-38203

Mean gradient and spectral an analyses of turbulent en National Laborato-

24 p4287 N68-38402

omparison of turbulent wind spectra from measure-tts at Hamford, Washington and Liberal, Kansas 24 p4287 N68-38404

TURBULENT HEAT TRANSFER

Linear theta pinch studies to achieve collisionless empression and turbulent heating 01 p0120 N68-10893 Analysis of shear a turbulence and turbu correlation equations ear and normal strain effects on weak urbulent heat transfer using two point tions obtained from Navier-Stokes and

(NASA-TN-D-4273) 02 p0283 N68-11491 Turbulent heat tran plane curved channel [NASA-TT-F-11382] sfer of incompressible fluids in

04 p0596 N68-13480 Heat transfer characteristical generating liquid metal ristics for turbulent flow of tals between parallel plates heat generating liqui with wall heat transfer [NASA-TN-D-4336] 05 p0752 N68-14042

Single correlating equa convection heat transfer of through tubes over wide re [NASA-TN-D-4332] ation for single phase forced coefficients for turbulent flow es of temperature ratios 05 p0753 N68-14240

est conductivity effects Turbulent heat trans on magnetospheric tem [NASA-TM-X-63098] nperature distribution 07 p0993 N68-17139

Heat transfer mecha in presence of super in oscillating flow studied used longitudinal standing (TR-483-F) 09 p1447 N68-18427

Theoretical and exp transfer in concentric using analogy of impul [JUL-506-RB] tal determination of heat ar spaces between pipes heat exchange 11 p1804 N68-21236

Experimental study of effect of finite homogeneous reaction rates on heat transfer in turbulent tube flow [NASA-CR-94538] 13 p2166 N68-23192

basic and composite ns at hypersonic speeds 13 p2171 N68-23964 [D2-113531]

Experimental mer of turbulence structure, vertical temperature dif-13 p2102 N68-24153

rbulent heat transfer at (D2-113531-3) 13 p2173 N68-24173

fer in dilute, viscoelastic carboxymethyl cellulose and Turbulent heat tra stilled water solutions NASA-CR-992611

16 p2797 N68-28237 Molecular transport with systems of gaseous paraf-fins and convective transport from single cylinders, single spheres, and arrays of spheres into turbulently flow-ing streams

17 p2985 N68-28620 20 p3552 N68-32301

21 p3791 N68-33612

Heat transfer coeffici metals in heat exchange [FTD-HT-67-353] lent flowing liquid 23 p4186 N68-36302

TURBULENT JETS ing jet trajectories for

Theoretical model for projet cross-flow dynamic pressu 04 p0432 N66-12947

or solving elliptic equations governing stendy tra-and matter in surbalent flow (SF/R/2) 10 p1514 N68-19575

opic temperature (AFML-TR-67-371) 10 p1574 N68-20273

11 p1681 N68-20691

erged in

12 p1861 N68-22222

Local pressure fields as flow in jets [ARC-CP-989] 13 p2051 N68-23174

Heat and momentum transfer for impingement normal to surface by compressible turbulent jets of hot air 16 p2796 N68-27846

Similarity theorem for determining noise intensity propagation in static and moving turbulent jets [5M-23246] 20 p3400 N68-32231 Turbulent air jet mixing, and mass and heat transfer

(FTD-HT-23-854-67) 20 p3612 N68-33350 Turbulent air jet mixing from slit nozzles 20 p3466 N68-33351

Geometry and Reynolds number effects on deflec-tion of plane turbulent jets by convex walls and mechanism of high pressure recovery in convex-walled amplifiers (NPS-59SL8061A) 22 p3859 N68-35264

ent buoyant jets in stratified Characteristics of turb or flowing ambient fluids 23 p4046 N68-36307

Incompressible fluid motions in laminar and turbu-[FTD-HT-23-669-67] 23 p4141 N68-36612

Effect of wake parameter on characteristics of an ax-ymmetric turbulent jet in wake flow isymmetric turbuler [FTD-HT-67-311] 23 p4049 N68-36614

TURBULENT MIXING

Turbulent mixing of two streams, with profiles and accay downstream of coaxial mixing behaving in nalagous form to near and far wake problem 01 p0050 N68-10119

Turbulent mixture of incompressible jet fluid sur-ounded by fluid of same nature 01 p0050 N68-10175

Oceanographic studies or turbulent mixing, and waves es on bottom relief, sediments, 06 p0832 N68-15029

Velocity and density profiles in mixing region reween adjacent half jets of dissimilar fluids [NASA-CR-957] 06 p0827 N68-15571

Shear layer mixing, hydrocarbon oxidation, and car-bon cloud radiation models for liquid rocket engine ex-haust plume analysis [NASA-CR-61494] 06 p0927 N68-15848

Small-scale structure of turbulence in curved mixing layer at primary jet speed of 34 ft/sec [PB-176165] 07 p0986 N68-16772

Linear energy transfer benomena of rarefied gases insfer model for turbulent 08 p1219 N68-17707

Similarity solutions for laminar and turbulent mixing of two parallel streams 09 p1326 N68-18480

Design and fabrication of cor tion and test stand for evaluating composite propu [NASA-CR-93548] sion system 09 p1415 N68-19123

ilarity solution for turb lent mixing between jet and faster moving coaxial stream [NASA-TN-D-4441] 09 p1330 N68-19246

Numerical solution for inters wave with turbulent mixing region raction of moving shock 10 p1515 N68-19814

nts on turbu-

10 p1515 N68-19865 bulent mixing of semi-contained compressible as at constant pressure and small relative flow an-

11 p1683 N68-20888 Subsonic wind tunnel studies of rotating bodies and effects on aerod es of vortices on slender perodynamic coefficients

[ISL-10/66] 17 p2804 N68-29391 Hot-wire anemometer mixing in coaxial flow stres

18 p3039 N68-29726 Pressure and velocity fluc ent mixing and other regio troubal number measurem uations and fields in turbu-ns of air jet using hot wire

18 p3063 N68-30282 ng of jet flow in laminar

boundary layer [PTD-HT-67-34] 18 p2999 N68-30633 ilent mixing of subsonic (AEDC-TR-68-133) 22 p3859 N68-35334

Scan limited automs

ta and context limited grammers

Memory structure of finite state machines (EE-683) 13 p2034 Ne8-23374

13 p2034 N68-23504

EX

inly

2222

hear

174

air 846

sity

231

afer

350

351

64

ied

07

ou-

12

ız.

14

má

19

73

1

1

ring and deform

nd fractures caused by resium single crystals 05 p0677 N68-14642

05 p0678 N68-14868

mechanical proper-molybelesses, and

10 p1540 N68-20270

11 p1711 N68-20720

12 p1953 N68-22121

13 p2138 N68-23981

19 p3295 N68-31873

of mechanisms of deltr

20 p3507 N68-336

22 p3800 N68-35665

15 m2488 N68-26299

01 #0111 N68-10635

02 p0234 N68-11146

05 p0735 N68-14089

05 p0711 N68-14417

05 p0623 N68-14428

OS p0716 NGS-1466

06 p1239 N68-17841

06 p1216 NGE-18013

10 p1566 NAS-19756

11 p1755 N

16 s2725 NGS-21

INASA-IN-D-4843)

22 p3866 N68-35011

23 p4174 N69-37413

of two fixed centers, and

to twist test for measuring

Asynchronous finite state controllers for dynamical systems such as spacecraft attitude controllers 15 µ2440 N68-26006 Approximation method for calculating deformation of axes of two plane-parallel turbulent gas jets during by climb [FTD-MT-67-80] 22 p3861 N68-35480 performance of h 03 p0354 N68-12713 urbulent mixing intensity and effects of fuel and ox-er concentrations and temperature on combustion flame propagation Turb for representing and analyzing performance of human operator in control of dynamic systems [NASA-CR-1112] 17 p2830 N68-28847 NASA-CR-918101 23 p4185 N68-36195 Theory of cellular logic circui for application to network analy [AFCRL-68-0148] Optical metallography and transmission electron icroscopy for monurement of inhibition of shock visating in prestrained from Visual study of large-scale turbulence effect on dis-ibution of suspended sediments with respect to flow is 18 p3042 N68-30374 Algorithm concepts as d theorems for solving tag 23 p4094 N68-36428 Twinning and low tenties of polycrystalline Effect of turbulent mixing on average fuel tempera-res in gas-core nuclear rocket engine NASA-IN-D-4882] 24 p4297 N68-37927 RTS-4422] 20 p3514 N68-32925 (NASA-TN-D-4882) Boolean functions for computinear systems with lumped para [JPRS-46217] puter logic and control of REPT.44-927-119-R11 Turbulent mixing during supersonic combustion of 2 semi-infinite streams of reacting gases [FTD-MT-24-361-67] 24 p4356 N68-38464 meters 21 p3666 N68-34683 alization of Boolean fu ory and by Turing mach ns by computers with EV. CEVS TURBULENT WAKES NT PROPELLER SLIPSTREAMS 21 p3666 N68-34684 ems for finite sequential Flow field analysis of supersonic turbulent wake begle crys [TR-28] 22 p3841 N68-35202 [NOLTR-67-86] 02 p0197 N68-11249 TURNING FLIGHT Dislocation drag mec Basic properties of two dim Thrust and lift interaction effects on equilibrium centry trajectories of winged spacecraft during turns RM-5499-PR) 10 p1591 N68-20002 flows [ARC-R&M-3468] 04 p0435 N68-13284 RM-5499-PR) Vortex shedding behind flat plate to study vortex otions in wake flows Flight simulator evaluation uneuvers used in procedure tu n of course revers 09 p1329 N68-19196 23 p3990 N68-36649 Boundary layer and wake survey data reduction techniques in compressible flows [NASA-TN-D-4401] 10 p1514 N68-19709 iron and di (SSC-193) TURNSTILE ANTENNAS Antenna decoupling m vehicle scale model (ELDO-RFI-GA) ements on ELDO laun Turbulent characteristics in wake downstream from 10 p1499 N68-20123 [RTS-4599] 10 p1515 N68-19765 TUTOR AIRCRAFT
U CL- 41 AIRCRAFT Decomposition theorems for predicting large eddy structures of turbulent wakes TWISTED WINGS TVC [CONTROL]
U THRUST VECTOR CONTROL 10 p1517 N68-20257 Solutions for turbulent isothermal jet flows in nozzle ionic speed [NASA-TN-D-4796] TWENTY-FOUR HOUR ORBITS [APL-TG-230-T537] 11 p1684 N68-21009 Lunar-solar gravitational perturbations for artificial satellite with twenty-four hour sidereal period [NASA-TM-X-60931] 09 p1427 N68-19335 Hypersonic flow around slender cone [PIBAL-1031] 11 p1686 N68-21698 shear in fiber reinfort (AFML-TR-67-407) Turbulent wake structure behind body of revolution at various angles of attack [TG-230-T546] 15 p2455 N68-26470 Spin stabilization of apogee motor for ELDO launch chicle used for satellite transfer to synchronous orbits and investigation of lateral stability errors WO BODY PROBLEM and investigation [NLR-V-1926] lity errors 10 p1601 N68-20489 Molecular mixing length method for determining chemical reactions in turbulent wakes [AVCO-EVERETT RES. REPT.-286] 16 p2641 N68-27024 TWENTY-SEVEN DAY VARIATION Quantum mechas (JINR-P4-3405) Twenty-seven day recurrence in cost sponding variations in solar and mage ic rays and cor d magnetic activities 06 u0901 N68-15057 Movement of forward heat shield in Apollo com-mand module turbulent reverse flow wake [NASA-TN-D-4691] 18 p3170 N68-30032 INASA-TN-X- 4651 Comparative data on har even day cosmic ray neu-ariations and sunspot numb Two body prof mechanics and tra [NASA-CR-1002] m com Turbulent near-wake of axisymmetric body at super-onic speeds measured in specially-designed wind tun-06 p0901 N68-15058 Twenty-seven-day recurrence tendency in geomag-netic activity deduced from daily character figures C8 from 1884-1964 [REPT.-22/1965] 06 p0834 N68-15363 19 p3363 N68-31177 Boundary layers of ships studied with sucking disks, ow visualization applied to wake of ship, and turbu-Solutions for projectories passing Twenty-seven day solar cycle on tropospheric tem-19 p3265 N68-31489 teraction of fluid motion - review of research on e formation, heterogeneous fluids, turbulence flow once, boundary layer response, and homogeneous B-SIE/XVIII/PP] 06 p0837 N68-15407 Mechanism of two I [ANL-TRANS-497] nor based on alternating ad nightplow 05 p0657 N68-14005 [AFOSR-68-1268] 19 p3267 N68-32089 light for measuring [REPT.-17/1964] Turbulent separated flows and boundary layers, ake mechanisms, shear layers, and flow models /KI-CN-66B] 20 p3466 N68-33308 IDI-82-06631 Radiance, radiant ninized grenade gle rom 100 to 200 km WRE-HSA-23) s radiant energy of alu-at twilight and at night Flow equations for hydra ulent wakes and jet flows dic analogies between tur-08 p1166 N68-17243 22 p3860 N68-35412 ts of twilight sky inon which seem Turbulence transfer from tu-ing from plane nozzle into turbulent stream discharg-13 p2063 N68-24079 NR. 2.3494 Two body inter-m viscopoint of a PNO/TH-100] saity of twilis [FTD-HT-67-302] 22 p3861 N68-35443 [NASA-TT-F-11572] 14 p2345 N68-24820 Gross characteristics and fir in wake of body of revolution se structure of turbulence Electron image converters for studying infrared to-inescence in twilight and night skies of upper at-24 p4193 N68-37597 TURING MACHINES (NASA-TT-F-11574) 14 p2260 N68-25395 uter programs dealing with Algorithms for cor ts of rodi (SEL-TR-11) Reduction of photometric m pht for influence of twilight ra 04 p0482 N68-13265 PNO/TH-1211 ation 16 p2759 N68-27480 Mathematical model stu lies for self organizing Wavelengths of hydroxyl /7,2/ band in twilight sky [RADC-TR-67-556] 07 p0971 N68-17025 INASA-TT-F-11573] 16 p2658 N68-28257 Mathematical model of auto [RADC-TR-67-555] nata for prediction 08 pl 152 N68-18049

Expe

Mati

Cri

Hy

Flo

Me

Co

Th

TV

H

E

adia (EU

tribe tion (EU

T

liqu

1

PN

PO

DLR-

Bubble chamber data on sizes and shapes of forward peaks in inelastic two body reactions 22 p3921 N68-34977 Experimental data on backscattering peaks in two body reactions initiated by hadrons 22 p3921 N68-34978 Spin phenomena and reson nce decay in two body 22 p3922 N68-34979 Regge pole and quark models for describing high sergy inelastic collisions and two body collisions 22 µ3922 N68-34980 ic and inelastic scattering, and two body in-er with large momentum transfer transfer 22 p3922 N68-34981 Regge pole model for high energy two body reac-ons, and multi-Regge pole model for many body 22 p3925 N68-34999 Relativistic two body problem with separable in-(JINR-P2-3865) 22 p3929 N68-35503 Hartree Fock appr body Hamiltonian calcu [TID-24142] n emphasizing single 23 p4116 N68-36538 uation procedure for quasi-23 p4126 N68-36989 TWO DIMENSIONAL BODIES Water alamming pressure on rigid two dimensional circular cylinder in ship loads prediction study [TAR-TR-6701] 01 p0144 N68-10735 ional crystal Shock wave pro 03 p0405 N68-12115 Laminar heat transfer to two dimensional blunt flat noned body in transcenic and supersonic flow [TAE-75] 04 p0597 N68-13654 nthesis procedures for tr ry, and non-binary acrays nional, periodic 07 p0966 N68-16983 Bending plate equa-mal elasticity proble ons for solution of two dimen-07 p1093 N68-17135 es between finite two-dimen 13 p2160 N68-23486 Integral methods for pre-under to blant two dimensificting afterbody heat onal configuration subected to separated fit NASA-TN-D-4443) 16 p2650 N68-28282 g diffraction of plane 18 p3121 N68-29628 s of min er two d [NASA-TT-F-11803] ic flow 18 p2998 N68-30388 SESM-66-221 20 p3601 N68-32594 of earth radiation belts 21 p3761 N68-33855 21 p3723 N68-33891 nalysis of two dimes-(AFFDL-TR-68-38) 22 p3973 N68-35488 WO DEMENSIONAL FLOW NT COUETTE FLOW Finite difference or ferential equations for and heat in two dimen (SF/TN/2) edution of elliptic dif-et of matter, vorticity, 01 p0148 N68-10130 Fortras 4 o for solving steady state [MD-19] 01 p0050 N68-10143 dy of two dimensional sen Mach 1.64 to 3.08 02 p0198 N68-11278

Two dimens vincous flow [C7-2239/020] VKI-IN-16] (ARC-29142) [DLR-FB-68-01]

two dimensional turbulent boundary layer [ARC-R&M-3484] ional gr atmospheric turbule [NASA-CR-91116] Fortran 4 computer program for calculation of su-personic flow fields with viscoss effects [GDC-DBE67-003] 04 p0491 N68-12814 Numerical stability analysis for two dimensional Basic properties of two din flows [ARC-R&M-3468] Mathematical model for dynamic behavior and re-stance during one and two dimensional flow 05 p0703 N68-14898 Two dimensional flow analyses and low speed wind annel tests of compressor blades to determine cascade Mathematical model of two dimensional flow for oil migration studies [NR-168] 05 p0649 N68-14980 nd transitional heat transfer in two dimen-ted flow behind sharp protruding leading del Laminar and transional separated flo edge step model [TAE-71] Hyperbolic flow equations for two dimensional iscous supersonic flow isobars in boundary layer flow wer curved surface Thermal resistance of heat flow through two dimensional symmetrical, and eccentric constrictions (NASA-CR-92574) 06 p0927 N68-15872 Equations of motion and method of characteristics w two dimensional jet flow from sonic nozzle ME-1058-6608F1 Stability of two dimen [NLR-TN-T-182] Surface curvature effect on two dimensional steady accompressible laminar boundary layer flow DLR-FB-68-01] 06 p1162 N68-17762 Two dimensional laminar of layer computer program for per [RAE-TR-66243] Theoretical studies of aerodynamic components to btain configurations having high lift to drag ratios in scuous interaction regime Conditions near separation incompressible turbulent flow [NPL-AERO-1232] Integral method for calcula bulent boundary layer develop [NPL-AERO-1234] Exact and integral me laminar, two dimensional (ARL-67-0273) of rotating channels (DLR-FB-68-07) FORTRAN computer prog dimensional subsonic inviscid tionary circular cascade of bi stream surface of turbomachin [NASA-TN-D-4525] er program for calculating two inviacid flow for rotating or sta-de of blades on blade to blade Calculation method for two dimensional equilibrium flow of radiating gas in axially symmetrical nozzles [ANL-TRANS-537] 12 p1863 N68-22733 Two dimensional two fluid nonlinear computer odd for low beta plasma interchange instabilities 13 p2124 N68-23215

dary layer behavior 03 p0297 N68-12478

se analysis of aircraft to

03 p0298 N68-12621

04 p0493 N68-13110

04 p0435 N68-13284

05 p0732 N68-14966

05 p0649 N68-14980

06 p0925 N68-15451

06 p0828 N68-15664

m sonic nozzte 06 p0831 N68-16060

07 p0985 N68-16561

nal transonic flows around

perfect gas 08 pi164 N68-18058

09 p1265 N68-18330

10 p1516 N68-19916

ng incompressible tur-ent in two dimensions 10 p1518 N68-20516

ds of solution for steady, undary layers 11 p1682 N68-20699

nt boundary layers at walls

11 p1685 N68-21220

11 p1619 N68-21374

TWO DIMENSIONAL JETS

Similarity, and correspondence of the subject of th

Equations of motion and m for two dimensional jet flow fro [ME-1058-6608F]

AE-270A, PT. 1)

ing adiabatic wall effec-dimension jet flow 01 p0050 N68-10330

02 p0200 N68-11488

ethod of characteristics m sonic nozzle 06 p0831 N68-16060

e line in two dimensional

al turbulent base

non studied in two 13 p2051 N68-23337 Numerical solution of complete, incompressible advantate Navier-Stokes equation for two dimensal channel with diverging section 13 p2053 N68-23732 High conductivity effect on two dimensional plasma [AFOSR-46-0740] 13 p2129 N68-24047 Finite difference mokes equations for st ethods for solution of Navier eady two dimensional turbulen (SF/TN/5) 13 p2055 N68-24158 Characteristics method for computing two dimensional equilibrium and perfect gas vortex flows [NASA-TT-F-11694] 15 p2450 N68-25795

Compressible laminar wake behind long slender cylinders 15 p2452 N68-26165 Thin airfoil theory for predicting effect of varying axial velocity on quasi two dimensional flow through cascades 15 p2453 N68-26204 Wind tunnel model for study two dimensional boundary layer dy of supersonic laminar, 15 p2453 N68-26229 Characteristic equati-sional and axially sym eversible processes [FTD-MT-67-70] 16 p2641 N68-26964 flow through rod bundle [GEAP-5411] New method for calculating two dimensional stonic flow on thin wing profiles with small angles of 17 p2801 N68-28450 [TIL/T-5753] Optimum supersonic diffusers - relationship with ap-ended ram jet, flow field computations, buzz suppres-or, central body contour adaptation to variable flight Mach numbers [RAE-LIB-TRANS-1285] 17 p2962 N68-29459 Predicting normal force induced in boundary layer paration immediately ahead of accordary injection IS p3059 N68-29773 [NOLTR-68-5] Marching procedure for determining inviscid two imensional sonic flow past blunt symmetrical bodies ARC-CP-992] 18 p2994 N68-29837 [ARC-CP-992] merical analysis of unsteady flow in two dim sional square cavities [NASA-TM-X-52459] 18 p2997 N68-30043 Strouhal and Reyn flow around circular cylinders [NASA-TT-F-11763] 18 p2998 N68-30337 Gas density gradient effects on adiabatic wall film cooling in two dimensional wind tunnel flow [ARC-29928] 18 p3064 N68-30609 Two dimensional test summary on rotor blade dynamic stall and oscillation of helicopter airfoils [D8-0678-1] 19 p3196 N68-31859 integral prediction method for two dimensional, in-ompressible, turbulent boundary layers using kinetic [MD-21] 20 p3463 N68-32967 Two dimensional computer program for numerical computation of supersonic compressible flow fields [SCL-DR-67-66] 20 p3464 N68-33076 Theoretical and experimental study of steady state wo dimensional flow of viscous, heat conducting fluids cross finite size horizontal plate 20 p3612 N68-33462 dimensional flow induced by body moving at at speed through linearly stratified fluid 21 p3677 N68-33622 Time dependent computation of blunt body shock layers for two dimensional symmetric and axisymmetric flows [PIBAL-68-15] 21 p3683 N68-34608 Similarity solutions for two dimensional, steady iscous magnetohydrodynamic boundary layer flow SR-56) 22 p3942 N68-35268 (SR-56) Differential method of solving two dimensional Navier-Stokes equations for viscous compressible gas flows 22 p3860 N68-35360 Effect of leading edge bit dimensional inlet type flows [NASA-CR-1145] ness on hypersonic two 22 p3800 N68-35523 Wall jet wind tunnel tests in two dimensional flow sed to simulate ground effect of vertical takeoff air-(AD-673200) 22 p3806 N68-35705 bility of inviscid fluids 23 p4043 N68-36042 Two dimens nal Taylor instr First order non-affine integral solution for two mensional incompressible laminar boundary layer 24 p4243 N68-37521

Viscous fluid flow induced see motion of take walls at a

[APOSR-47-2255]

CEAR-3141

d by sinusoidal traveling t moderate amplitudes of

02 p0198 N68-11332

discontinual analysis of ing liquid 03 ph425 Nest-12167

03 p0426 N68-12367

and heat conduc

TWO FLUID MODELS

[NASA-CR-956]

[BNL-11532]

[AERE-TRANS-1076]

Experimental study of local heat transfer coefficient in two dimensional wall jet on circular cylinder [DLR-FB-68-25] 17 p2984 N68-28471

Mathematical model of two dimensional jet for pre-dicting attachment distance to aidewall 21 p3680 N68-33885

Numerical and experimental analysis of two dimensional jet interaction with diffecting stream
24 p4244 N68-37676

Free jet mixing analysis for parallel streams of dif-

Two dimensional two fluid nonlinear computer model for low beta plasma interchange instabilities 13 p2124 N68-23215

Slip ratio effect on crucial boiling length in two phase

Hydrodynamics of steam and water mixtures in verti-cal heated and unheated pipes at low superficial veloci-

Reactor cooling studies on vertical motion of two phase mixture in round ducts and on thermal crisis with annuniform thermal flux in simple geometries [EURAEC-1912] 07 p1027 N68-16298

Two phase flow structure in nine-rod channel with steam water at 1000 psia flow vertical upward [GEAP-5480] 07 p1027 N68-16316

Critical mass flow behavior of two phase choked hydrogen and nitrogen system [NASA-CR-92722] 07 p0984 N68-16447

Hydrodynamic friction coefficients for fluid flow in tubes with lubricated surfaces [FTD-HT-66-595] 08 p1162 N68-17887

Flow regime transitions at elevated pressures ob-served in vertical two phase flow

Measurement, interpretation, and use of unsteady momentum fluxes in two phase flow [REPT.-70318-50] 11 p1685 N68-21155

Computer program for axisymmetric two-phase eacting gas nonequilibrium nozzle flows analysis NASA-CR-92058] 12 p1858 N68-21867

Hydrodynamics of two phase liquid-vapor flow at

Thermodynamics and fluid dynamics of saturated water flow discharge from ducts
[AEC-TR-6928]
12 p1863 N68-22790

Two phase gas-liquid flow dynamics - flow oscilla-tions in transparent parallel hested channels and accustic velocity in two phase flow. [DSR-74629-1] 392165 N68-23085

Heat transfer analysis of annular two phase flow in circular tubes

Phase and velocity distribution in two phase adiabatic annular dispersed flow [EURAEC-1091] 13 p2056 N68-24287

Theoretical study of film thickness and velocity dis-ibution in two phase annular flow at adiabatic condi-

Two phase flow through apertures

reacting gas nonequil (NASA-CR-92058)

(KAPL-3358)

[AERE-R-5145]

04 p0496 N68-13619

05 p0648 N68-14759

10 p1512 N68-20049

11 p1681 N68-20623

12 p1863 N68-22627

13 p2167 N68-23448

14 p2240 N68-24468

steam-water heat transfer loop 1 13 p2169 N68-23657

01 p0146 N68-10008

DEX 26165 rying 6204 ninar, 6229 menulent 010 sub-450 apigh: 410 773 two 8 837 en-143 nai 137 lim 09 de 59

in-67 al 76

2

12

(EUR-3765.E) Thermodynamic stabilities of liquid-gas two phase

[RT/ING/68/1, PT. 1] 14 p2369 N68-24480 Boundary layer characteristics for two phase /gua-liquid spray/ flow over circular cylinder 14 p2242 N68-25110

TRANSFUGUE 2A digital code for transient two phase flow in single heated channels [NAA-SR-12503] 16 p2791 N68-27017

Acceleration of liquids in two phase flow nozzles {NASA-CR-95146} 16 p2734 N68-27202 Void fraction distributions in liquid flow in closed loop system ns in vertical co-current gas-18 p3058 N68-29709

Measurement of void fraction in two phase sodium potassium and argon flow by gamma ray attenuation [EUR-3935.F] 18 p3063 N68-30431 Prediction techniques and experimental results of two phase flow in spray coolers [AEDC-TR-68-127] 19 p3264 N68-31378 Computer program to calculate coolant ejection rate in fast reactors during boiling accidents [RT/ING/68/10-PRU-R-/68/6]

19 p3310 N68-31465 Pressure wave propagation in adiabatic two phase (DSR-74629-2) 20 n3462 N68-32781

Behavior of single component, two phase flow of earn and water droplets through nozzles 20 p3464 N68-33072

Electrical resistance measurements of liquid-vapor interface characteristics in two phase annular flow 21 p3678 N68-33661

Characteristic velocities and dispersion coefficients for two phase chromatographic system 21 p3648 N68-33871

'ariational approach to two phase creeping flow blem involving free interface 22 p3855 N68-35004

Prediction of wave amplitude generated on interface between gas and liquid flowing parallel in horizontal channel

22 p3856 N68-35014 Liquid film structure and drop size distribution in to-phase flow

22 p3856 N68-35036 Self-sustained oscillations in heated two phase flow in relation to nuclear reactors [C.E.-TRANS-4820] 22 p3863 N68-35631

Detonation wave propagation in tube containing gaseous oxygen and liquid fuel in form of drops or film layer on walls 23 p4185 N68-36104

Electrical impedance measured two phase flow [KR-118] ts of void fraction 23 p4063 N68-36826 Void fraction, pressure drop, and heat transfer coefficients in two phase flow
[NYO-3679-3]

23 p4188 N68-36856

23 p4188 N68-36856 Forced convective heat transfer in single and two phase flows [RT/RNG/68/9] 24 p4354 N68-37842

TWO PHASE SYSTEMS [MATERIALS]

TWO STAGE TURBINES Performance of two-stage axial flow turbine operating at different rotor tip clearance [NASA-TN-D-4388] 05 p0607 N68-14639

Two stage potassium vapor turbine - materials sup-port of performance and endurance tests [NASA-CR-925] 07 p0938 N68-16351 Cold air performance test of scale model oxidizer pump drive turbine for M-1 engine - performance of first stage with inlet feedpipe manifold assembly [NASA-TN-D-4392] 07 p1073 No8-16413

Two stage turbine suitable for use in wet potassium vapor at temperatures of 1400 to 1600 deg F [NASA-CR-922] 07 p093 N68-16439 Mechanical design and development test program for two-stage potassium vapor Rankine cycle turbine [NASA-CR-923] 07 p0940 N68-17075

Design, and performance of facility for Rankine cycle testing of two stage potassium vapor turbine [NASA-CR-924, V. 3] 08 p1125 N68-18044 Aerodynamic performance of scale model oxygen pump-drive turbine for M-1 rocket engine [NASA-TN-D-4393] 68 pl 232 N68-18188

ines for use in Ran-Performance tests of vapor turbines for use in Ran-kine cycle space electric power generators [NASA-CR-72273] 09 p1276 N68-19007

Comparison of mixed and isolated flow methods for colled turbine performance using two simplified exam-NASA-TM-X-1572] 11 p1621 N68-21692 Brayton cycle alterna [NASA-TM-X-32430] for drive turbine aerodynamics 19 p3202 N68-31062

Optimum nozzle angle determined for multistage tur-[CE-TRANS-4755] 20 p3392 N68-32712

TYCHO CRATER Chemical analysis of rocks and soil and other scien ific results obtained for Tycho landing site by Surveyor 7 lunar probe [NASA-CR-97347] 24 p4343 N68-38246 Mechanical properties of Surveyor 7 Tycho lunding ite compared with properties of maria funar lunding

TYPE 4 BURSTS

Spectral diagrams based on single-frequency record of solar radio type 4 events collected from several ob-servatories 05 p0733 N68-14768

24 p4343 N68-38249

Tables on outstanding solar flares, type 4 bursts, polar cap absorption, and geomagnetic storms [NASA-TH-X-63120] 09 p1417 N68-19450

U TELEPRINTERS

TYPHOONS

Cloud see g, typhoons, earthquake forecasting. and pathology (JPRS-43872) 05 p0759 N68-14271

Development, velocity, and direction of typhoons 05 p0683 N68-14272 Numerical analysis of vector motion in severe trus-cal cyclones for predicting hurricane and typhoso movements (PR. 1)

[PR-1] 08 p1197 N68-17940 Nimbus 2 and ESS graphs of typhoon Mar [NASA-TN-D-4757] s 2 and ESSA 3 satellite observation photo-24 p4280 N68-37869

Convective instability of analysis of early stage typ of thermal wind in moist a [EMM-66-132] of inertia waves and physical phoon formation - adjustment atmosphere at low latitudes 24 p4282 N68-38134

U

U- 2 AIRCRAFT

Wave structure relation to clear air turbulence ob-served in U-2 sircraft over Sierra Nevadan (AFCRL-68-0001) 13 p2101 N68-23996 HASE.

Geological structure of Caucasus - Historical [ACIC-TC-1225] 01 p0053 N68-10022 n based on seismic data

Earth crust in Black Se and gravitational anomal [ACIC-TC-1223] 01 p0055 N68-10147 Gravimetric surveys of Monthukly structure in rela-tion to oil and gas deposits [ACIC-TC-1217] 01 n0035 N44, 10340

Crystalline buse structure and framing of southeastern Ruman platform from neromagnetic survey data [ACIC-TC-1236] O p0056 Non-10338 Soviet conference on scientific and technological developments in telecommunication, cybernetics, neconata theory, data processing, and medical electronics. [JPRS-43309] 01 p0030 N68-10681

Geological and geophysical data compiled for tec-nic mapping of Yakutian Autonomous Soviet Socialistic Republic [ACIC-TC-1148] 01 p0059 N68-10682 es charted in European

Geomagnetic field as ACIC-TC-12531 01 p0060 N68-10747 Conference in Les on primagnetism and 02 p0203 N68-11009 ACIC-1C-12521

Selected articles on manufacture in U.S.S.R. [FTD-HT-66-737] e sed instrument

02 p0185 N68-11291 Announced hibliography of Stural strength problems of spections of dynamic loads [ATD-68-14-72-1] viet literature on tiruc vehicles under condi 92 x6276 N68-11472

02 p0262 N68-11829 History of Russian (NASA-TT-F-413) cohernatios from vari-03 p0325 N68-12108

Critical survey of S ical theories of RM-5424-PR1 03 p0325 N66-12147 rificial precipitation in in Ukrahim steppe 03 p0364 N60-12271 hall-bearing correction Quantitative estimate of crease during cold half of y [JPRS-43549]

Methods for clouds in Caucan [JPRS-43546] 03 p0366 N60-12721 d at Seviet confirmed course chemistry 04 p0548 N60-13121 FID MT 46 (4)

04 p0529 NAR-13323 igation - 1986 to wiet Aniarctic w 04 passo Nas-13390 Surflexion, and talki

05 p0650 NAS-14063

nimbus over Ukraine 13 p2102 N68-24140

13 p2070 N68-24009

U.S.S.R. Review of Soviet dev [NASA-TT-F-11454] 05 p0742 N68-14215 Soviet research in plattry, radiochemistry, photomorphere and shock we una chemistry, nuclear chemistry, and chemistry [JPRS-44048] [FTD-MT-66-54] ical, geomagnetic, and meteoro Collected papers on Soviet developments in com-puter component, circuit, and memory design, and pro-gramming techniques [FTD.MT-64-69] 06 p0804 N68-15251 Soviet news item on Venus 4 de flight, and landing und measurements of [RAE-LIB-TRANS-1264] Geological interpretation Zolochev Lvov Batevo Uzhgoro Heat tra upper strata of Forecarpa Natural radioactivity of rock used in constructing cromic scheme of Ukrainian shield ong Yagotin-B Tectonic uplift of northern slopes of Sibera and Chu-Tectonic fractures and origin of Crimean mountain Description and formation of lower plateau of main rimean ridge ctonics of worth ern Ukraine, and identifiic of southwestern 06 p0836 N68-15396 Telluric current micros
U.S.S.R. E layer over Kiev 06 p0837 N68-15401 Soviet articles on [FTD-MT-64-560] and mechanics 06 p0862 N68-15426 Soviet scientific and technol and utilization of science for in gical progrem in 1966, proved national econo-[NASA-CR-92970] 06 p0930 N68-15774 Comprehensive surve Kamchutka, Kuril, and K [NASA-TT-F-11529] geological features of dorskiye islands 06 p0841 N68-15812 Current flow and effe of Jupan 06 p0841 N68-15862 almosphere and outer sp [JPRS-44343] Amounted bib of Soviet studies on upper 07 p0990 N68-16317 Chron 0962 N68-16350

05 p0627 N68-14751 talog computer 05 p0634 N68-14995 c ray variations, and biolog-corological effects 06 p0900 N68-15050 Soviet space biology and med [JPRS-44299] 06 p0916 N68-15304 Historical develop of ellevations along d profile 06 p0835 N68-15383 Soviet articles on m tric surveys of granitoid [FTD-MT-64-145] 06 p0835 N68-15384 Research in geophysics, U.S.S.R. and Soviet-bloc nati [JPRS-44734] al conductivities of 06 p0835 N68-15386 Atmospheric rocket of ternational Geophysical [NASA-TT-F-11422] 06 p0835 N68-15387 Soviet-bloc research in ast oceanography, terrestrial geop mosphere and space research [JPRS-44901] al field explorations of 06 p0835 N68-15388 etotelluric prob-Abstracted data on Soviet-bl netary at 06 p0836 N68-15389 06 p0836 N68-15390 06 p0836 N68-15392 ectric and hydrogeologic characteristics of al structure of central part of main Crimean t-bloc research 06 p0836 N68-15393 06 p0836 N68-15394 06 p0836 N68-15395 [FTD-HT-66-570] Soviet cybe (P-3600/14) n regularity at Korets, design, and integrat (ATD-68-18-87-2) 06 p0836 N68-15397 Tass press report ([NASA-CR-94111] Soviet textb Soviet cybe [P-3600/13] and China [ATD-68-10-33-1] Historical survey of Ri NASA-TT-F-4261 Summary review of Soviet up (PB-177192T) 6 of space cardiology 07 p0944 N68-16473 ments in cybernetics 07 g0970 N68-16678 06 p1167 Ness-17524 (FTD-HT-47-50) Technical progre [AFOSR-48-0590] red water in st GE #1204 N48-17535

rumentation, medical ele-n, and aircraft and engir 08 p1262 N68-1/681 a theories, and 08 p1129 N68-17682 Soviet research on thin plate and shell theories for reraft and engine design applications 08 p1251 N68-17683 Diagnostic use of fluorescent-antibody method in U.S.S.R. 08 p1129 N68-17684 ervations program to density changes based 08 pl169 N68-17685 08 p1130 N68-17742 ent of Soviet space biology and matics, mechanics, and as-09 p1361 N68-18631 ny, and space in 09 p1335 N68-19167 g in U.S.S.R. during In-10 p1519 N68-19571 ronomy, meteorology, hysics, and upper at-10 p1526 N68-20529 oc research in astro 10 p1598 N68-20530 racts on atmospheric circu ites, weather modifications 10 p1553 N68-20531 rts on oceanography, 10 p1526 N68-20532 trial geophysics, volnetry 10 p1526 N68-20533 and cosmic rays 10 p1526 N68-20534 mary of U.S.S.R. conference on auto 11 p1666 N68-20763 ter technology 11 p1668 N68-21161 developments, logic 11 p1668 N68-21223 11 p1789 N68-21297 chemistry methods of afacturing techniques 11 p1700 N68-21472 11 p1670 N68-21520 unination levels, and at various points in 11 p1735 N64-21529 nd facilities in U.S.S.R. 11 p1665 N68-21842 rocketry and space ex-12 p1971 N64-22262 ce program 12 p1967 N68-22343 Development of fast breader reactors, biological pest control, and progress in cybernetics technology in USSA. 12 p1985 N68-22572 onal field of moon using 12 p1970 N68-23036 Union in coding theory 13 p2026 N66-23293 ocumulus clouds 13 p2100 N68-23898

mentation used in U.S.S.R. [ATD-68-100] Frequency of occurrence of 5/10 cloud cover of cu-ulus and cumulonimbus over Ukraine U.S.S.R. powder metallurgy and cermet manufacture for atomic technology [JPRS-45339] 13 p2085 N68-24167

Transmission channel equalizers and surveys of studies on mathemat mechanics, and polymers in U.S.S.R. alizers, enzyme therapy, hematical pysics, applied 13 p2110 N68-24194 Soviet nuclear research, reactor technology, and production engineering articles [JPRS-45331] 14 p2290 N68-24602 Soviet and United States technological advances in paraged particle accelerators, and acceleration charged particle accelerat methods based on electron pla na properties 14 p2234 N68-24603 Theoretical contributions of Soviet acientists to research on elementary particle interactions, quantum theory, and quarks 14 p2303 N68-24604 Systems design and installation of powerful Soviet synchrophasotron for proton acceleration 14 p2235 N68-24605 Systems design and operation of Soviet cyclotron for accelerating heavy ions 14 p2235 N68-24606 Soviet research on achieving slow controlled ther-monuclear reactions, and techniques for creating, heat-ing, and confining plasmas 14 p2322 N68-24608 alyses of radiation nent in U.S.S.R., chemical rees, and technology for of radiation sourcing radioactive raw m 14 p2211 N68-24610 Structures and gravity ar in Baikal region and maxim [DRB-T-482-R] lies of cryogenic origin epths of permafrost 14 p2253 N68-25585 titanium mill products 15 p2512 N68-25694 [CERN-68-12] Soviet research in field aerospace life support systems - annotated [ATD-68-42-22-3] 15 p2400 N68-25973 Literature review on use of analog computers for conomic analysis of electrical power systems in economic analysis of U.S.S.R., U.S.A., and Jap (FTD-MT-24-316-67) 15 p2434 N68-26536 Corrosion of metals and alloys - electrochemistry of titanium, atmospheric corrosion protection by ammonia, and regional corrosion aspects
[FTD-MT-24-99-67] 16 p2674 N68-27116 16 p2674 N68-27116 History of radio co. U.S.S.R. ation development in 16 p2620 N68-27288 Summary of develop and network in U.S.S.R. of television equipment 16 p2621 N68-27293 Radio and radar navigation development and imsent in U.S.S.R. 16 p2621 N68-27295 Telemetry and remote conomy, agriculture, and ote control impact on national and meteorology of U.S.S.R. 16 p2622 N68-27306 wiet articles on crystallography of corundum and T-RC-251 16 p2688 N68-27363 U.S.S.R. studies in applied mechanics and technical physics - fluid mechanics, plasma physics, mechanical properties, shock waves, thermodynamics, polymers, combustion advairs. (FTD-MT-63-161) 16 p2714 N68-27575 Soviet articles on n es, mechanics, astronomy, and statistical d (FTD-MT-64-146) 16 p2715 N68-27756 June 1965 tracking data for Soviet artificial satellites in Polyot, Elektron, Cosmos, and Molniya series Molniya series 17 p2966 N68-28493 May 1965 tracking data for Soviet artificial satellites in Cosmos, Polyot, and Elektron series 17 p2966 N68-28527 May 1965 trucking data for Soviet artificial satellites Cosmon, Polyot, and Elektron series 17 p2966 N68-28569 February and March 1965 tracking data for Soviet artifical earth satellites in Cosmos, Polyot, Elektron, and Veskhod series 17 p2967 N68-28593 April 1965 tracking data for Soviet artificial satellites in Cosmos, Pulyot, and Elektron series 17 p2967 N68-28594

artif A So space [JPR

SUB

Obserth bital iments

Sor opera ment [P-36

Sum achiev [FTD-Paci winter [M-73 Conservets i Strai U.S.S.I [RTS-4 Brief (M-73 Sovie [M-711 Liter radiobis (ATD-

Appl incerion nation and cor USS npport Nysion IJPRS-Histo INASA

SUBJECT INDEX Feburary and March 1967 tracking data for Soviet tifficial earth satellites in Cosmos, Polyot, Elektron, ind Voskhod series Meteorology /review of Soviet news items and scientific articles/ 22 p3902 N68-34837 17 p2967 N68-28645 July 1965 tracking data for Soviet artificial satellites in Polyot, Elektron, Cosmos, and Proton series Proton series 17 p2968 N68-28674 August 1965 tracking data for Soviet artificial satel-lites in Polyot, Elektron, and Cosmos series 17 p2969 N68-28839 Soviet-bloc research in geophysics, astronomy, and ()PRS-45740) 17 p2877 N68-28915 Selected Soviet at [FTD-HT-67-181] Soviet research on space biology and medicine [JPRS-45706] 17 p2821 N68-28916 Soviet research on space-orie medical monitoring, and bioinstrum [ATD-68-33-108-1] 17 17 p2830 N68-29040 August 1965 tracking data for Soviet artificial satel-lites in Polyot, Elektron, and Cosmos series 17 p2973 N68-29442 17 p2973 N68-29442 September 1965 tracking data for Soviet artificial satellites in Polyot, Elektron, Cosmos, and Proton se-ries 17 p2973 N68-29443 Long range weather rocesses in U.S.S.R. - chi Soviet research in astronomy, meteorology, ceanography, geophysics, upper atmosphere, and sace programs - bibliographies M-74071 space programs (JPRS-45844) Machine tool exhibit (FTD-HT-23-764-67) 17 p2881 N68-29450 Soviet news items on cybernetics applications to operations research, aerospace medicine, and management planning [P-3600/17] 18 p3053 N68-30551 (FTD-HT-23-893-67) Soviet textbook on analog cor [FTD-MT-24-138-67] Soviet theory of crystoelectronic series of miconductor materials 18 p3043 N68-30678 Observations and orbit calculations for artificial earth satellite - computation of satellite position and orbital mechanics from synchronized tracking measuretrophysics, met restrial geophy (JPRS-464 | 2) 19 p3368 N68-32000 nary information on Soviet research in y and application of communication theory ses to telepathic communication 19 p3218 N68-32034 Methods and results of early and recent Soviet eoretical and experimental research in telepathy 19 p3218 N68-32035 Russian abstracts in meteo Analysis of Soviet experiments in telepathic commu-nication based on framework of information and com-munication theories 19 p3218 N68-32036 Summary data on Soviet manned space flight (FTD-MT-66-139) Abstracts on recent Soviet II mosphere and space research 20 p3584 N68-32323 anticylone effect on heastern Soviet Union 20 p3519 N68-32437 Pacific Ocean stratospheric winter thermal regime over north [M-7367] ent of tech Correlation of rain gage mean data on precipitation levels in regions of Soviet Union [M-7370] 20 p3519 N68-32439 curate high temperature m [NASA-TT-F-11931] Design concepts and of titude and high frequency cept and nighting radar [JPRS-46626] igraphic distribution of Jurassic deposits in 20 p3469 N68-32504 et bloc research on open mici 10 measurements of gamma Brief summary on Soviet investigation of transforma-on of photons and vector mesons oviet bloc resear tik 10 measuren leogenide system ctor physics tion of pho [M-7354] 20 p3545 N68-32964 Soviet analysis of space-time variability of cloud base Balloon-borne radi mospheric turbulences (FTD-MT-24-207-67) IM-71891 20 p3523 N68-32970 Literature survey with radiobiological investigations (ATD-68-105-108-9) abstracts on Soviet Experiments on sup accelerator /textbook/ [AEC-TR-6936] 20 p3407 N68-33037 Applications of mathematineering - boundary value promation processes, mechanical and control avatem theory tics in mechanical en-oblems, shear and defor-properties of materials, Technological level and protry in U.S.S.R. and other natio [NIC-TRANS-2653] mation processes, mec and control system theo (FTD-MT-64-558) 20 p3515 N68-33115

19

re

67

y.

no

im

03

M

05

06

T-

08

al

10

nin

85

73

36

of

16

in

88

ent

93

m-

95

06

63

ia:

75

56

les

93

ies

27

ies

69

93

U.S.S.R. studies in space bi apport systems for manor shysiological and psychological exchinerial experiments

History of developments in

Soviet-blue research in astronomy, meteorology, cosmography, terrestrial geophysics, and upper absosphere and aerospace science/review of news items and actentific articles/ 1783-464371 22 p.3865 Ne8-34835

[NASA-TT-F-11851]

iology and medicine - life ed space flight, human cal stress tolerances, and

design of Soviet helicop

riet news items and scien 22 p3957 N68-34836

21 p3631 N68-33909

21 p3767 N68-34166

sanography /review of Soviet news items and ific articles/ 22 p3865 N68-34838 Terrestrial geophysics /review of Soviet news items nd scientific articles/ 22 p3865 N68-34839 ce research /review of rticles/ 22 p3865 N68-34840 id and gas mechanics 22 p3860 N68-35385 et cybernetics 22 p3843 N68-35460 Long range forecasting of precipitation in May based a statistical analysis of data for European U.S.S.R. 22 p3907 N68-35674 Developing and improving energy conversion effi-ciency, electrification, and electric power transmission in U.S.S.R. [M-7428] 22 p3808 N68-35752 casting by synoptic gical review 22 p3908 N68-35996 it in U.S.S.R. - summary 23 p4067 N68-36285 Summarization of Soviet conference papers on early of invariance and its application to automatic 23 p4035 N68-36291 tallochemical analogy and inorganic complex phase 23 p4150 N68-36355 Selected Soviet abstracts in fields of geophysics, as-ophysics, meteorology, space, oceanography, and ter-estrial geophysics 23 p4055 N68-36550 elenology, and planetolo-23 p4163 N68-36551 ogy and climatology 23 p4094 N68-36552 23 p4094 N68-36552 Selected abstracts of Soviet literature on oceanog-raphy 23 p4055 N68-36553 Selected Russian articles on earth planetary struc-23 p4055 N68-36554 iterature on upper at-23 p4056 N68-36555 and instruments for ac-24 p4353 N68-37610 sting principles of low al-dio altimeters, and inter-24 p4290 N68-37730 icrowave resonate na radiation, term cular chemistry 24 p4302 N68-37893 diosonde mean es over U.S.S.R. regions 24 p4282 N68-38167 24 p4318 N68-38182 ction of atomic indus-24 p4320 N68-38243 cond Bulgarian artificial satellite tracking station 24 p4229 N68-38326 Review of Soviet space research since 1957, involving satellite series Zond, Mulniya, Proton, and Cosmon [NASA-TT-F-11465] 05 p0742 N68-14197 U.S.S.R. space program, servapers
U.S.S.R. space program, servapers
03 p0736 N66-14242
03 p0736 N66-14242

d space research in U.S.S.R.

09 p1336 N68-19172 es of U.S.S.R. space

mony held in Mosc 15 p2562 N66-24 Soviet space presented on c [JPRS-45658] Venera 4 design and matmosphere, Soviet apper ticipation in international [JPRS-45888] 17 p2881 N68-29414 17 p2882 N68-29455 Magnetic field study of inte Venus vicinity from Venera-4 s (JPRS-45830) erplanetary domain and spacecraft data 18 p3165 N68-30211 Soviet bloc research in ges space - bibliographies [JPRS-46149] 19 p3275 N68-32128 Soviet and NASA space terms of military and scient [FTD-MT-24-121-67] bjectives 20 p3613 N68-32382 Soviet near-space optical facilities [ATD-68-119-101-4] 22 p3853 N68-35396 nd-5 space probe 22 p3965 N68-35600 Earth-moon trajec [NASA-CR-97016] SU-3 complex for boson resonances quarks of two itsel nonets with same spin and purity and opposite harge conjugation charge conjugat (ISS-67/36) 02 p0249 N68-11820 High energy nucleon-nucleon scattering with large omentum transfer and chiral SU/2/x SU/2/ symmetry (TUEP-67-25) 04 p0551 N68-13894 Zero/4/ symmetry and effects of particle inters 19 p3337 N68-32130 Broken symmetry for U-spin and SU/3/ treated by group theory and algebra of currents [PM/68/1] 22 p3938 N66-35976 U TUBES U MANOMETERS UII- 1 HELICOPTER Hydraulic power trans-helicopter [USAAVLABS-TR-67-40] on systems for USI-1 03 p0301 N68-12285 trust bearing for UH-1 04 p0443 N48-13285 Development and performance of as for refueling system of UH-1 helicopter [USAAVLABS-TR-68-37] 21 p3621 N68-33663 Flicker induced vertigo fi UH-1 helicopter - flight tests [USAARU-68-11] sted rotor blades of 21 p3636 N68-34420 Design and fabri determing mechani of UH-1 indicuptor [C-3030] n of sonic analyzer capable of condition of propulsion system UII- 2 HELICOPTER Flight test results for UH-2 helicopter with lift and thrust augmentation [KAMAN-AC-RN-R-6018] 10 p1458 NAR-19962 for improving UH-2 R-622A1 19 p3200 N69-31867 to for cable guided bunch rodynamic flight test da ations of UH-2 helicopic 21 p3623 N68-33872 UNITREX INUCLEAR REACTORS!
U HIGH TEMPERATURE NUCLEAR REAC-TORS ULCERS 21 p3631 N68-3396 ULLAGE odytical and experimental data on liquid-uliage ling, and low gravity liquid-vapor interface stability 09 p1328 Non-18848 INASA-CR-61620) ULTRA SHORT WAVE RADIO EQUIPMENT
U VERY HIGH FREQUENCY RADIO EQUIPMENT ULTRANSCH FO

pale 32-throw out

SUB

17,1

ULT

ULTRAHIGH VACUUM Adhesion of ultrahigh vacuum cleaved silicates in contact with metal surfaces, and ultrahigh vacuum system for measuring electrostatic charging during AS-204 signal reception predictions for unified S-01 p0029 N68-10504 INASA-TM-X-630061 Techniques for improving Apollo spacecraft acquisi-tion using 8-band equipment [NASA-TM-X-63022] 01 p0032 N68-10894 [NASA-CR-92689] 07 p0982 N68-16826 Condensation pumps with limited evacuating power diffusion pump for low pressures, and evacuation pumps for ultrahigh vacuum RTS-43021 Design and development of ultra linear thoriated fungaten filament tetrodes [AD-660033] 02 p0188 N68-11245 pumps for ultrahigh vacuum [FTD-HT-66-489] 07 p1036 N68-16833 remeation, diffusion, and solution of nitrogen in tungsten and molybdenum by mass spectroscopic and ultrahigh vacuum techniques [WERL_323_52] Low noise ultrahigh frequency cryogenic mixers [FTD-HT-67-375] 03 p0332 N68-12232 Development of 100 watt S band traveling wave tube WERL-2823-28] 08 p1139 N68-17328 Ultrahigh vacuum chniques for determinis 04 p0486 N68-12998 mass spectroscopic ogen behavior in tung-Capacitor loading techniques for transverse electromagnetic resonators in ultrahigh frequency range [ECOM-2885] 05 p0635 N68-14325 [WERL-2823-27] 08 p1139 N68-17335 Sessile drip techniques of liquid-solid adhesion in in-ium-aluminum system using ultrahigh vacuum High gain ultrahigh frequency backfire antenna design and characteristics for communications, telemetry, and radio astronomy [AFCRL-67-0568] 05 p0631 N68-14623 10 p1557 N68-19691 Ultrasonic welding of copper in ultrahigh vacuum [UCRL-13331] 11 p1703 N68-20929 Technique for solving equations governing circula-on conditions of ferrite loaded stripline Y junction for Ellipsometric measurements of palladium optical altrahigh frequency circulators WRE-TN-WPD-34] constants in ultrahigh vacuum region [ORNL-TM-2114] 12 p1917 N68-22709 07 p0974 N68-16789 S hand turnaround ranging tra [NASA-CR-93669] Gold wire seals for ultrahigh vacu nsponder 09 p1306 N68-19390 acuum apparatus 13 p2074 N68-23583 UHF-plasma interaction, and two-stream instability Creep behavior of tantalu m alloys in ultrahigh t-carrying plasm vacuum for extended time periods [NASA-TN-D-4605] 12 p1945 N68-22077 13 p2085 N68-24111 Anticipated problems of reentry vehicle telemetry at Window seals for ultrahigh vacuu [REPT.-67-C-165] 14 14 p2263 N68-24502 ultrahigh frequenc [DOC.-67SD263] cies 12 p1844 N68-22431 Adhesive properties of metal, glass, ceramic, polymer, and mineral combinations in ultrahigh Design, fabrication, and testing of ring hybrid 5 band diode phase shifter 13 p2038 N68-23052 [NASA-CR-62074] 14 p2272 N68-25096 Ultrahigh frequency radiation effects on auditory treshold of humans Silicate surface preparation to represent lunar soil, and ultrahigh vacuum adhesion measurements [NASA-CK-1090] 17 p2965 N68-28373 measurements 17 p2965 N68-28373 13 p1997 N68-23132 Noise in ultrahigh frequencies and microwave ansistors as function of emitter current and collector Mathematical model for cost estimates and optimal outrol of ultrahigh vacuum system control of ultrahigh vacuum system [NASA-CR-61866] 17 p2867 N68-28899 13 p2040 N68-23778 sign and operational performance of solid state ul-Ultrahigh vacuum chamber design and experimenta to determine biological effects on bacteria 19 p3212 N68-32138 trahigh frequency prototype tele [NASA-CR-61767] metry transmitter 14 p2222 N68-24919 (TR-3) Design and performance of ultrahigh vacuum system for direct current sputtering electrodes [NASA-CR-86092] 20 p3457 N68-33129 Step-recovery diode ultrahigh frequency multiplier for artillery fune telemetry [HDL-TM-68-9] 15 p2437 N68-26653 Interplanetary space effects on S band telecommuni-Dynamic gas flowmeter for ult [LA-DC-9000] trahigh vacuum 20 p3479 N68-33147 17 p2851 N68-29085 E layer precession of ma tically trapped particles Simultaneous high frequency Doppler and ultrahigh namency incoherent backscatter measurement of aveiling ionospheric disturbances 22 p3918 N68-35719 19 p3272 N68-31673 Measurement of omnitron cryopumping and outgaming by ultrahigh vacuum pulse counting mass filter [UCRL-[7845] 22 p3853 N68-35915 Fan beam model for pola ais on supernovae remnants [AD-671151] tion distribution analy-19 p3362 N68-31860 Ultrahigh vacuum reflecte eter for use in studying reflectance, transmittance, and photoemission [DESY-68/26] 23 p4065 N68-37173 Functional capabilities and physical arrangement of receiver exciter subsystem in unified S band Apollo ULTRALOW PREQUENCIES
U EXTREMELY LOW RADIO FREQUENCIES ound station system 20 p3438 N68-33162 [NASA-CR-96384] Mean time between failure unified 5-band system of M work based on reliability and ammanued Apollo flights [NASA-TM-X-63323] failure and confidence limits for a of Manned Space Flight Net-lity and performance data from ULTRAPURE METALS Fabrication processes for producing high purity vanadium ingots [CEND-3742-325] 12 p1891 N68-22782 21 p3659 N68-34278 Electron microscopic analysis of pure aluminum sub-structure grains during thermal creep and pressure [SC-RR-67-2975] 12 p1892 N68-22963 as wave space environment 5 band power amp [NASA-CR-66648] relopment 21 p3660 N68-34309 Hydrogen diffusion mea rements on high purity Low noise ultrahigh fr [FTD-HT-23-1178-67] y amplifiers 21 p3669 N68-34447 22 p3889 N68-35090 Ultrahigh frequency ch ot airborne antenna for ULTRASONIC AGITATION 22 p3835 N68-35419 sc storage batteries, and ul-TR-446] teristics of 100 watt, 50 Design and operating sercent efficient, 5-band

ng wave take for space

23 p4031 N68-36587

tudy of shadowing and

metry entennes 23 p4021 N68-36765

By mounted VHF-UHF

24 p4229 N68-38227

04 p0556 N68-13236

05 p0666 N68-14579

or metals and nonmetals

[NYO-2471-31] Properties of silver zinc stor trasonic effects on nickel electro [FTD-MT-65-485] de performance 04 p0448 N68-13054 Effects of ultrasonic oscillations on oxenue-electrode in alkaline storage battery 04 p0448 N68-13056 Production of unife old drops by sonic, and ultrasonic scattering of liquid ju [DLR-FB-67-91] 08 p1164 N68-18029 Turbulence effects from sonic and ultrasonic violations during combustion of jet of liquid hydrocarbons 08 p1261 N68-18165 from mining ore (AD-669498) 13 p2075 N68-23819 dy of ultrasonically in-bles, and pits 15 p2473 N68-26235 Excitation and propagation of coherent elastic ul-asonic waves in piezo quartz at 114 GHz 19 p3352 N68-31167

Cavitation corrosion data acquisition and correlation sing ultrasonics and venturi tubes 15 p2485 N68-26655 Heating of copper tubes during drawing in ultrasonic 20 p3485 N68-32540 ULTRASONIC GRINDING MACHINES U GRINDING MACHINES ULTRASONIC MACHINING Design data and error effects for tools, tool holders, and machine systems in ultrasonic grinding ic grinding 06 p0850 N68-15472 in machine building 13 p2077 N68-24156 Applications of ultra [FTD-HT-23-597-67] ULTRASONIC RADIATION Literature survey of ultrai [AMRA-MS-67-06] testing techniques 03 p0347 N68-12272 Absorption analysis for ultras and propanol under pressure [TR-4] onic pulses in water 04 p0543 N68-12928 radiation diffraction of light en faces and single crystals scopy, and ultrasonic mission from liquid sur-04 p0545 N68-13468 gation and absorption along quantized magnetic field [NASA-TT-F-11455] 05 p0728 N68-14497 Ultrasonic studies of single crystal plastic deforma-on in gallium and of amplitude dependence in lead AFML-TR-67-72] 05 p0730 N68-14992 tion in gallium and of amp Ultrasonic attenuation of phonons in pure copper and aluminum to determine effects of gamma irradia-tion on electron-phonon interaction and phonon-dislo-[AFCRL-67-0369] 06 p0893 N68-15369 Longitudinal ultra smuth crystals mustion in single 07 p1070 N68-16965 Anomaly in ultrasonic atte ation in strong coupling and impure superconductors [AD-663465] 08 p1224 N68-17658 Analysis on ultrasonic spectrum produced by large applitude ultrasonic wave resonance in water filler 08 p1210 N68-17959 Nondestructive ultrasonic testing for rapid inspec-tion of weld defects in aluminium alloys [NASA-CR-61585] 09 p1347 N68-18625 reflectometry for measuring Time domain r viscoelastic properties 10 p1558 N68-19848 Intense noncavitating ultrasc nic effects on enzymes 10 p1463 N68-20022 Optical measurements on phase shift of ultrasonic wave upon reflection from interface [TR-4] 11 p1745 N68-20987 Acoustic attenuation in KCl and KCl containing Li s in ultrasonic range 13 p2130 N68-23059 Continuum approach to anomalous effects of ul-asonic wave propagation based on theory for viscous rat conducting, homogeneous, isotropic fluids 13 p2052 N68-23380 Light scattering technique for production and mea-surement of ultrasonic surface waves and dispersion of Rayleigh waves (TR-3) Theoretical interpretation of ultrasonic cavitation in liquid helium based on roton behavior [REPT.-85-44] 13 p2111 N68-24328 Ultrasonic cleaning of small machined instrument 14 p2264 N68-24666 REPT.-6711.3091 Method and equipment for data on magnetic video tape {NOLTR-68-13} nt for recording ultrasonic test 15 p2468 N68-26497 Ultrasonic radiation field of focusing spherical ource at finite amplitudes 16 p2717 N68-28134 Attenuation of transverse ultranonic radiation propagating parallel to external magnetic fields in metals 17 p2956 N68-28628 Ultrasonic energy assaying of microorganisms con-taminating Voyager project planetary probes 17 p2826 N68-29345

tenuation of strong

18 p3149 N68-29676

NASA-CR-97222

LETRAHIGH VACUUM

[NASA-TT-F-11423]

in oltrahigh vacuum (NASA-CR-61439)

Telemetry data acquisit interference effect of \$-ba (AFCRL-68-0331)

Signal inclution of an

amentus on large jet aircraft [D6-23291]

cient of friction

Proporties of metallic surfaces prepared in ultrahigh

EX

540

ers.

472

156

272

ter

28

68

97

92

69

le

55

58

5

Ultrasonic atomization method for diffusion of liquids in alloy plasma are analysis [AFML-TR-67-400] 19 p3232 N68-31930 Nondestructive detection of metallurgical defects in materials using ultrasonic radiation [FTD-MT-66-45] 19 p3286 N68-2100cc Acoustoelectric effect, ult trapping in cadmium sulfide si [COO-1112-157] sonic attenuation, and gle crystals 20 p3573 N68-33211 tic waves to examine inter-21 p3756 N68-34717 24 p4206 N68-37770 ion effects and attenuation in Ultrasonic radia [AD-674519] 24 p4205 N68-38354 ULTRASONIC SPEEDS U SUPERSONIC SPEEDS ULTRASONIC TESTS Ultrasonic instruments in liquid metals or r incipient boiling detection in liquid n [NYO-3622-10] 01 p0066 N68-10758 Operating and ma prototype in-space radiographic test uni [NASA-CR-90043] e procedures manual for tructive ultrasonic and 01 p0070 N68-10792 n of large metallic bearings for setween babbit and steel base 02 p0217 N68-11486 Ultrasonic inspect evaluation of bondin [TN-6707.292] of C-45 aircraft structural TR-6703.2861 02 p0218 N68-11697 th quality steel sheets and Ultrasonic insp TN-6608.263-B) 02 p0218 N68-11700 nd techniques for ul-steel cylinders 02 p0218 N68-11779 Equipment spettrasonic testing of [TR-6703.285] Ultrasonic wall thicks surement for corrosion 02 p0218 N68-11790 Ultranonic impection of \$182 cylinders of high pres-sure pump KRS [TN-6607.256] 02 m0218 N68.11814 Ultrasonic inspection of 8182 cylinders of KRS high TN-6607.2571 02 p0218 N68-11816 Ultrasonic inspection of \$182 cylinders of KRS high pressure pump cast iron parts
[TN-6607.258] 02 p0218 N68-11817 Ultraconic inspection of L and T welds in CCN-012 -Mario D'Almeida ship [TN-6702.284] 02 p0218 N68-11822 Ultrasonic inspection of special quality steel plates type ASTM A-204 Gr B [TN-6610.271] 02 p0219 N68-11823 Ultrasonic imspection of high quality steel sheets and plates - procedures and equipment [TN-6608.263-A] 02 p0219 N68-11824 Structural analysis of aircraft components by ultrasonic tests
[TR-6703.286/A] 03 m0346 N68-11914 03 p0346 N68-11916 ted power reactor CVNA-288) 03 p0375 N68-12466 Ultrasonic boil ation in nuclear [NYO-3622-8] 03 p0344 N68-12526 04 p0587 N68-13070 termined by ultrasonic hips of specific heat ratios with state [AD-661791] 04 p0344 N68-13164 Attenuation of longitud in various plastics studio ultrasonic sound waves select material for ul-(SCL-DR-67-110) 05 p0681 N68-14601 destructive testi AERE-TRANS-1077) 05 p0668 N68-14811 ing of stock and sup [NASA-CR-92801] 07 p1008 N68-16667 eption technique for measuring high tempe [NASA-TN-D-4433] properties 09 p1392 N68-18949 Ultrasonic method

VL-SA-1467)

sic tests for monitoring SNAP 15 weld BNWL-5291 11 p1739 N68-20983 Ultrasonic Snock effect at lower limits for relaxation of in solid solutions of alpha iro [AD-665011] 11 p1716 N68-21841 on tubes and metallic Ultrasonic band test (REPT.-856/14/PS) 12 p1902 N68-21891 Ultrasonic test system for plage containment cap-[BNWL-528] 12 p1978 N68-22539 Ultrasonic inspec plemental rings in d [REPT.-6708.294] n of butt welds in steel sheet sup-14 p2263 N68-24619 measurement of wall 14 p2264 N68-24823 inearity parameters 14 p2332 N68-25115 ed reference materials to ks for ultrusonic non-[A14] 15 p2472 N68-25811 Ultrasonic radiography for butt joints of Saturn 5 S-1C s [NASA-TM-X-53700] weld flaw detection in 15 p2472 N68-25831 ism of copper and 15 p2484 N68-26571 (NASA-CR-61210) 17 p2891 N68-28782 techniques, and Selection of test ethods for ultrasoni ica teribook on no [NASA-CR-61211] 17 p2892 N68-28783 estructive test-NASA-CR-61228 for tube extru [REPT.-11] Procedures and a surement of wall this [LXN/NP-680527] REPT.-6805.329] (BNWL-SA-1395) Ultrasonic Delta I [NASA-CR-6[952] nic dete

17 p2893 N68-28790 tester and testing 18 p3122 N68-29850 ology in Brazil, includ-y control, plantic weld-18 p3056 N68-30335 tion of cast aluminum 18 p3081 N68-30461 used in ultreamic mea-19 p3284 N68-31428 procedures used by tests of B-17 landing 19 p3286 N68-31897 nt, and critical angle 21 p3698 N68-34350 or detecting defects in 21 p3699 N68-34770 cimens of aluminum. 22 p3970 N68-35071 to on single tan 2 p3950 N68-35356 joint of Viscount air-ment and provith 22 p3884 Nos-35660 23 p4012 Nee-36903 n in ionic crystals, and AD-4731 24 p4335 N68-38463 ULTRABONIC WAVE TO not and applica-

(NYO-3622-11)

11 p1703 N48-20950

ULTRASONICS p1768 N68-20739 13 p2066 N68-23233 14 p2262 N68-25568 ear reactor 15 p2470 N68-26802 aperture to shape far field ultrasonic beam p (NASA-CR-92341) 24 p4256 N68-37607 ULTRASONIC WELDING Ultrasonic welding of co [UCRL-13331] 11 p1703 N68-20929 skage ducts and take Joining techniq NASA-CR-939261 11 p1703 N68-20970 logy in Brazil, includ-control, plantic weld-18 p3056 N68-30335 ULTRASONICS Dynamic ele om sonic and ultrasonic resonant frequency [GEM1-537] 01 p0141 N68-10010 [NASA-CR-89965] ol poods N68-10329 ive rec [NBS-TN-344] 03 p0343 N68-12406 JPRS-43987 05 p0698 N68-13923 06 p0923 N68-15985 NASA-CR-72339 07 m0997 N68-14504 DA-2101 07 p0998 N68-16672 (NASA-CR-93967) 11 p1635 N68-21078 13 -2022 1440-3 (TR-35) 13 a2111 N48-24274 14 p2299 N68-25038 14 a2332 N6B-25113 15 p2539 1468-24345

15 p2540 1460-36454

15 p2343 NGS-34499

NY03022331

02 p0213 N68-11788

DA posco NAS-13419

ized argon laser 23 p4070 N68-36045

23 p4031 N68-36330

tion core materials for

23 p4108 N68-36528

on of ultraviolet radia

on photointerpretation 23 p4172 N68-36988

23 p4065 N68-37200

10 p1561 N68-19513

aviolet region 03 p0412 N68-12664

04 p0574 N68-13241

04 p0576 N68-13388

spectra of some

04 p0469 N68-13530

04 p0470 N68-13535

08 p1222 N68-17282

09 p1385 N68-18270

11 p1744 N68-20711

14 p2335 N68-25311

measuring ultraviolet corundum crystals 16 p2660 N68-27369

ion of spectra 17 p2922 N64-29562

18 p3017 N68-29583

18 p3124 N68-30372

ques for ultraviolet stellar

SU

B

N 10 10

ULT

ULT

Basic theory and principles of ultrasonics related to ondestructive testing - programmed instruction textbook [NASA-CR-61209] 17 p2891 N68-28781 Ultrasonic frequence of polychlorophese rul [NASA-TT-F-11801] tion and thermal aging 18 p3099 N68-30352 low temperature in potassi-19 p3347 N68-30922 Ultrasonic sound transmiss solution and polystyrene suspe n in aqueous dextran 19 p3296 N68-30966 ary wind effects on propagation of sound d variation of sound velocity due to at-temperature - ultrasonic propagation s for ranging in air 21 p3732 N68-34187 Ultrasonic inspection techn fatigue cracks in wing spar attac [TR-6806.328] ues for detection of hment joints 21 p3697 N68-34256 FORTRAN computer p trasonic velocity and absorp the distance pulse-echo data outer program to compute ul-absorption in liquids from varia-[TR-2] 22 p3917 N68-35262 Ultrac sic absorption coefficient measurements of forged steels [REPT.-6806/E-11] 22 p3884 N68-35646 ULTRAVIOLET MICROSCOPY Scalar and Fresnel diffraction, convolution integrals, and holographic microscopy 15 p2509 N68-26123 ULTRAVIOLET PHOTOMETRY Research proposal for extra-atmospheric observa-us of stellar ultraviolet sources on rockets and satel-[NASA-TT-F-11233] 01 p0066 N68-10986 Infrared and ultraviolet analysis of polycarbonate 02 p0178 N68-11590 Aerobee rocket ultraviolet spectrophotometry in Orion region [NASA-TM-X-63044] 02 p0267 N68-11652 aceborne astronomical camera for ultraviolet agraphy of hot stars during Gemini flight 05 p0659 N68-14161 Ultraviolet phote cinity, and in intereasurements in earth medium onboard inter-NASA-CR-92524 06 p0906 N68-15940 Visual and ultraviolet pl spiral galaxies ometry of six Sb type 17 p2965 N68-28350 ULTRAVIOLET RADIATION NT FAR ULTRAVIOLET RADIATION NT LYMAN ALPHA RADIATION NT NEAR ULTRAVIOLET RADIATION Electronic aspects of mechanisms of lethal and mu-tagenic action of ultraviolet radiation [NASA-TT-F-11339] 01 p0009 N68-10227 01 p0009 N68-10227 Physiological respo e of human skin to ultraviolet IORO-3578-21 01 p0010 N68-10435 ements of thermal con-Spectral reflectance trol coatings after ultrav [NASA-CIL-91351] 04 p0593 N68-12858 e in plastics after X ray or 04 p0559 N68-13691 ic acid irradiated under primitive 05 p0611 N68-14616 carbumyl chloride by ul-06 p0786 N68-15146 esperimental determina-Atraviolet radiation using m of s (WF-FB-W-47-12) 06 p0905 N68-15316 carbonyl/ perexide synthesized by ul-idiation of exalyl fluoride mixed with ex-

06 p0788 N68-15479

byl peroxide synthesized extures of fluorocarbor

06 p0789 N68-15623

06 a0906 N48-15940

from ISC 3 aurora (NASA-CR-847121

Test equipment for in-situ optical reflectance mea-urement of zinc titanate over Lexan target material on AE-A satellite after proton and ultraviolet irradistion NASA-TM-X-63354] 22 p3896 N68-35589 Atmospheric penetration of ultraviolet radiation with wavelengths of 100 A to 2,000 A calculated from rocket flight density data RAE-A satellite after proton as [NASA-TM-X-63354] 06 p0842 N68-15968 Ultraviolet irradi ects on space stable ther-Excitation mechanisms in ic mal control zinc coat [NASA-CR-61502] 07 p1011 N68-16124 Effectiveness of sodium salicylate-coated photomul-tiplier as radiation detector in extreme ultraviolet re-Ultraviolet radiati reen algae, chlorop effects on photoreactions of its, and quinones isolated from (RLO-1783-13) 07 p0944 N68-16502 Development of glass compositive devices [AD-673446] tor for mass spec-Ultraviolet filter trometer employing p [NASA-CR-1018] tion source 08 p1176 N68-17329 Intensity and polari traviolent day airglow [NASA-TM-X-63108] tion in Milky Way galaxy based ents of far ul-08 p1166 N68-17332 Balloon-borne ultraviolet cameras for night sky ring of natural and artificial assium chloride crystals 08 p1226 N68-17995 Ultraviolet light color dium chloride and pota ULTRAVIOLET REFLECTION Unitary relativistic model of quantum field theory ithout ultraviolet divergences NASA-CR-936591 09 p1417 N68-19453 [JINR-E2-3266] F center formatio ical absorption of ul-ULTRAVIOLET SPECTRA 10 p1576 N68-19850 Solar research in extreme ultra-Optical and photoelectric properties, including olarization effects, of gold and aluminum in extreme Lifetimes of ultraviolet dwarfs and nuclei of planetaultraviolet region [NASA-CR-93971] ry nebulae (NASA-TM-X-60768) 11 p1772 N68-21212 Ultraviolet-proton rad trutor reflective surfaces [NASA-CR-1024] effects on solar concen-Instrumentation and techn [NASA-CR-913781 13 p2082 N68-23560 Surface photopolymeriza monomers by ultraviolet irra [REPT.-67-C-290] n of vinyl and diene Ultraviolet absorpti polychlorinated alkylbeni 13 p2089 N68-23704 Ultraviolet absorption spectra of alkylbenzenes -evidence for carbon hydrogen and carbon carbon bond hyperconjugation Ultraviolet radiation ts on viability of microorganisms in ionosphere and strato [BMWF-FB-W-68-09] ophere 13 p2002 N68-24091 Multiphoton excitation of c and ultraviolet radiation [JPRS-45377] unic molecules by laser Ultraviolet absorption intensities of secondary band of benzene derivatives in nonpolar solvents 04 p0470 N68-13536 13 p2022 N68-24197 Quantum efficiencies photocathodes for ultravio [NASA-TM-X-63215] spectrally selective New linear law and effects relating ultraviolet spec-tra of substituted benzenes and migration moment renes and migration moment 04 p0471 N68-13538 14 p2330 N68-24731 Polarimetry of ultraviolet cle (NASA-CR-95032) ds on Venus 15 p2558 N68-25884 Ultraviolet optical properties of polymers in terms of conformational properties of oligonucleotides for pre-dicting optical properties of ribonucleic acids 05 p0610 N68-14611 Photodegradation of polyvinyl chloride exposed to traviolet radiation ultraviolet radiation [NASA-TM-X-59805] 15 p2487 N68-26106 Ultraviolet and X ray background extrantmospheric measurements and role in study of intergalactic gas [NASA-CR-92549] 06 p0906 N68-15875 Color center and V band for kali halides and potassium of formation and growth in al-n chloride by ultraviolet ir-15 p2412 N68-26108 Optical constants of silver and dilute silver- indi floys determined from ultraviolet spectral reflecta-and transmittance measurements on vacu Cracking of polyethy late by ultraviolet radiation in vacuum an [FTD-MT-24-184-67] 15 p2488 N68-26346 d file IS-T-1871 Transmittance of thin fi gues in selective detector traviolet spectrum lims and photoionization of ors set for photons in ul-Bandwidth dependence of measured ultraviolet ab-sorption cross sections of argon [TR-0158/9260-01/-2] [NASA-CR-1096] 16 p2732 N68-28250 X ray and ultraviolet radiation inescence of alkali halides at li n studies of intrinsic lu-iquid nitrogen tempera-Fiber-optic faceplates for cathode ray tubes with the transmission in near and medium ultraviolet spec-17 p2953 N68-28427 nance study of triplet otassium azide 17 p2953 N68-28458 Reactor irradiation effects on optical absorption levels in fused silica [NASA-CR-1032] 13 p2107 N68-23481 Laboratory simulation of le eteoritic material and ultray rement and identification of laboratory vacuum ultraviolet spectral lines 38] 13 p2126 N68-23781 produced vac NRL-66381 [AFCRL-68-0235] 18 p3164 N68-30131 Atmospheric ligh [FTD-HT-67-257] n UV region 18 p3125 N68-30770 Solar extreme ultraviolet spectrum [AFCRL-68-0009] 13 p2148 N68-24299 Infrared and ultraviolet ra troluminescence of single crys n effects on elec-Photoelectric and optical properties of selected com-mercial metal fulls and films in extreme ultraviolet spectra region 19 p3350 N68-31028 n source designed for Optical instruments for leochroism and absorption is 19 p3213 N68-32143 Ultraviolet light effe on strength of stressed polymeric fibers and fi FTD-HT-23-822-67) Chemical procedures for development of glass suita-ble for use as core material in fiber optic devices operated in near ultraviolet portion of spectra 20 p3511 N68-33100 iprocal optical filtering Cathode ray tube wit techniques for viewing [NASA-CR-1185] 20 p3452 N64-33224 tive lifetime measurements for absolute elec-nation probabilities in ultraviolet molecular ivation of transforming to mosaic virus, and its 20 p3408 N68-33479 Refractivity, shsorptivity, and UV light transmission of glasses for use in fiber optic faceplates for high resolution cathode ray tube [BCOM-0542-2] 18 p3124 N68-30372

s ultraviolet radia

21 p3764 N68-33762

FR.44]

F

TR-431

SUBJECT INDEX DEX mustion model for ultraviolet, visi-enuation data to 50 km altitude 20 p3467 N68-32308 Atmospheric atter bie, and infrared atte [AFCRL-68-0153] rial on Effect of structure and solvent polarity on ultraviolet absorption spectra of carboxylate derivatives 21 p3648 N68-33814 35589 Aerodynamic shock tubes for study of atomic and olecular spectroscopy in ultraviolet AD-6722241 21 p3653 N68-34574 36045 [AD-672224] Photochemistry of planetary atmospheric matter, solar EUV and VUV spectral region studies, ion-solecule reactions and photoionisation products, and slanetary aeronomy investigations.

NASA-CR-97185]

23 p4171 N68-36952 36330 als for 36528 radia-ation 16988 ULTRAVIOLET SPECTROMETERS Multispectral sensing for automatic recognition in soil science [NASA-CR-91522] 04 p0510 N68-13477 t sky ULTRAVIOLET SPECTROPHOTOMETERS 7200 Description of ultraviolet spectrophotometric equip-nent and telemetry system for experiment CEPHEE 23 p4177 N68-37135 ULTRAVIOLET SPECTROSCOPY 9513 Photoionization spectrum of discharged oxygen with argon light source and vacuum ultraviolet monochro-mator in discharge flow experiment [TR-1001/2260-10/-2] 2664 03 p0387 N68-12181 Atomic absorption cross section of potassium between 580 and 1000 angstroms [TR-1001/9260-01/] 03 p0387 N68-12199 3241 ellar Absorption and photoionization coefficients of nitrous oxide measured by vacuum ultraviolet 3388

3530

535

and

536

pec-

538

s of

eric

873

nce um

282

70

11

81

ну

81

99

m-let

11

10

12

13

[TR-0158/9260-01/-3] 03 p0389 N68-12282 Ultraviolet absorption cross section measured to determine oscillator strengths for some transitions in Lyman bands of molecular hydrogen [AD-681986] 04 p0549 N68-13447 Alpha and beta bands in lithium fluoride single [USNRDL-TR-67-136] 07 p1070 N69-17015 amond-windowed metal containers as corrosion tant absorption cells in molten fluoride spectrosco-ORNL-TM-20471 09 p1293 N68-18532 Ultraviolet spectroscopy and photolysis of 2,3-dicar-alexaborane (TR-17) 11 p1654 N68-21376 nd, pulsed vacuum ultraviolet light source [NASA-CR-73222] 14 p2297 N68-24441 Purification of cyclohexane as solvent for ultraviolet

20 p3420 N68-32606 UMBILICAL CONNECTORS Handbook for designing ball lock mechanisms for se on space vehicles 13 p2073 N68-23356 Dual hydraulic rotary actuate wing arms from launch vehicle or for rotating umbilical 16 p2789 N68-28140 [NASA-CR-95264] Variable density hypervelocity wind tunnel tests on effects of several ramp-fairing, umbilical, and pad configurations on aerodynamic heating to Apollo command module
[NASA-TMLX-1640] 22 p3799 N68-35141 UMBILICAL TOWERS

Acceptance testing of upper stages of gaseous airrogen distribution system launcher [WRE-TN-DWD-10] 17 p2977 N68-29269 ELDO launch vehicle air cooling and umbilical towers at launching site Woomers [WRE-TN-DWD-8] 23 p4041 N68-37152 UMBRA [SHADOWS] UMKERR EFFECT

Model and experimental results of haze effects on mkehr measurements 20 p3467 N68-32394 UNCAMBERED WINGS U RING WINGS

UNCERTAINTY U PROBABILITY THEORY UNCONSCIQUENESS
U BLACKOUT [PHYSIOLOGY] **UNCOUPLED MODES**

Analysis of hourly averaged Explorer 28 satellite data in magnetospheric tail and uncoupling of parallel and perpendicular particle motion in neutral sheet [AFCRL-67-055] 08 p1241 N68-17927

Deformation of completely symmetric elastic system with stability analysis of coupled and uncoupled modes of equilibrium path [NASA-CR-95485] 17 p2981 N68-28844

Diakoptics uncoupling method for determining tur-ine bucket frequencies by applying matrix calculus to eneral eigenvalue problem 19 p3300 N68-31178

UNDAMPED OSCILLATIONS

ic moment determined by amped oscillations 06 p0763 N68-15616

Critical speed of flexibily mounted rigid rotors in un-dampened bearings [NASA-TN-D-4607] 14 p2360 N68-25421

Flight and ground measurements of undercurriage and landing loads on Porter PC 6, DH 112, and Mirage 3 sincraft 18 p3001 N68-29980

UNDERGROUND EXPLOSIONS

Air ducts for increased effectiveness of underground 02 p0240 N68-11551

O2 p0240 N68-11551
Contamination control, dynamic response of materials and structures, radiation physics, ferroelectrics, underground explosive geophysics, serothermodynamics, and crystals 03 p0430 N68-12518

Monte Carlo calculations of methods for in situ measurements of hydrogen in earth media, and underground nuclear explosion projects [UCRL-50008-67-3] 03 p0340 N68-12646

uslated small scale overburden stripping by ar explosions in open pit mining of till shale IR-66-477] 03 p0430 N68-12754 nuclear explosion (SC-RR-66-477)

Seismic wave modeling experiments involving tetonation of radial explosive nources in plates of glass and Plexiglas prestressed to various static peestress [SRI-PGU-6099] 06 p0919 N68-15291

Impaction data for plate collector exposed to falling particles from vulcano eruption
[AD-663800]

OB p1169 N68-17771

Large aperture seismic array studies dealing with masking underground nuclear tests with large earthquakes, effects on epicenter location, and pP phase of earthquakes [ESD-TR-67-630] 09 m1332 2468 4834

[ESD-TR-67-597] 10 p1523 N68-20239 le of compression waves Attenuation by earth manti from underground nuclear exp

12 p1867 N68-22238
Discrimination between Sino-Soviet earthquakes and
explosions based on short period seismic data from single station - analysis of waveform complexity and spectral ratio
[TN-1968-8] 12 p1867 N68-22238

Large aperture seismic arrays for detecting un-erground nuclear explosions and locating earthquake (QTR-3) 13 p2061 N68-23772

Stress-strain model for analysis of frictional soil behavior under load [R68-4] 15 p2463 N68-26808 a surface waves during un-

16 p2655 N68-27591 Seismological station arrays, seismic waves, and ex-plosion source detection [REPT.-59] 22 p3870 N68-35431

UNDERGROUND NUCLEAR EXPLOSIONS
U NUCLEAR EXPLOSIONS

UNDERWATER ACQUITICS

Reduction of secondary device-scattered emission, uploration of low energy discharges, bubble pulse sup-ression, and effects of gas disolved in underwater elec-noteless start anual source. [AVSSD-0359-67-CR] 01 p0037 N68-10282

ctional conductivity change of various inorganic reanic solutes added to aqueous rodium chloride (TR-4) 02 p0173 N68-11085

02 p0239 N68-11092

propagation of diffraction effects, shallow and propagation experiments, acoustical instru-and ambient noise in arctic waters. 5] 05 p0653 Na6-14669 Ray repre

Contour charts of sound spend fields in Pacific Ocean computed from hydrographic data [HIG-67-7] 05 p0653 N68-14781

Acoustical data on boundary layer flow for free falling body of revolution in upper ocean layer [C7-3073/020] 08 p1163 N68-17951 Analysis on ultrasonic spectrum produced by large aplitude ultrasonic wave resonance in water filler

08 p1210 N68-17959 Optical methods for sound velocity measure

10 p1559 N68-20003 Improved intelligibility of helium speech at simulated underwater depth of 400 feet - assessment of high fidelity recording and frequency shifting methods [REPT-48-1] 1 p1641 N68-21591

Reprogramming of sonic or burst count matching [CRI-0267] tput of dolphin - son 13 p2000 N68-23416

derwater electric field and electromagnetic noise urements at extremely law frequencies 14 p.2251 N68-25207

Properties and excitation of earth-ionosphere cavity by lightning 14 p2251 N68-25211

Shock and vibration measurement instrumentation and analyses - transducer calibration, liners, shock analyses, structural vibration tests, dynamic phase shocks, and underwater acoustics dies, and unde (AD-667227) 14 p2367 N68-25561

Vibration characteristics and measurements of pan-ve sonar transducer elements 14 p2262 N68-25568

Underwater spo and abstracts (CSL/ONR-20) 15 m2429 N68-26734

Oceanographic survey data on northeast Atlantic region, including velocity profiles, core physical properties, temperature-onlinity, and bottom photographs [3P-95-2-6]

tion, and speech recogni Hearing loss, so tion for underwak [CSL/ONR-12] 16 p2618 N68-27011 con detection ranges for

17 p2885 N68-29028 processor for improved issuligi-sted in belies Digital voice data p bility of speech general (HRB-4007-F-2)

modulated liquid flow using rater acountics research 19 p3263 N68-31000

Elastic response an TM-619.3111-071 19 p3375 N63-31101 Vibration of viace medium under inters [TM-646.3361-04] erical shell in accountic

19 p3377 N68-31435 on of deep sex reversion Developments in cal termometers and ocea countic studies 19 n3259 N68-31725 NUWC-TP-27]

SR-II

lds 21 p3662 N68-34626 m of underwater signals 24 p4256 N68-376

nd error probability in bi-ion system 24 p4228 N68-38179 IREPT.-3674-18-T1

UNDERWATER ENGINEERING Accomplishments and future prospects for U.S. avy occumographic research programs AD-657389 02 p0209 1468-11901 AD-457389

cyanoactylates, polysulfides, and afficient adhesives for un-[AD-661313] 04 p0524 N68-12882 of personalic greduitor of

05 p0761 New 14577 Line constants, impedance, aftenuation, crowtal nd square wave response in four core hydrograph WRE-TN-EC-301

08 p1145 N68-17251 (NASA-TT-F-11783) 15 p2448 NGG-25733

24 miles read lines

SUL

ENT

UNIT

(C

de [P

fri [B

UNI

OI

UN

C)

UNDERWATER EXPLOSIONS

Shock waves associated with underwater exploding wires compared with chemical explosives by law of IR-67-871 06 p0815 N68-15653

Equation of state of water for predicting motions and pressures following underwater nuclear explosion [RM-5050-PR] 08 pl 161 N68-17655 Energy calculation of shock wave from underwater

[FTD-HT-66-574] 9 p1325 N68-18475

Damage mechanisms of cantilever beams mounted in floating shock platform and shock tested by un-14 p2365 N68-25531

Energy absorbing steering column for protecting thipboard personnel against underwater explosion theck motion 14 p2365 N68-25532

Design and performance of dual mode shock archine for testing new missile shipping and storage natainer concept to extremes of simulated shipboard inderwater explosion shocks

14 p2239 N68-25540 Buoyance blocks of balsa and polyurethane foam sted for strength against damage in underwater explo-

[TL-1968-8] 23 p4085 N68-37252

UNDERWATER TESTS

tation to underwater colors 01 p0013 N68-10834 Visual adap [SMRL-499] incometer design for a sampling devices 04 p0509 N68-13423 Photographic recording oriental [MPL-TM-149]

Static and dynamic corro of stainless steels in pres n testing of carbon steels rized water at high tem-

PETRAEC-1896) 05 p0673 N68-14117 nned unde ry for investigation of

hydrophysical processes in littoral [JPRS-43154] il zone 11 p1695 N68-21817 Two-circuit underway mote control from ship er relay system operated by

14 p2249 N68-24962 in brain during deep sea

Biological activity of he diving and decompression (JPRS-46460) 22 p3815 N68-39972

Oceanographic reports o aderwater research vehicle rts on sea and wave parameters, hicles, and geostrophic currents 24 p4251 N68-38038

UNDERWATER VEHICLES NT SUBMARINES

Design and construction of sandwich half stodel for unders (NSRDC-2412) uter application 02 p0275 N68-11311

Acoustical data on boundary layer flow for free fulling body of revolution is upper ocean layer [C7-3073/020] 08 pl 163 N68-17951

programs for structural Finite element or

analyses on underwater [NCEL-TR-567] 13 p2162 N68-23975

Manuel underwater [NASA-TT-F-11785] ry in North Sea 15 p2448 N68-25733 and research, ocean bottom re-re, and plankton specific Underwater vehicles a lief and water temperatur Mankton species 17 p2882 N68-29453

for strengthening glass and mergence underwater vehiles - bibliograph (NOLTR-44-31) 20 p3509 N68-32372

SADKO-2 un (JPRS-46427) ory for two aquamouts 22 ±3852 N68-34930

Oceanographic rendered n ses and wave parameters, es, and geostrophic currents 24 p4251 N68-38038

U AXIAL STRAIN

UNIDENTIFIED FLYING OBJECTS

nd flying objects presented Science and Astronautics 20 p3614 N68-33382 Symposium on unidentified before House Committee on S

UNIFIED S BAND

Evaluation and p hand outen for April [NASA-CR-96289] lysis of unified 3 od network 20 p3437 N68-32711

ctional capability or excitor solo es and physical arrangement of teen in unified 5 hand Apollo ecking ground station system 20 p3438 Ne8-33162

band system of Manna d on reliability ed Space Flight Net-rformance data from work based on reliabili unmanned Apollo flight [NASA-TM-X-63323] 21 p3659 N68-34278

UNIFORM FLOW

Response of elastic surface to normal pressures over onstant and expanding circular area area 15 p2569 N68-26252 [TR-5] rm and gradient flow on

Pressure distribution in spherical radome models (ESD-TR-68-84) 18 p2997 N68-30081 Supersonic jet escape into vacuum from nozzle with uniform exit flow

21 p3682 N68-34302

Pressure dependence of plasma diffusion across uniform magnetic field [IPPJ-70] 22 p3945 N68-35798

UNIONS (CONNECTORS)

Improved fusion welded toe connections for vacuum (LA-DC-8978) 04 p0517 N68-13875

UNIPOLAR TRANSISTORS
U FIELD EFFECT TRANSISTORS

UNIQUENESS

exastence, uniqueness, and convergence of successive approximations for ordinary and hyperbolic partial differential equations

14 p2281 N68-25081

Uniqueness of equations for partial amplitudes in relativistic three-particle problem
[JINR-P2-3694] 14 p2318 N68-25406 Nonlinear resistive electric network analysis and topological determinant expansion rule

15 p2440 N68-26009 Computational algorithm for existence and unique-ess of best approximation by polynomials with

restricted range [MRC-TSR-835] 15 p2494 N68-26649 Proving positivity and unique or approximations to fixed so

for approximations Boltzmann transpo [WAPD-TM-730] 18 p3106 N68-30425 ess proof for linear or-

Ascent existence and unique dinary differential equations [NASA-CR-96365] 20 p3516 N68-33255 eumann, Dirichlet, and

24 p4274 N68-37557 UNIQUENESS THEOREM

Uniqueness of expan n in trigonometric series for 06 p0861 N68-15278

Uniqueness theorem in Ca bolic systems of quasilinear eq chy problem for hypertions 06 p0861 N68-15279

Unique solution [MRC-TSR-802] 06 p0861 N68-15321 theorem for solving Cauchy stems using two quasi-linear

06 p0862 N68-15427

n for partial differential equation potential scattering operator 06 p0863 N68-15533 and representation [MRC-TSR-783] niform approximation of continuous function by e functions with fixed knots on interval in terms of

C-TSR-768) 06 p0867 N68-16057 Puantitative improvement of uniqueness theorem in skowski problem for general convex surfaces

onvex surfaces 09 p1361 N68-18634 d on linear system of dif-tistence and uniqueness

09 p1319 N68-18799

NASA-CR-61405] 15 p2511 N68-26609

ar theory of elasticity (TR-3) 16 p2776 N68-27214

ration of sum rules [NP-17474] 20 p3545 N68-32951

Existence and uniqueness to dom ordinary differential equa [AD-672207] orems proved for run-21 p3715 N68-34669

Generalized eigenfunction expansions and unique-22 p3899 N68-35209

UNITED NATIONS

Jurisdiction over acts in outer space, domestic use of communication satellites, UN and other international agencies in controlling space, and bibliography on space laws [NASA-CR-97323]

24 p4357 N68-37768

UNITED STATES OF AMERICA

NT ALASKA NT CALIFORNIA

NT CONGRESS NT FLORIDA

HAWAII

NEVADA NEW MEXICO OREGON

PENNSYLVANIA

Major storms in western Colorado and eastern Utah studied in relation to upper air circulation and moisture

[WBTM-HYDRO-7] 07 p1018 N68-16770 Methods and data collection for predicting winter recipitation in eastern United States

07 p1020 N68-16906 Cirrus heights and synoptic patterns over central

07 p1020 N68-16915 Circulation patterns and satellite-observed cloud over relationships over United States and Mexico 7-16 07 p1021 N68-17185

Radar observations on tropospheric cloud composi-tion, and distribution over United States of America 09 p1338 N68-19407

Tabulated VHF propagation data as obtained over irregular terrain in Ohio at 20, 30, and 100 MHz [IER-38-ITSA-38-3] 13 p2028 N68-23859

British and American resea th on oxygen rich fires 14 p2204 N68-24871 Mosaic of western united states constructed from spaceborne photographs taken on Gemini flights [NASA-CR-95478] 17 p2877 N68-28636

onsibilities in civil aviation and recommendations on airport planning 18 p3002 N68-30306 Federal government res research and developmen air traffic control, noise, ar [NASA-CR-95879]

Financial, economical, and legal concepts relevant to stential domestic applications of artificial satellites in (AD-673031) 22 p3834 N68-35242

Turbulence climatology of United States between 20,000 and 45,000 feet from aircraft reports and meteorological data [AFCRL-68-0337] 22 p3906 N68-35448

Statistical model of distribution of federal expendi-[NASA-CR-97358] 24 p4357 N68-37813

UNITS OF MEASUREMENT

Equations and tables for corements into MKSA system verting magnetic mea-06 p0878 N68-15102

Tabulated definitions and conversion factors for changing German and Anglo-American measuring units to international system of units 09 p1385 N68-19446

Analysis of metric relations in small scale physical re-

(LA-TR-68-6) 16 p2729 N68-28078 UNITY Five dimensional field theory 21 p3737 N68-34014

UNIVAC COMPUTERS

Autodiagram flow chart programming for Univac 1108 [NASA-CR-92808] 07 p0968 N68-16238

Computer program for solution of multigroup cutron diffusion equations in Univac 1108 computer 3A-8188] 12 p1938 N68-22835

Univac 1108 computer system of cathode ray tube reens for time sharing, data retrieval, and data NASA-TM-X-53724, V. 2]

17 p2856 N68-28567 CDC 3600 program written in FORTRAN and COMPASS for translating 3600 FORTRAN /version 5.2/ to Univas FORTRAN 5 [SC-TM-67-795] 23 p4028 N68-36818

DEX

5411

7768

Jean ture

770

nter

906

tral

115

-16

85

Mi-

59

71

2

UNIVAC 1166 COMPUTER

Univac 1108 computer system of cathode ray tube acreens for time sharing, data retrieval, and data [NASA-TM-X-53724, V. 2]

UNIVERSAL TIME

17 p2856 N68-28567

Tabulation of vertical deflections under lunar and solar tidal power influences for use in astronomical determination of time

04 p0500 N68-13343

[CTS-PHIL-S-67-1] ce-time physics 10 p1557 N68-19503

Universal time changes daily variation - spherical h [PB-176073] omagnetic solar quiet nics coefficients 10 p1525 N68-20425

Incremental phase changer for offsetting time and frequency standards [RAE-TR-67230] 10 p1532 N68-20486

UNIVERSE

Nonlinear models for electromagnetic phenomena in (REPT.-67-18) 04 p0570 N68-13647 Energy density and neutrino density in universe, and igins of neutrino sources

06 p0903 N68-15076 Zero density and approximate, relativistic models of

[NASA-TR-R-282] 10 p1593 N68-20192 Neutral hydrogen period in hot model universe

[NASA-CR-94046] 11 p1779 N68-21190 Physical laws of universe, and cosmolog [NASA-CR-94166] niverse, structure and evolution of plogical theories of universe 12 p1964 N68-21845

Ideas on actual state of astro [MEMO-12] 15 p2562 N68-26836

io astronomy for deter-Radio telescopes used in radio ining chemical composition of u 16 p2756 N68-27296

Structure of universe, physical phenomena, and role 18 p3166 N68-30359

Statistical models of homogeneous isotropic uniform

19 p3363 N68-31098 (LPTHE-TH-68/7)

Formation of irregularities in Friedman universe and ability of relativistic cosmology 21 p3768 N68-34209

UNIVERSITIES

University of Toronto aerospace sciences research

03 p0383 N68-12012 Nuclear reactor design, operation, and technology using MIT test reactor and related bibliography [MITNE-91] 15 n2504 bide 24402

Institutional grants by Federal Government for science research programs and science education 16 p2799 N68-27743

Statistics on NASA program of disseminating educa-tional monographs and visual briefs to industries and 17 p2990 N68-29027 INASA-CR-956961

Electromagnetic wave propagation /lecture notes/ [SR-321] 18 p3125 N68-30744

UNIVERSITY PROGRAM

Nuclear physics research at Purdue Research Foun-01 p0109 N68-10526 [COO-1420-134]

niversity program dealing with fluid mechanics, mechanics, space physics, bioastronautics, and act of space technology on community impact of space tech [NASA-CR-90230] 02 p0240 N68-11586

Progress reports in materials, plasma, and electrochemical engineering [NASA-CR-91449] 04 p0543 N68-13118

Interdepartmental and interdisciplinary Materials esearch activities at University of Minois 04 p0556 N68-13234

University electronics research in areas of biomedi-cal electronics, information systems, quantum and plasma electronics, and space and atmospheric radio

(AFOSR-67-2342) 06 p0818 N68-15539 Third annual NASA University Conference on Manual Control [NASA-SP-144] 06 p0779 N68-15901

Summary reports on research in cryogenics, metal hysics, crystallography, spectroscopy, solid state hysics, semiconductors, phase studies, high pressure search, and radiation damage 08 p1228 N68-18007 Computer circuit research, hardware systems, soft-ware systems, numerical methods, computer arithmetic and artificial languages, switching theory, and logic design

[COO-1469-0071] NASA program on tra

university information center [NASA-CR-93482]

NASA sustaining univers NASA-UNIVERSITY relation program grants and

graphic research 13 p2060 N68-23679 University program in ocean

University program in precis n optical technology 13 p2109 N68-23765

Management report on university research projects on properties of metallic and nonmetallic materials, semiconductors, inorganic compounds, and noncrystalline solids [AD-660385] 13 p2137 N68-23860

Implications of President Johnsons memoranda of iep. 13 and 14, 1965, for funding of academic research by federal agencies [NASA-CR-86739] 14 p2376 N68-24640

Goddard Space Flight Center and university

Theoretical studies and high energy bubble or spark chamber experiments at Hawaii University (HEPG-23) cooperative research programs [NASA-TM-X-63228]

ation on sonic boom research in stories, aerospace industry, and

15 p2388 N68-26852 versities research projects on sonic booms and e of research on generation and propagation of

15 p2388 N68-26855

Space-related research activities, facilities, and courses at university in fields of biological sciences, engineering, and physic INASA-CR-953461 16 p2770 N68-28092

search projects on defect structure, mechanical vior, electrical and optical properties, and ther-ynamics of solid materials at university 16 p2746 N68-28194 INASA-CR-95358)

Experimental program to provide low cost computer earches of NASA information files to university graduate students [NASA-CR-95724] 17 p2990 N68-29038 sations of theses for

Industrial and univers NASA-CR-957031 17 p2991 N68-29257

Space and technol INASA-CR-957081 17 p2991 N68-29552 NASA university program eronautics and space reser s in personnel training, ch, and laboratories and

(NASA-SP-185) 22 p3981 N68-35564 es and socio-economic par-alifornia Job training, urban studies a ticipation at University of Calif [NASA-CR-97374]

23 p4192 N68-37286

U DEPENDENT VARIABLES U PROBLEM SOLVING UNLOADING WAVES

in one dimensional wave TR-181) 24 p4351 N68-38264

POPUSATION

TTK-1001

UNMANNED SPACECRAFT

NT AOSO

NT BEACON EMPLORER A

NT BEACON SATELLITES

NT ECHO SATELLITES

NT ECHO SATELLITES

NT ECHO SATELLITES

NT ECHO 2 SATELLITE

NT EXPLORER 18 SATELLITE

NT EXPLORER 18 SATELLITE

NT LUNK FORMER 22 SATELLITE

NT LUNK FORMER PROBE

NT LUNK 10 LUNAR PROBE

NT MARINER SPACERAFT

NT M

09 p1306 N68-18272 ferring technology from

09 p1453 N68-18732

NASA university program I and development of Standard It [NASA-CR-93480] for technology transfer, interest Profiles /SIP/ 09 p1453 N68-18733

10 p1596 N68-20384

NT POLYOT SATELLITES
NT RANGER CUNAR PROBES
NT RANGER CLUNAR PROBE
NT SOLAR ROBES
NT SOLAR PROBES
NT SPACE PROBES
NT SURVEYOR LUNAR PROBES
NT SURVEYOR I LUNAR PROBE
NT TRANSIT IN SATELLITE
NT TRANSIT SATELLITES
NT VENUS PROBES Unmanned Mars probe to dynamic stability at Mach to [NASA-TN-D-4291] sted for drag, lift, static and 03 p0295 N68-11936

PASSIVE SATELLITES
PIONEER SPACE PROBES
PIONEER 6 SPACE PROBE
POLYOT SATELLITES

n of spacecraft resources examed missions 07 p1081 N68-16809

nts for interplanetary space flights [NASA-TM-X-52397] 08 p1241 N68-18061

Manned and unmami ientists for space missis id Apollo science progr space research, training and role of man in Gemini

10 p1596 N68-20387

Current and future space uft concepts for un-10 p1598 N68-20546

Evaluation of mic emmunication system om Mars spacecraft er, and optic

from Mars spacecraft (NASA-TN-D-3984) 12 p1843 N68-22019 ed speci

INASA-TN-D-45871 14 p2343 N68-24557 n loads for une

Literature survey on d rocket stages (BMWF-FB-W-68-03) 14 p2355 N68-24801

for measuring reflection Pulse-type radar instrument refficients of planetary or

INASA-CR-876611 15 p2465 N68-25677 neasure performance of designed for summanued

interplanetary missis [NASA-CR-96086] 19 p3306 N6E-31090

Exhaust gas conta soils by unmanned sp [NASA-CR-96286] of Mars perous surfa-20 p3585 N68-32604

nte launch vehicles for ence missione 20 p3589 N68-33171

nts for future manned ce probe, orbitor, and 20 p3590 N68-33173

dance and control ry exploration 20 p3528 N68-33182

uidance and contro spacecraft and launce

20 p3528 N68-33183 al program

stations and unmanned INASA-TM-X-612131 21 p3771 N68-34323

23 p4030 N68-36197

NSTABLE BURNING U COMBUSTION STABILITY

NT OSCILLATING FLOW

01 p0049 N68-10110

do in closed systems 01 p0050 NeE-10219

2 p0202 N68-11753 03 p0296 N68-12144

Energy losses by friction in unsteady laminar pipe (RAE-LIB-TRANS-1244) 04 p0492 N68-12851 Predicting transition and separation of unsteady oundary layer flow over oscillating thin foils 04 p0495 N68-13297 Mathematical model for one dis sional unsteady gas flow in pressure exchanger [RAE-TR-67123] 04 p0436 N68-13500 Criterial equations of nonsteady heat and mass ransfer in most materials transfer in moist ma [FTD-HT-67-475] 06 p0924 N68-15119 nsfer in nonscattering ck boundaries Unsteady radiative heat tra grey plane parallel layer with bla ck boundaries 11 p1801 N68-20591 Measurement, interpretation, and use of unsteady momentum fluxes in two phase flow [REPT.-70318-50] 11 p1685 N68-21155 alytical theory for calculating second order cor-ns to lift distribution for unsteady subsonic flow ender bodies of revolution Ana 12 p1810 N68-22082 ly hypersonic flow 12 p1811 N68-22349 [NASA-TT-F-11665] spherical gas bubbles in le fluids Pulsation characteristics of a compressible and inco [NASA-TT-F-11653] 13 p2053 N68-23590 Nomiteady fluid flow between two parallel plates 14 p2242 N68-25076 Uniteady magnetohydrodyn dies with inwardly diffusing m mic flow past thin gnetic field 15 p2528 N68-26013 Numerical analysis of unsteady nonlinear three mensional flow of sweptback wing in supersonic flight (SUDAAR-339) 15 p2381 N68-26104 Discharge time for unsteady scous fluid from conical reser dy flow of incompressible 16 n2646 N68-27620 Comparison of heat transfer coefficients of sensor in pulsating bod and fluidized bed of dry sand [ANL-TRANS-592] 18 p3184 N68-29819 Heat transfer coefficients in cycline by unsteady flow of heate [ANL-TRANS-593] ts in drying of moist tetra-heated air 18 p3185 N68-29820 Peculiarities of mot nd convective heat transfer of purticles in unsteady gas flow [ANL-TRANS-591] 18 p3129 N68-29831 Numerical analysis of unsteady flow in two dimen-[NASA-TM-X-52459] 18 p2997 N68-30043 Tran sient heat transfer due to unsteady flow in thin circular pipe [NAL-TR-144] 18 p3190 N68-30762 effects on pulsating flow

19 p3261 N68-30925 Mathematical models for supersonic flow past blunt odies and one dimensional, unsteady flow of relaxing FTD-MT-24-216-67] 20 p3393 N68-33217 One dimensional, unsteady flow of relaxing gases 20 p3393 N68-33219 Unsteady nonuniform flows in distributed outflow 21 p3681 N68-34144

Uniteady flow approach to computing axisymmetric transcent: ewirl flows using three dimensional method of characteristics, and accuracy check on results [ARL-68-0070] 21 p3682 N68-34465 ear problems in un-Self-com steady radiation gas dy [MIT-DSR-76052] 21 p3796 N68-34715 Transient and steady state fluid flow and conductive heat transfer analysis for tube heat exchangers using TRACK computer program WANL-TME-1736 22 p3912 N68-35916

Pulsed ple on through jacket (MATT-TRANS-50) 23 p4144 N68-37171 UNSTEADY STATE

Thermal unsteady state effect on coefficient of con-vective heat transfer during flow round spherical bodies at small Reysolds numbers

02 p0291 N68-11752

Flight test method for determining aircraft per-rmance, and stability and control characteristics dur-08 pilli N68-17459

Near resonant electron capture reactions to produce ome of long-fixed excited atoms and molecules 09 p1386 N68-18352 (AROD-5134-5-P)

Unsteady state radiative and convective heat transfer in cryogenic oxygen 14 p2358 N68-25029

Approximate calculation of unsteady state ablation of ceramic materials subjected to aerodynamic heating [FTD-HT-23-791-67] 24 p4272 N68-37998

UNSWEPT WINGS
U INFINITE SPAN WINGS
U RECTANGULAR WINGS
U RING WINGS

UPDRAFTS
U VERTICAL AIR CURRENTS UPPER ATMOSPHERE NT D REGION

- 1 LAYER - 2 LAYER **E REGION** EXOSPHERE F REGION F I REGION

NT NT IONOSPHERE LOWER IONOSPHERE MAGNETOPAUSE MAGNETOSPHERE

NT MESOSPHERE
NT SPORADIC E LAYER
NT THERMOSPHERE

High altitude gun launched rockets and projectiles for upper atmosphere research [BRL-MR-1825] 01 p0045 N68-10018

Solar radiation and magni cospheric neutral temperatu rtic effects on upper at-res derived from satellite NASA-TM-X-63014] 01 p0130 N68-10358 Alouette I satellite io

ic data 01 p0057 N68-10383 Absorption spectra of at-far ultraviolet for upper ateric and rare gases in

01 p0027 N68-10983 ts analyses of daytime ozone

profile intitude TR-0158/3260-10/-2] 04 p0499 N68-13073

Translations of Sino-Soviet publications in astrono-y, meteorology, oceanography, geophysics, and my, meteorology, oceanogrupper atmosphere and space n (JPRS-43878) 04 p0499 N68-13178 Ionospheric echo me ing 1967 ements over Germany dur-

05 p0649 N68-13915 ography, meteorology, astronomy, upper at-e, and earth planetary structure 4033] 06 p0832 N68-15026 (JPRS-44033)

Cosmic rays, meteors, auroras, ionospheric electron ensities, and solar activity effects on characteristics of pper atmosphere

06 p0832 N68-15031 Reaction kinetics associated with oxygen atoms in-teraction with platinum foil under simulated upper atmosphere condition INASA-CR-925671

06 p0832 N68-15098 Upper atmosphere wind profiles over Yuma, Arizona used on data from gun-launched vertical probes REPT.-7] 06 p0833 N68-15231 REPT.-71

r atmosphere wind circula-rope, and Near East 06 p0869 N68-15297 Statistical analysis of upper at tion over North Atlantic, Europ

for scientific probing of upper atmosphere (SRI-TL-1) 06 p0833 N68-15320

Upper ate vertical prof (BRL-6) d profiles from gun launched 06 p0838 N68-15627 flarium vapor release payload and fusing system itable for gun lunching for geoelectric and upper at-

mospheric measures (RIAS-TR-67-17C) 06 p0839 N68-15651 d profiles from gun launched

BRL-5) 06 p0839 N68-15690 evaluation for upper at-Diffuse dayglow da comphere missile observ (ISL-6/66, PT. 2)

amounted bibliography of Soviet studies on upper (JPRS-44343) Upper atmosp oud storms re ice crystals for triggering cirrus

[PB-175993] 07 p1018 N68-16674 on in upper atmosphere tellite drag analysis 07 p0991 N68-16698

Major storms in western Colorado and eastern Utah udded in relation to upper air circulation and moisture (WBTM-HYDRO-7) 07 p1018 N68-16770

Field aligned electron bursts at high latitudes ob-served by polar orbiting satellite OGO-4 [NASA-TM-X-63093] 07 p1077 N68-17072

Soviet-bloc research in astronomy, meteorology, oceanography, geology, upper atmosphere, and space [JPRS-44234] Upper atmosphere, interplanetary space, extrater-restrial radiations

08 p1167 N68-17531

Soviet bloc research in astronomy, meteorology and upper atmosphere, oceanography, and histories of geology in U.S.S.R. [JPRS-44416] 08 p1167 N68-17597

Symposium presentations on conjugate point henomena of electromagnetic and hydromagnetic phenomena of esectron guided waves in upper alt [IERTM-ITSA-72] 08 p1170 N68-17967

Earth field-line dependence of rapid geomagnetic rid variations observed at conjugate locations 08 p1171 N68-17968

ories and forms of geomagnetic micropusarionasizing activities at conjugate points
08 p1171 N68-17969

Conjugate observations of spectra and cosmic noise during geomagnetic micropulsation event of May 25, 1964 08 p1171 N68-17970

Trapping and ducting of electromagnetic and ydromagnetic waves in upper atmosphere 08 p1172 N68-17978

Time-space variations in Martian upper atmospheric density profiles

09 p1421 N68-18843 Infrared emission and absorption in carbon dioxide ands for Venus upper atmosphere temperature NASA-TM-X-57346]

09 p1425 N68-19199 Numerical analysis of upper atmospheric air density variations based on satellite 1966-101G orbit changes [RAE-TR-67171] 10 p1525 N68-20500

Soviet-bloc research in astronomy, meteorolo oceanography, terrestrial geophysics, and upper mosphere and space research [JPRS-44901] 10 p1526 N68-203 10 p1526 N68-20529

Soviet-bloc research abstracts on space programs, upper atmosphere, meteoroids, and cosmic rays 10 p1526 N68-20534

Scintillations studies in upper atmosphere using VHF radio signals from Early Bird satellite [AFCRL-67-0655] 11 p1658 N68-20656

Rarefied gas-surface interactions effects on satellite rbital position, attitude, and lifetime between 150 and 330 km [NASA-CR-94079] 11 p1781 N68-21126

Literature survey of Soviet bloc research in [JPRS-45076] e sciences 11 p1689 N68-21276

Literature survey on Soviet bloc research in upper atmosphere and space 11 p1690 N68-21281

Kinetics and mechanisms an of molecular oxygen and p under conditions similar to that [NASA-CR-94083] ciated with interaction tinum ribbon studied II p1690 N68-21318

Tabulated data on polar upper atmospheric conditions for July - September 1966 12 p1864 N68-21866

spheric condition data - December 1966 12 p1864 N68-21871

sphere condition data ne 1966 12 p1864 N68-21872

ent of daytime sodium 12 p1866 N68-22029

ere and space research dealing with cosmic radiation, auroral zone, and 12 p1868 N68-22484

Low energy nuclear rese ch program for upper at-MOSPhere ros 12 p1856 N68-22726

High altitude observatory research and facilities programs 13 p2062 N68-23793

Tabulated data on velocity distribution of upper air winds at Wallops Island [NASA-TN-D-4570] 13 p2101 N68-24028

A-1352

Mod

sphere (COO-

Flow

INASA Strati [NASA Excit

(REPT

Abstr dies bas [ATD-I

Uppe 28X flig [NCAR Uppe 79R flig [NCAR Uppe 34J fligi (NCAR Тгоро fects or vehicles

for Soul

Ballo for Sout [NCAR Ballo for Sout [NCAR Ballo for Sout for Soul Ballo for Soul [NCAR Ballor for Sout [NCAR

Ballo for Sout [NCAR Vene ticipatio Sovie space p Com

Winte NASA Uppe Soviet A

Kinet (NASA Satell ments in INASA

e of isolated line for simulating in-Method for de Approximation of motareu frared absorption spectra in upper atmosphere 13 p2063 N68-24067 [NASA-CR-96355] 20 p3475 N68-33526 Model calculations and se ellite drag data used to ket program for upper atvior of upper atmosphere 13 p2064 N68-24093 determine physical beha [BMWF-FB-W-68-01] Kinematics and dynamics of particle dispersion in rotating atmosphere, diffusion processes in troposphere atmospheric turbulence and diffusion [COO-158-3] 13 p.2065 N68-24326 21 p3779 N68-34241 Statistical analysis of upper atmosphere data for White Sands Missile Range, New Mexico [DR-321, PT. 3] 21 p3719 N68-34450 21 p3719 N68-34450 [COO-1585-3] osmic radiation, magnetic on, and other upper at-arch efforts reported in Air Force and NASA sci Electron concentration, isturbances, satellite mot cosphere and space resover-bloc literature ic satellite experiments in upper atmosphere /u (TR-0158/9990/-5) 21 p3772 N68-34593 Vertical structure and temperature fluctuations in upper atmosphere, anomalies in ionosphere, and whistier identification [NASA-CR-84846] 21 p3687 N68-34680 14 p2246 N68-24535 Tabulated aerological data of upper atmosphere ob-tained by radiosondes over Japan during 1964 and 1965 Upper atmosphere and space research /review of priet news items and scientific articles/ 22 p3865 N68-34840 14 p2283 N68-24638 Flow fields in upper atm sphere and effects on interlevel correlation cos odynamic variations in trop ncients between the sphere and lower strate [NASA-CR-94922] 15 p2457 N68-25771 Strata of upper atmosphere as multiple refraction medium for obliquely incident waves [NASA-TM-X-63224] 15 p2457 N68-25774 22 p3903 N68-35249 Atmospheric tidal [AFCRL-68-0309] n in upper atmosphere 22 p3869 N68-35365 Kinetic behavior of chemiluminescent reactions -ressure independence of nitric oxide emission in pper atmosphere Infrared radiation spectra of earth and ric horizon obtained by sounding rocke (ASE-1950) 15 p2409 N68-26083 Excitation of magnetohydr atmosphere model by magnet [REPT-146] 22 p3870 N68-35370 ic waves in upper in upper atmosphere ac-Concentration of hy 15 p2460 N68-26248 Abstracts of U.S.S.R. upper atmosp (NASA-CR-97012) 22 p3871 N68-35630 ere density studies based on satellite o (ATD-P-68-95-101-2) Helium, nitrogen and oxygen content in upper at-16 p2656 N68-27809 BMWF-FB-W-68-54) Upper atmospheric wind data from GHOST balloon 22 p3872 N68-35811 28X flight over Southe INCAR-TN-34, V. 21 Convective turbulence couphere determined fr bemical clouds here - tables 17 n2908 N68-28905 diffusion in upper at-stographs of luminous chemical cloud [TO-B-68-46] Upper atmospheric wind 79R flight over Southern H [NCAR-TN-34, V. 10] d data from GHOST balloon 22 p3872 N68-35876 17 p2908 N68-28906 Upper atmosphere wind profile vertical probes - 15-16 Feb. 1967 [REPT.-9] es from gun launched Upper atmospheric wind 34J flight over Southern He [NCAR-TN-34, V. 3] d data from GHOST balloon here - tables 17 p2908 N68-28907 23 p4092 N68-36151 es from gun lausched Tropospheric, ionospheric, and extraterrestrial effects on radio propagation between earth and space 23 p4092 N68-36153 FORTRAN computer p ng nonlinear equations hemical reactions of re m for numerically solv describe diffusion an of contaminants into 17 p2850 N68-29084 on data of barotropic flow in upper atmosphere for Southern Hemisph [NCAR-TN-34, V. 7] WRE-TN-HSA-1291 23 p4008 N68-36381 17 p2908 N68-29300 in upper atmosphere and alternative method Balloon data of baro for Southern Hemispho [NCAR-TN-34, V. 3] Temperature measure using fine tungsten wire a based on infrared emissio (ESRO-SN-84/ESLAB/) oic flow in upper atmosphere 17 p2908 N68-29301 carbon dioxide 23 p4058 N68-37142 Balloon data of baro ic flow in upper atmosphere for Southern Hemisph [NCAR-TN-34, V. 6] Soviet-bloc research in oceanography, astronomy, apace - news items and abst [JPRS-46568] pophysics, meteorology, id upper atmosphere and 17 p2909 N68-29302 on data of baro flow in upper atmosphere 24 p4251 N68-38035 for Southern Hemisph [NCAR-TN-34, V.]] 17 p2909 N68-29303 Wind velocity data from pared for varying lag times. [ECOM-5201] ee anemometers com-ample intervals 24 p4281 N68-38045 Balloon data of baro ow in upper atmosphere Smoothing effect of to prediction of upper air flor [EMM-67-166] for Southern Hemispher INCAR-TN-34, V. 111 17 p2909 N68-29304 ce term in num Balloon data of barot flow in upper atmosphere 24 p4253 N68-38238 for Southern Hemisph [NCAR-TN-34, V. 4] ching of Black B 17 p2909 N68-29305 SB-11 sounding rocket for (SRFB-011) Balloon data of bare for Southern Hemisph [NCAR-TN-34, V. 8] w in upper atmosphere 24 p4345 N68-38258 17 p2909 N68-29306 Automatic picture transmission meteorological radar acking system for acquiring upper atmospheric wind Venera 4 design and me atmosphere, Soviet upper ticipation in international (JPRS-45888) ment data on Venusian sphere studies, and par-(ECOM-5196) 24 p4283 N68-38281 programs 17 p2881 N68-29414 Flow visualization experimentalism and mixing process nts ciumulating particle is in earth upper at-Soviet research in ceanography, geophysisce programs - bibliogra PRS-45844] nomy, meteorology, per atmosphere, and (SC-CR-67-2812) 24 p4255 N68-38459 UPPER SONOSPHERE
NT FREGION
NT F1 REGION
NT F2 REGION 17 p2881 N68-29450 ngs, advanced U.S.S.R. satelline tracking, and 17 p2882 N68-29455 ere I sate c data 01 p0057 N68-10382 nd noctifucent clouds in frequency geomagnetic vertically through middle polar upper atmosphere (NASA-TM-X-63280) 18 p3066 N68-29770 and upper iconomic [RM-5099-ARFA] Upper atmosphere and a oviet-bloc countries ce research activities in 06 p0838 N68-15510 18 p3069 N68-30546 Kinetic theory and gas-surements of upper atmosp (NASA-CR-96311) ce interactions in meausing ion spectrometer (NASA-TM-X-63221) 15 p2457 N68-25756 density 20 p3473 N68-33272

NASA- M-X-43315

Satellite surface and particle interaction measurements in upper atmosphere using paddlewheel satellites

20 p3591 N68-33300

INASA-CR-963101

UPSETTING Tool shape effect on deformation of nonplastic steel during upartting [FTD-HT-67-235] 18 p3093 N68-30523 UPWASH Approximation method for calculating spanwise dis-ibution of wind tunnel boundary interference on wing lift in rectangular pe [NASA-TR-R-285] 14 p2179 N68-24617 Theory of interference et ce effects on dynamic measure-runnels at subsonic speeds and [ARC-R&M-3500] 14 p2235 N68-24818 Critical ched ura s of oil reflected and moderated en-soberical and hemispherical shell as-[RFP-907] 01 p0089 N68-10126 nium, reptunium and amer-reactions in perchiorate (ORNL-TR-1644) 01 p0022 N68-10554 ide electrolysis to [NLCO-994] 01 p0024 N68-10753 ecuy chains for finion miss along with half life actions and literature (USNRDL-TR-67-3) 02 p0247 N68-11543 pectrographic del by fractional carr NL-TRANS-514) of impurities in usani-on method 03 p0310 N68-11990 Heats of oxidatio using differential the (NUS-R-506) fides deterr 03 p0311 N68-12143 in geometric sphere, durante 03 p0351 N68-12355 chniques for determining nuclear itical lattices of partially enriched uranium rods in [MIT-2344-07] 03 p0376 N68-12541 quid he on of ura [ANL-TRANS-432] 03 p0353 N68-12682 Low temperature, water cooled and moderated, en-ched uranium metal feeled reactors for despiting ORNL-TM-1152, REV. J 03 p0379 N68-12690 Aluminum, nickel, and zir corresion prevention against [MLM-1334] S CON MEN 03 p0354 N68-12757 04 p0537 N68-12919 ed to natural urus EUR-3637.11 05 p0693 N68-14256 Geometry effects in a cylindrical components at of uranium metal enriches [ORNL-CDC-4] cted arrays subcritical using known criticality prism 235 05 p0693 N68-14277 ph in urani 05 p0676 N68-14520 r ion-plated alu layers on uranium (SC-DR-67-709) 05 p0679 N6E-14883 on in slab shields of ts in high alpha tem-NLCO-9911 07 p1002 NSR-14300 07 p0935 N64-16330 07 p1008 N68-16332 of human GEAP-5354) NASA-CR-72348) 10 p3473 N68-33229 23 p4052 N68-34120 08 p1205 N68-17667

De de a CE Sy ILA-X deres (UJV Mi ind cluste (EU) Co and u Un 1050 [CEA Tra SION C (EUR Prolets fo Ox JUL Pha carbie (JUL Pre by rea BAR The carbu uranit (JEN-Con EUR Ful metal [BMI-GA-I Ura GAN Che (LA-L New

(RPI-3

The

tory n

CEA

Con mixed [CEA-

Con CEA

Rela

ORN

The bides in

Fast ments

Ami

URANIU

SUB

URANIUM ALLOYS Effect of uranium on impact characteristics, active state corrosion resistance, stress corrosion resistance, machinability, microstructure, and transformation in 11 p1715 N68-21208 Ultrasonic band testing between tubes and metallic uranium core in nuclear fuel elements [REPT.-856/14/PS] 12 p1902 N68-21891 Diffusion of uranium in tantalum at temperatures exceeding 2600 deg C 12 p1886 N68-21960 Equation for calculating distribution coefficients of uranisms and plutonium between metal nitrate nitric acid and tributyl phosphate systems [KFK-671] 12 p1837 N68-22623 Fast fission effect measurements in graphite orderated uranium lattices of water cooled test reac-12 p1909 N68-22727 Effects of carbon, iron, silicon, and aluminum additions on deformation resistance of cast uranium [NLCO-1010] 12 p1890 N68-22781 NLCO-1016High hydrostatic pressure effects on ——
High hydrostatic pressure effects on ——
High hydrostatic pressure are a part of the par CEA-R-3316] Tracer method for determining uranium self-diffu-on coefficient in uranium carbide [LA-TR-68-3] 13 p2010 N68-23279 Selected mechanical and physical properties of cast very-high-assay uranium, based on statistical analysis of [Y-1593] 13 p2081 N68-23419 Physical constants testing reactor measurement of infinite medium neutron multiplication factor for uranium jithium supercell [BNWL-622] 13 p2108 N68-23871 Determining uranium and thorium content in rocks by measurement of alpha particles and gamma rays with scintillation counter (NSLTP, 103) 13 p2025 N68-24334 [NSJ-TR-103] Thermochemical assessment of plutonium-oxygen and uranium plutonium oxygen systems [STI/DOC-10/79] 14 p2371 N68-24821 Potentiometric titration of uranium by potassium bichromate in phosphoric acid [CEA-TR-X-630] 14 p2215 N68-24839 Croep analysis as function of temperature for uranium using activation energy measurements [CEA-R-3187] 14 p2270 N68-24841 Error correction transport theory code used after pectral and lattice structure analysis of uranium rods GA-8462] 14 p2292 N68-24987 [GA-8462] Precipitation of thorium and uranium by ion exchange resins in nitrate solutions [CEA-R-3222] 14 p2217 N68-25142 Elemental analysis of organophosphorus compounds and separation of uranium ions 14 p2219 N68-25612

and separation [JPRS-45458] Separation of uranium ions in polymerization-type sulfo-cation exchangers with divinylbenzene
14 p2219 N68-25614 Amperometric titration for uranium determination using ferrous sulfate as reductant [PG-827/W/] 15 p2405 N68-25808 Nuclear polarization in muonic atoms for lead, calci-um, and uranium by nucleon-nucleon interactions [PUC-937-291] 15 p2520 N68-26457 Phonon spin-lattice relaxation times for uranium and neodymium ions in calcium fluoride [NASA-CR-77664] 16 p2744 N68-27442 Analysis of trend in free world atomic power genera-on, uranium production, resources, and requirements

17 p2989 N68-28954 (ORNL-TR-1825) Microstructure changes associated with high tem-perature deformation of uranium used as nuclear fuel [NLCO-988] 17 p2901 N68-29172

Coprecipitation of uranium/6/ with iron/3/ hydrox-[KFK-TR-247] 17 p2844 N68-29287

Progress in thermodynamics, chemical analysis, nuclear fuel fission, cross sections, and burnup, electrolytic cells, reactor safety, and studies on uranium and plutonium are reported
[ANL-7375] 17 p2845 N68-29355

ANL-73/3)
Alloying and casting procedures for producing omogeneous uranium and uranium alloys containing utilium, letetium, and yttrium.

A-3911
18 p3093 N68-30531

A-9911]
Thermal decomposition of uranium hydride powder, irburization of uranium with methane, and method of ranium monocartiside fabrication
JEN-177-DME/I-22]
19 p3221 N68-30960 (JEN-177-DME/I-22)

Fluorimetric analysis of fused uranium in sodium [NIM-163] 19 p3222 N68-30991 Cross correlation method for measuring neutron Cross correlation measure uranium assembly 19 p3322 N68-30996

Polarographic determination of hexavalent uranium as uranyl fluoride in uranous fluoride [NIM-129] 19 p3223 N68-31110

Fast neutron spectra measured in spheres of depleted iched ura 19 p3326 N68-31156

Spectroscopic determination of uranium impurities by carrier distillation method [JEN-191-DQ/I-65] 19 p3223 N68-31162

Radioactivity of pure uranium, and its growth to quilibrium with daughter products NIM-162] 19 p3329 N68-31368 INIM-1621 X ray diffractometric investigation of phase transfor-

mation of pure uranium [ANL-TRANS-601] 19 p3293 N68-31668 Fuel dynamics of thin walled metallic uranium tubu-reactor assembly

[HPR-89] 20 p3531 N68-32981 Program for assessment of natural uranium con-sumption of different types of thermal reactors [RISO-M-684] 21 p3723 N68-33991

Spatial resolution effects on critical mass calcula-ons of reflected and moderated uranium-metal

[RFP-1133] 21 p3724 N68-34147 High speed cathodic etcher for uranium, uranium al-(UCID-17327)

21 p3698 N68-34369 Uranium contamination in pyrolytic carbon and sil-on carbide coating on uranium carbide fuel pellets GAMD-8325] 22 p3912 N68-35818 [GAMD-8325]

Literature survey on uranium combustion in con-

trolled atmospheres [RD/B/N-1154] 22 p3981 N68-35958 Irradiated uranium and plutonium carbide nuclear fuel performance evaluation [CONF-671005-7] 23 p4103 N68-36909

CONT-0-1003-7 Uranium recovery from aluminum clad fuel elements aing Mohen Salt Volatility Pilot Plant ORNL-4251] 23 p4069 N68-37098 [ORNL-4251]

Extraction apparatus for flow sheet testing with plu-mium and observing decontamination of uranium by Plutonium RT/CHI/68/111 24 p4216 N68-37928

URANIUM ALLOYS

Preparation of low carbon content uranium-molyb-denum alloys to determine effects of adding small amounts of carbon on primary crystallization of 1.1 percent U-Mo alloys [ORNL-TR.1668] 01 p0075 N68-10377

Heat treatment effects on structure of uranium alloys with low mobium content [ORNL-TR-1695] 01 p0077 N68-10778

Mechanical and physical properties of metastable amma-phase uranium alloy [UCID-15170] 02 p0221 N68-11477

Mechanical and corrosion properties of eleven pha-beta uranium alloys for various aging and othermal transformation heat treatments isothermal transformat [AMMRC-TR-67-04] 03 p0350 N68-12025

[AMMRC-TR-67-04] 03 p0350 N68-12025 Sodium reaction studies, hydrogen behavior in sodi-um, scan tests with ultrasonic transducers, and equa-tions of state of uranium carbides and uranium alloys (APDA-206) 05 p0627 N68-14756

Surface defects in rolled uranium rods, drop tests of cast uranium base dilute binary alloys, and alpha spectrometric determination of neptunium and plutonium in uranium process solutions
[NLCO-996] 07 p1007 N68-16329 07 p1007 N68-16329

Elevated temperature drop hammer tests of cast uranium base dilute binary alloys
07 p1008 N68-16331

Annual report on reactor fuels and materials 07 p1033 N68-17145

Spectroscopic analysis for uranium-molybdenum al-loys containing up to 10 percent Mo [JEN-187-DQ] 11 p1643 N68-20606

Dilatometric method for isothermal transformation of beta yield alpha in uranium 0.4 percent weight [REPT.-874/14/PS] 12 p1888 N68-22322

Metallographic and X ray analysis of isothermal phase transformation in uranium chromium alloy [IBJ-873/XIV/PS] 12 p1888 N68-22347

Technical research and development in reactor fuel 12 p1905 N68-22527

Stabilization of intermetallic phases of aluminum-uranium alloys with ternary additions [BMWF-FBK-67-88] 12 p1892 N68-22930

Nuclear fuel materials, characteristics of uranium and plutonium alloys, and radiation effects on materials during nuclear reactor operation 14 p2290 N68-24609

Influence of impurities on strain orientation in low loyed alpha uranium (JPRS-45470) 14 p2269 N68-24632 Criticality data tables for unmoderated and

Criticality data and commoderated dranium and plutonium cores [AHSB/S/-HANDBOOK-5, PT. 1]
15 p2504 N68-26793

Dilatometric analysis of phase transformation in uranium chromium alloy at high temperatures [INR-874/XIV/PS] 16 p2685 N68-28209 Metallographic und X ray analysis of isothermal phase transformation in uranium chromium alloy [INR-873/XIV/PS] 16 p2685 N68-28212

Reactor radiation effects on electrical resistivity of ranium binary alloys containing small quantities of al-

loying elements [AERE-TRANS-1093] 17 p2899 N68-28452 Plutonium and uranium enriched alloy driver fuels or Fast Flux Test Facility /FFTF/ reactor BNWL-514] 17 p2916 N68-29022

Field emission microscope investigation of effects of heat treatment on stress corrosion cracking of uranium-molybdenum alloys [AD-669252] 17 p2902 N68-29285

Alloying and casting procedures for producing omogeneous uranium and uranium alloys containing omogeneous urannum ulium, lutetium, and yttrium 18 p3093 N68-30531

[LA-3911] Ignition and burning characteristics of zero power ium reactor U-Pu fuel alloy 471] 18 p3119 N68-30712

ARH-471] Aluminum ionization plating of uranium-molyb-denum alloy fast nuclear reactor materials to protect

(Y-1617) 19 p3313 N68-32040 Performance calculations for pebble bed reactor with uranium-plutonium cycle [JUL-542-RG] 22 p3910 N68-35614

X ray analysis of uranium alloy structure [CEA-R-3494] 23 p4078 N68-36957

URANIUM CARBIDES

Uranium carbide preparation from uranium tetrafluoride, ammonium diuranate, and uranium trioxide studied to optimize production 02 p0175 N68-11281 [AI-CE-73]

Research and development of uranium plutonium carbide fuel element fabrication technique [WCAP-3791-4] 03 p0373 N68-12424 technique 03 p0373 N68-12424 Heat conductivity of nuclear materials between 100

and 500 deg C [EUR-3644.1] 03 p0427 N68-12442

Krypton release rate in thin layer of uranium carbide [EUR-3556.F] 03 p0314 N68-12467

Equipment and facility specifications for isothermal electron irradiation of uranium carbide [EURAEC-1763] Fluidized bed coating of uranium monocarbide with

[TRG-1544/S/] 04 p0466 N68-13038 Stabilized uranium-plutonium carbide solid fuel for liquid metal-cooled fast breeder reactor [WCAP-3791-8] 04 p0542 N68-13896 um carbide solid fuel for

Conventional and elastic neutron diffraction patterns of powdered uranium monocarbide obtained with triple axis spectrometers
[EUR-3655.E] 05 p0680 N6R-14510

Thermal conductivity of uranium plutonium carbide 05 p0755 N68-14544

Sodium reaction studies, hydrogen behavior in sodi-um, scan tests with ultrasonic transducers, and equa-tions of state of uranium carbides and uranium alloys [APDA-206] 05 p0627 Nef-14756

High temperature properties of Hf, Ta, U, and Zr carbides for fuel and structural applications 06 p0854 N68-15359

Determination of ruthenium in uranium carbide-ruthenium and plutonium carbide/uranium carbide-ruthenium cermets by oxidizing ruthenium with sodium hyperchlorize [AERE-R-5617] 06 p0788 N68-15475

m oxycarbides at 100 to

07 p1013 N68-17212

08 p1202 N68-17263

odynamics, and forma

08 p1143 N68-18032

nts in uranium carbide

09 p1374 N68-18534

11 p1713 N68-21031

12 p1893 N68-23019

13 p2010 N68-23279

14 p2293 N68-25172

ium carbide fuel pel-

15 p2505 N68-26798

nium monocarbide pellets um dicarbide and uranium

18 p3117 N68-30433

e fuel rods 21 p3724 N68-34359

23 p4078 N68-36938

23 p4079 N68-37096

23 p4157 N68-37191

iffects on nuclear fuel ele-

Phase boundaries, lattice constants, solubility, and homogeneity studies in uranium carbide - zirconium carbide - carbide system [JUL-516-RW] 17 p2899 N68-28568

Thermal decomposition of uranium hydride powder, carburization of uranium with methane, and method of uranium monocarbide fabrication [JEN-177-DME/l-22] 19 p3221 N68-30960

Computer analysis of burnup for sintered aluminum owder cladded uranium carbide fuel rods

Fully dense /U, Ta/C alloy fabrication by powder metallurgy techniques [BMI-1840] 21 a2706 M68.34664

Phonon dispersion curve for beryllium analyzed, and neutron cross section for uranium carbide measured [GA-8626] 22 p3933 N68-35717

Uranium contamination in pyrolytic carbon and sil-icon carbide coating on uranium carbide fuel pellets [GAMD-8325] 22 p3912 N68-35818

Chemical diffusion coefficient of carbon in uranium arbides as function of composition and temperature LA-DC-8840] 23 p4007 N68-36345

Neutron inelastic scattering for metal hydrides and ranium carbide at room and cryogenic temperatures RPI-328-101] 23 p4116 N68-36540

Thermodynamics of pilot scale purification of refrac-tory metals, and vacuum melting of vanadium and uranium monocarbides (CEA.B. 2002)

Complex hydrocarbon mixture from hydrolysis of mixed thorium-uranium dicarbides [CEA-R-3215] 23 p4013 N68-36997

Contribution to study of /U, Pu/C, N system [CEA-R-3536] 23 p4014 N68-37038

Relating chemical composition and microstructure after heat treating uranium carbides using

Thermoelectricity of uranium and zirconium car-

Preparing high density uras y reaction sintering of urani

metal powder (BARC-3191

EUR-4031.F1

Uranium contan

[RPI-328-101]

[CEA-R-3390]

ORNL-3513]

bides in cesium vapors (FTD-HT-23-898-67)

m carbide reactions with studied between 650 and

nd high temperature proper-ranium carbide and oxide

Thermal diffusivity of uranium oxycarbides at 100 to 1500 deg C as function of oxygen concentration [BNWL-SA-1494] 07 p1096 N68-16740 Density measurements performed on uranium dioxide and uranium carbide samples irradiated at low tem-CEA-R-3289] Synthesis, fabrication, and ties of plutonium and uras nuclear fuel materials [LA-3820-MS] X ray analysis and metallographic examination of uranium carbide-uranium cermet prepared from pow-dered metallic uranium and carbon black (UJV-1356) 08 p1184 N68-17265 [UJV-1356] Molecular structure, the tion of uranium carbides [JAERI-4042] Index spectrum measureme cluster fuel elements [EUR-3736.E] Compatibility between sintered aluminum products and uranium monocarbide [ORNL-TM-2010] 11 p1713 N68-21031 Uranium and plutonium astenitic stainless strels st 1050 deg C [CEA-R-3353] Tracer method for determining uranium self-diffusion coefficient in uranium carbide [LA-TR-68-3] 13 p2010 N68-23279 Snaping and irradiation of uras [EURAEC-1980] Production of uranium lets for irradiation test cap [WARD-3791-12] Oxygen and nitrogen determination in uranium car-bides, uranium nitrides, and some transition metals [JUL-517-RW] 17 p2899 N68-28552

ower 712 olyb-otect 0040 ctor 614 957

DEX

2527

inum

2930

nium erials

4609

low

4632

and

6793

n in

8209

rmal

8212

ty of

8452

fuels

9022

ts of

9285

cing

0531

iium iox-281 ium 424 100 442

544 odi-756 Z 359

ide-ide-ium

475

Fast neutron irradiation of ments and cladding materials [UNC-5201] 23 p4104 N68-37222 URANIUM COMPOUNDS Ammonolysis of uranium tetrachloride and tetrabro-(UCRL-TRANS-10097) 01 p0018 N68-10254

Uranium chloride activity in eutoctic lithium chloride-potanium chloride melt (LA-TR-67-76) 01 p0025 N68-10785 nd properties of maran-of uranium and photonium 01 p0025 N68-10790 Preparation and pairtide mixtures of us (LA-TR-67-24) Kinetic study of fluorination reactions of uranium nd plutonium compounds with elementry fluorine sing thermogravimetric method using thermogravimet 03 p0310 N68-11981 Liquid condensation romme pentafluoride m of uranium hexafluoride sixture from noncondensable (K-L-2223) 03 p0312 N68-12214 Analytical procedures for uras [K-L-6]40] 03 p0312 N68-12246 Calculations on mesh structure transport in cylindrical [AEEW-M-760] ture requirements for transium graphite cell 03 p0397 N68-12724 Vaporization of binary uranium compounds, and in-termediate uranium compounds with bismuth, lead, gallium, indium, and zinc [UJV-1783] 05 p0628 N68-14880 n nitride fuels for liquid Jranium nitride-plutoni tal fast broeder reactors 06 p0871 N68-15012 Method for determining low concentrations of ruthenium dispersed as metal or discide in milligram sized samples of uranium dionide [AECL-2771] 06 p0787 N68-15454 06 p0787 N68-15454

Gas chromstography and fragmentation-gas chromatography of diphosphine oxides and uranyl nitrate-diphosphine oxide complexes [15-T-184] 09 p1294 N68-18829 Radiographic data on qui um, zirconium system [KFK-643] 10 p1479 N68-19527 Powdered uranium-alur nuclear reactor fuel eleme (IN-1133) ide compounds for use as 12 p1904 N68-22327 Mixed uranium plutoniu thermal reactor applications (BMI-1826) m carbonitride fuels for

16 p2703 N64-27225 Solid state galvanic cells for determining partial pressure of oxygen over three phase mixture uranium monosetifich, uranium oxysulfide, and uranium dioxides at high temperatures 17 p2837 N68-28453

Crystal structure, Gibbs free energy, and vapor com-position and pressure in vaporization of binary uranium compounds for reactor technology [ANL-TRANS-584] 17 p2842 N68-29117 17 p2842 N68-29117 Bonding, phase relationships, and electronic struc-ture of uranium nitride refractory metal [PEL-165] 18 p3027 N68-30412

Thermal decomposition of uranium hydride powder, arburization of uranium with methane, and method of ranium monocarbide fabrication uranium monocarbide [JEN-177-DME/I-22] 19 p3221 N68-30960

Elution method and spectrop thiocyanate in uranium solutions [NIM-167] stometric analysis of 19 p3222 N68-30993 Automated tri-e-butyl phosphate method for analyz-ing uraniom samples (NIM-156)

Calculation of thermodynami in the uranium nitrate-water syst [AAEC/TM-447] librium relations 19 p3227 N68-31561 termining uranium and ceramic fuels 19 p3232 N68-31945

Mixed crystal formation in b um nitride and mononitrides of in binary systems of urani-les of titanium, hafnium, and (KFK-721) 19 p3233 N68-31972

Crystal formation and phase relationships of uranium nitride and carbonitride systema [JUL-472-RW] 22 p3897 N68-35712 22 p3897 N68-35712 Nondestructive method for burn up determination of coated uranium and thorium nuclear fuels [JUL-529-RX] 22 p3912 N68-35845 Growth of sranium nitride single crystals in nitrogen

(UCID-15238, PT. 1) 23 p4101 N68-36600 Zeeman effect and polarized vibrational spectrum of crystallized cesium uranium halides 24 p4329 N68-37544

X ray diffraction analysis of radiation damage in ir-radiated powder samples of uranium and zirconium compounds (KFK-745) ics and structure of uranyl ion Chemical charact in excited condition 24 p4219 N68-38322 **URANIUM FLUORIDES**

Vibrational spectrum of uranium hexaffuoride in both gameous and solid states [CEA-R-3235] 01 p0018 N68-10041 Corresion of mickel and mickel alloys by fluorine, product fluoride at 500 deg C

[ANI, 7241] Literature survey on conversion of scanium his-fluoride to uranium dioxide Critical experiment for cavity reactor using gamous uranium hexafluoride core configuration. [NASA-CR-72329] US p0992 fees-14173 Critical experiments unalysis of uranyl fluoride solution reactors containing large disasters voided tubes (NASA-TN-D-4270) US p0872 NSS-15197

Heats of formation of gase [CEA-TR-R-1905] 09 p1297 N68-19036 Triple point depression curves for tangeton and objectenum hexafluorides in uranium hexafluoride, ad applications in analyzing solutes in uranium hea-thuride.

(K-1697) 15 p2405 N68-25890 Cavity reactor critical experiments with full gaseous core of terminan hexafluoride, and mackap experiments using short fuel [NASA-CR-72415] 87 p2914 N68-28612 17 p2914 N68-28612

Spectroscopic analysis of uranism tetrafluoride im-Presuring dynthesis of uranium hexafluoride from uranium oxides and fluorite (NUS-R-525)

Polarographic determination of hexavalent uranium as uranyl fluoride in uranous fluoride [NIM-129] 19 p3223 N68-31110 19 p3223 N68-31110 Reactions of uranium tetrafluoride with anhydrous and hydrous hydrazine [NIJS-R-524] 20 a3422 Mes. 2000.

[NIJS-R-524] 20 p3422 N68-32693 Differential thermal analysis of the binary system uranium terraflaoride-uranium dioxide [NLCO-TR-9] 20 p3431 N68-33193 d of correcting man spec-of uranium bezaffsoride

Linear interpolation method ometer instopic analysis of ghly enriched in urusium 235 CEA-R-33371 22 p3827 N68-35553 RANIUM ISOTOPES

Internal conversion coefficie keV transition in uranium 236 [15-1683] nt measurement for 45 05 p0714 N68-14519 Spectrum analysis of beta and internal electron con-ersion at 25.6 keV transition in thorium to arradium

(NP-17208) The COLINIARY 12 p1941 N68-22907

Energy spectrum calculations for antineutrino emission of binary fission fragments of uranium 235 [SRO-141] 12 p1941 N68-22910 Spectroscopic analysis for di tration and isotopic compositio [CEA-R-3219] etermination of concen-ne of boron in uranium 14 p2217 N68-25153

Erbium low energy spin parity assignments, neutror ingle particle states of curium plutonium uranium sotopes, and charged particle blocking in single isotopes, and crystals [ANL-7405]

17 p2933 N68-29023 peratures 19 ±3350 N68-30997

Regenerative in-core as mixture of fertile and finile [BNWL-SA-1621, REV.] e flux menitors usin 21 p3724 N68-34304

24 p4309 N68-37595

URANIUM OXIDES

ned uranium dioxide this folls ex-Bulk irradiated aminated by transmit [TRG-1478/W/] 01 p0090 N68-10425 Double differential neutron scattering cross accions for zirconium hydride and uranium disaids reactor [AECL-2915] 01 p0092 N68-10475 de ceramic fuels fabrication for Uranium dior nuclear reactors [NP-16745] Photodecomp organic media [COO-1695-3] mation of wanyi loss in 01 p0023 N68-10637 sloy-clad fluid rods con-nide pollete 01 p0094 N68-10724

UB

[GI

D

P

tres dev (BA

Stru

C

T

T

T

GE

D

Urat [NL

POW EL

(GE

Economic feasibility of uranium oxide electrolysis to 01 p0024 N68-10753 Chemical problems associated with thermodynamic nalyses of lattice defects for nonstoichiometric phases a uranium dioxide 01 p0082 N68-10805 Metal oxide addition effects on pressing and sinter-ing of uranium dioxide [WAPD-TRANS-58] 01 p0082 N68-10872 01 p0082 N68-10872 Phase relationships, fabrication, and properties of th-stoichiometric oxide nuclear fuel EURFNR-286] 01 p0096 N68-10949 IEURFNR-2861 [EURPNR-286] 91 p0096 Nos-10949 Mathematical evaluation of pressure density depen-dence for fragile, sintered uranium dioxide powders [RT/ING/67/6] 01 p0071 N68-10959 Chemical stability of plutonius ides in high temperature air [AAEC/TM-352] 03 p0310 N68-12047 Urunia behavior in thermal gradient and control of ometry 03 p0356 N68-12169 Equilibrium fuel cycle costs for low-enriched, un-iclad, helium cooled, uranium oxide graphite reactor [ORNL-TM-1789] 03 p0373 N68-12420 Uranium oxide and plutonium oxide fuel rods for ex-erimental boiling water reactors BNWL-SA-1139/REV.A/J 03 p0376 N68-12539 Cost estimates for preparation and fabrication of solid-gel metal-clad uranium and plutonium oxide fuel (ORNL-TM-1979) 03 p0376 N68-12553 Reactions between chlorine trifluoride and toorinated transium dioxide explained in terms of [ANL-TRANS-524] 03 p0315 N68-12580 Characterization and cladding-fuel evaluation of tainless steel uranium oxide fuel elements for nuclear reactors [ORNL-TM-1676] 03 p0377 N68-12610 Fission gas release and description of xenon 133 from irradiated uranium oxide [CEA-R-3021] 03 p0394 N68-12612 Mochunical properties of beryllium oxide fuels dispersed with uranium dioxide and thorium dioxide [AAEC/TM-338] 03 p0381 N68-12729 Thermal expansion characteristics of column of unium oxide fuel pellets under radial temperature GEAP-5284 03 p0381 N68-12733 Alpha and beta-g toradiography of high per-uranium oxide fuels 03 p0381 N68-12737 formance pellet and powder uras [GEAP-5100-7] Vapor densities and dissociation pressures used to etermine thermal stability of zircoma and thoria base facis [BMI-1789] 03 p0382 N68-12749 Buckling, fine structure, and neutron spectrum parameters measured for heavy water moderated lat-tices of 19 element rods of thorium dioxide enriched 04 p0538 N68-13373 Plutonium enriched fuel use in pressurized water reactor systems through design, fabrication, and opera-tion of partial core of plutonium oxide uranium oxide WCAP-3385-121 04 p0542 N68-13870 Physical properties of Zircaloy 4 and uranium dioxide determined for analysis of ions of coolant reactor 05 p0752 N68-13967 bradiation testing of ph the for fast breeder reach UMEC-3432-35] of plutonium and uranium oxide reactors and thermal reactors 05 p0691 N68-13995 VUINEEC 39 22-35 Vapor and dissociation pressure measurements of soliton oxides to determine their saitability as solvents or seasium oxides in high temperature reactor TUBIK-41 005 90680 N68-14000 TUBEK-41 Physical properties of urunium dioxide single crystals (EUR-3323.E) 05 p0681 N68-14771 Establishing allowable temperature gradients for temperature gradients

Uranium and photonium dioxides and nitrides, transic coatings, and irradiation effects on facts and

06 p0871 N66-15011

06 p0872 N68-15015

Fluidized bed processing of unirradiated uranium dioxide reactor fuel [K-L-6142] 12 p1909 N68-22747 Effects of irradiating uranium dioxide-cerium dioxide and uranium dioxide-zirconium dioxide fuels to high burnup 12 p1909 N68-22747 06 p0872 N68-15016 Irradiation effects on initial gap measured on urani-um oxide fuel elements sheathed in thick tubes [CEA-R-3358] 12 p1909 N68-22760 Fueled capsule tests to determine rate of uranium ac-umulation on Fe-Cr-Al cladding on uranium dioxide 06 p0787 N68-15361 Thermal conductivity measurements on uranium Relative total neutron densities and hyperfine man-anese activation distributions for natural uranium dioxide at high temperature gradi [WAPD-TRANS-82] 12 p1912 N68-22943 Nonstoichiometric effects on high temperature strength of iron, titanium, and uranium oxides [REPT.-67-C-243] 13 p2016 N68-23702 [AECL-2772] 06 p0875 N68-15506 Effects of temperature and lattice pitch on material buckling and reaction rates in low enrichment uranium dioxide fueled cores moderated by light water [AEEW-R-302] (6 p0876 N68-15780 Post irradiation examination of thorium-uranium [BAW-3809-1] 14 p2287 N68-24372 Preparation and crystal chemistry of promethium compounds, vagor phase hydrolysis of actinide chlorides, lattice constants of lanthanides, and uranium dioxide and radium studies [BMWF-FBK-6.7-6] 07 p0953 N68-16172 Formulas for quantitive analysis of uranium oxide in abcritical assembly of water moderated reactor IEA-130] 14 p2288 N68-24428 Computer program for evaluating material bucklings of uranium oxide moderated by heavy water-water mix-Nonstoichiometry in uranium oxide with respect to ependence on temperature and oxygen pressure CEA-R-3218] 07 p0954 N68-16314 14 p2269 N68-24490 [IEA-128] CEA-R-32181 Group theory analysis of enriched uranium oxide lat-tices moderated by mixtures of deuterium oxides and Equation of state for uranium dioxide and Mie grucisen equation for melting process. FOA-2-2496-44] 07 p1035 N68-16335 (IEA-139) 14 p2289 N68-24514 Lattice parameters of subcritical assemblies using enriched uranium dioxide [EUR-3378.F, ANNEX] 07 p1028 N68-16493 Enthalpy measurements sten at high temperatures [GEMP-578] prements of uranium oxides and tung-14 p2370 N68-24750 Continuum dilutation model for creep swelling of ceramic nuclear fuels [WAPD-TM-649] 07 p1028 N68-16533 Plutonium, uranium, and zirconium oxide fuel development program [NUMEC-3505-30] 14 p2291 N68-24755 Nuclear magnetic resonance study of hydrated urani-ium dioxide Irradiation of uranium oxide samples in presence of [NUS-R-509] 07 p0959 N68-16900 (CEA-R-3329) 14 p2217 N68-25091 Irradiation performance of fast reactor fuels - evalua-tion of uranium and plutonium dioxide fuels [KFK-662] 07 p1032 N68-16999 Thermal conductivity uranium and uranium-plutoni-(GEAP-4879) 14 p2375 N68-25347 Production and release rates for nuclides from urani-um uside fuel elements (RT/FIMA/67/2) 07 p1032 N68-17037 Neutron scattering cross sections for uranium oxide, econium hydride, and diphenyl Zirconium alloy clad uranium dioxide fuel bundles for use in pressurized water, boiling water, and organic liquid cooled reactor systems [AECL-2928] 07 p1033 N68-17103 14 p2317 N68-25353 Fast flux irradiation of plutonium and uranium exide fuel pins in Experimental Breeder Reactor 2 [GEAP-5570] 14 p2295 N68-25359 Mass spectroscopic method for determining oxygen self-diffusion profiles in uranium dioxides [WAPD-TRANS-83] 14 p2279 N68-25632 Density measurements performed on uranium dioxide and uranium carbide samples irradiated at low tem-CEA-R-3289] 07 p1013 N68-17212 Plutonium and uranium oxide ceramic nuclear fuel reparation and chemistry Energy conversion in vapors ionized by fission 15 p2404 N68-25701 BAW-3714-51 08 p1122 N68-17808 Subcritical experiments on water-manuscripted with 5 percent uranium 235 08 p1144 N68-18143 Fluoride sensitive electrode method for determina-on of fluoride in uranium and plutonium oxides INWL-6011 15 p7405 NSS-25927 lutonium oxides 15 p2405 N68-25927 system enriched w (EURAEC-1882) (BNWL-6011 Mass spectroscopy studies on thermodynamic pro-perties of uranium-oxygen systems [ANL-TRANS-561] 15 p2414 N68-26305 Plutonium dioxide uranium dioxide fast reactor fuels development and testing [NUMEC-3524-43] 09 p1374 N68-18557 [ANL-TRANS-561] 13 p2414 N68-20303 Uranium oxide thermal conductivity, density effects, and gap conductance from in-pile measurements [HPR-80] 15 p2503 N68-26487 Oxide deformation and fiber reinforcement in tung-en-urania and tungsten-zirconia elongated into fibers Crack and void elimination on thorium oxide uranium oxide pellers by irradiation
[AECL 3008] 15 p2505 N68-26799 by hot extrusion (NASA-TN-D-4475) 09 p1352 N68-18610 Inert gas fusion techniques for macrodetermination of oxygen in uranium dioxide composites [ANL-7264] 10 p1479 N68-19540 Irradiation of Zircaloy-clad tubular uranium oxide fuel elements in Heavy Water Components Test Reac-Fabrication and measurement of thermal expansion and conductivity, and tensile strength of molybdenum activations oxide fuel types [GEMP-545] 10 p1554 N68-19595 ter /HWCTR/ [DP-995] 16 p2703 N68-27200 Thermochemical stability of uranium and plutonium fuelled graphite during irradiation [AECL-2783] 16 p2610 N68-27790 nic behavior of plutonia-urania solid Thermodynamic behavior solutions at high temperatures [GEAP-5358] Preparation of thorium oxide-uranium oxide solu-tions of low nitrate content from thorium uranyl nitrate 41 p1802 N68-20998 Post-irradiation examination of uranium dioxide fuel memblies from Carolinas-Virginia Tube Reactor ORNL-TM-21281 16 p2612 N68-28021 Thermal buckling and neutron reaction rates in study of lattice parameters after fuel burnup in heavy water power reactors [DP-1122] 16 n.2708 N68-22147 /CVTR/ [WCAP-3850-1] 11 p1742 N68-21272 Irradiation experiments for measurements of depar-re effects from stoichiometry on heat transfer in anium dioxide fuel specimens 16 p2708 N68-28167 Spectrographic and volumetric analysis of fission gases released within spent uranium oxide rods.
[WCAP-6087] 16 p2709 N68-28172 11 p1652 N68-21285 Gas-solid surface reactions of uranium oxides [BARC-307] 11 p1654 N68-21422 Uranium dioxide fuels for organic cooled reactors [AECL-2758] 17 p2913 N68-28369 Smooth surface coating of molybdenum alloys for cermets by hot isostatic compaction of tungsten-urani-Preparation of thorium and uranium and plutonium uside gels and solt as nuclear fuel elements [ORNL-TM-2205] 17 p2840 N68-28797 11 p1743 N68-21705 INASA.TM.X.15631 Storage stability of uranium dioxide powder, and equations describing oxidation behavior in air at room Preparation and preirradiation of pyrolytic carbon couted solgel uranium dioxide particles for X-basket-2 [AAEC/TM-396] 12 p1905 N68-22456 irradiation experim [ORNL-TM-2097] 17 p2915 N68-28940 Temperature coefficients measurements of reactivity organic cooled lattices with simulated burned-up Heat transfer inside nuclear furt of compacted urani-um oxide and uranium oxide-plutonium oxide powden [EURAEC-1998] 17 p2986 N68-28971 12 p1906 N68-22564

18091

UBJECT INDEX DEX Results from diffusion experiments performed on uranium oxide samples
[EURAEC-1978] 17 p2934 N68-29031 -22747 Recovery of excess hydrogen used in reduction of urani-17 p2842 N68-29043 22760 Cracking of ammonia and its use in reduction of ranium 17 p2842 N68-29044 22943 Combustion characteristics of uranium oxide sin-tered pellet and powder nuclear fuel elements [GEAP-5585] 17 p2917 N68-29233 rature 23702 Development, autoradiographic quality control, gravimetric and impurity analysis given for uranium and plutonium oxide fast reactor fue!
[NUMEC-3524-47] 17 p2917 N68-29352 anium 24372 17 p2917 N68-29352 tide in Chemical method for determining uranium in urani-um oxides of high purity [CNEA-299] 17 p2845 N68-29395 24428 klings r mix-Thermal conductivity of mixed uranium-plutonium [CEA-R-3488] 18 p3089 N68-30048 24490 Specific power distribution of uranium oxide and uranium oxide boron oxide mixture fuel rods in RITMO nuclear reactor [CNEN-RT/FI/68/13] 18 p3114 N68-30055 de lates and 24514 Pressurized synthesis of ur ranium exides and fluorite um hexafluoride from tung-[NUS-R-525] 18 p3026 N68-30276 24750 Relations between powder properties, sintering treatments, and densification and microstructure development in uranium oxide pellets [BARC-314] 18 p3117 N68-30474 fuel 24755 18 p3117 N68-30474 Thermochemical and electrical properties, crystal structures, and stoichiometry of uranium oxides [JAERI-4045] 18 p3120 N68-30764 nce of 1902

utomi-

5347

saide.

5353

oxide

5359

ygen

5632

fuel

5701

5927

pro-

6305

ects.

6487

rami.

6799

xide

200

ium

790

1021

167

sion

172

369

ium

797

940

Spectrographic determination of zirconium in urani-19 p3223 N68-31107 Microstructure changes induced by center melting and formation of central voids in powder compacted uranium exide fuels [NSJ-TR-124] 19 p3310 N68-31287 Effect of porosity for sintered uranium dioxide on kinetics of grain growth

19 p3227 N68-31441 Critical assembly of uranium dioxide water moderated multiroid reactor [BAW-3647-7, PT. 2] 19 p3312 N68-31656

Irradiation testing of low density uranium oxide tainless steel dispersion fuel for Mark 1 cure of Ar-onne Advanced Research Reactor 19 p3314 N68-32084 IN-11601

Thermal decomposition of uranium oxides in vacuum, and extent of region of homogeneity in rhombic phase (RTS-4586) 20 p3421 N68-32665

Preparation of thorium dicarbonate, uranyl car-bonate, and rare earth sesquicarbonates from cor-responding anhydrous acetates

20 p3426 N68-32861

Thermal conductivity measurements on tungsten coated uranium dioxide cermets [NASA-CR-1154] 20 p3531 N68-32983 Thermal behavior of ceramic uranium and plutoni-um oxide fuels under irradiation at high specific ratings [EURAEC-1999] 20 p3531 N68-33001

Thorium dioxide and uranium dioxide sol-gel materi als processing [ORNL-TM-] 809]

20 p3430 N68-33079 Thermal conductivity measurements on sintered pel-lets and compacted uranium dioxide fuel in reactor pile

dioxide apheres from gas phase [MLM-1308/TW]

Differential thermal analysis of the binary system ranium tetrufluoride-uranium dioxide NLCO-TR-9] 20 p3431 N68-33193

[NLCO-IR-9]
Temperature distribution in uranium dioxide reactor fuel elements - mathematical description of heat transfer mechanisms in cylindrical fuel elements

4E-318
21 p3724 N66-34108

Heat transfer in nuclear fuels made from uranium oxide and uranium oxide-plutonium oxide compacted 21 p3724 N68-34360

EURAEC-1998] Fission gas release from uranium dioxide irradiated isothermally at temperatures from 1500 to 2100 deg C [GEAP-5100-10] 21 p3725 N68-34395

Solubility of sintered uranium exide-plutonium exide breeder reactor fuel in nitric sold [KFK-673] 21 p3725 N68-34404

Thermal conductivity of mixed plu oxide fuel rods after irradiation [EURAEC-1999] 21 pl 21 p3725 N68-34460

Procedure for metallographic preparation and subsequent examination by replica electron microscopy of molybdenum-aranium oxide cernet fuels [LA-DC-9616] 21 p3727 N68-34598

Gel-addition process for preparing mixed plutonia-urania fuels [BAW-3714-6] 21 p3655 N68-34746

Thermodynamic properties of oxygen in non-stoichiometric uranium dioxide [AECL-3072] 22 p3976 N68-34875 Sintering uranium trioxide to den

DP-10851 22 p3884 N68-35679 Thermal diffusivity and thermal conductivity of stoichiometric uranium-plutonium oxides [BNWL-704] 22 p3979 N68-35692

Sequential chemical separation procedure for post-irradiation examination of thorium oxide and uranium oxide fuels [BAW-3809-2] 23 p4100 NAS 16140

Behavior of Zircaloy 2 clad, vibrationally compacted uranium oxide fuel rods in transient reactor [BNWL-SA-1674] 23 p4103 N68-37011

Irradiation-induced changes containing low density uranium [WAPD-TM-596] in Zirculoy-4 clad rod dioxide fuel pellets 24 p4294 N68-37739

Trace impurity determination dered uranium dioxide nuclear [NASA-TT-F-11869] in pelletized and pow-24 p4214 N68-37742

Thermal conductivity of uranium dioxide measured as function of density between 800 deg and 2000 deg C [GEAP-5493] 24 p4354 N68-37776 on for Zircaloy-2 clading irradiation 24 p4295 N68-37866 Average burnup determination uranium dioxide fuel rods follow [GEAP-5598]

Fluorination of uranium and photonium oxide fission product oxide pellets with fluorine in two inch diameter fauld bed reactor [ANL-7372] 24 p4216 NAR-23062

24 p4216 N68-37952
Time dependent behavior of platonium dioxide, runnium dioxide, sodium aerosol produced by apportation of fast reactor core materials. BNL-12757]

24 p4216 N68-37952 **URANIUM 232**

Burn efficiency of uranium 232, uranium 233, plu-mium 238, and curium 224 - Yankee Core Evaluation

WCAP-60831 05 p0697 N68-14940 Neutron cross sections for protactinium isotopes and ranium 232

[GA-7462] 12 p1929 N68-22546 URANIUM 233

Liquid scintillation counter for measuring alpha sc-tivity in uranium 233 [JUL-491-PC] 01 p0024 N68-10765 U-233 critical mass requirements for two specific vortex stabilized nuclear light bulb and open cycle gaseous nuclear rocket engines (NASA-CR-90112) 01 p0096 N68-10931

Liquid scintillator method for eutrons produced in thermal new furanium and plutonium isotopes NAEC/E-1721 for measuring prompt neutron induced fission

03 p0389 N68-12332 [AAEC/E-172] Methods for determining nuclear fuel burnup, emphasizing measurement of fusion yields of stable cesium and zirconium isotopes for U-233 and U-235 by 05 p0620 N68-14198

Neutron multiplication factors of uniform aqueous solutions of uranium 233 and 235 [ORNL-CDC-2] 05 p0621 N68-14259

Burn efficiency of uranium 232, uranium 233, plu-nium 238, and curium 224 - Yankee Core Evaluation WCAP-60831 03 p0697 N68-34940

um 233/uluminum fuel plates for Fabricating urani subcritical assembly (AAEC/TM-404) 12 p1905 N68-22455

Neutron scattering cross sections of uranium 233, uranium 235, and plutonium 241 from 1 to 30 eV [UCRL-70826] 14 p2313 N68-25226

Single level Breit-Wigner formula least squares fit for uranium 233 neutron cross sections [WANL-TME-1721] 16 p2728 N68-28032 16 p2728 N68-28032 ption cross sections for U Neutron fluion and at

233 (ORNL-TM-2140) 18 p3132 N68-30239 URANIUM 334

Identification and yield of gallium isotope in thermal neutron fission of uranium 235 {USNRDL-TR-68-35} 15 p2524 N68-26765

Isotopic-uranometric technique based on ratio of uranium 234 to uranium 238 for determining radioac-tive anomalies in arid regions [AWRE-TRANS-55] 16 p2657 N68-29082

Research progress on gamma rays, photonism 238, crystal growth, needymium promethism separation, oranism 234 recovery. X ray diffraction, flat neutron spectroscopy, and polystomic molecules (MLM-1434) M68-29171 77 p2343 M68-29171

Experimental cross section measurements for unni-um 234 and 236 with resonance parameters [GA-8135] 23 p4126 N68-36994

Delayed neutrons in fission of thorium 232, uran 235 and uranium 238 [LA-TR-67-16] 01 p0113 N68-10 01 p0113 N68-10786 Energy spectra of long range particles from them neutron fusion of uranium 233
[INR-822/IA/PL] 02 p0245 N68-114

02 p0245 N68-11441 Portable gamma spectrometer for safeguarding in-entories of uranium 235 contained nuclear fuel elements [BNWL-508] 03 p0342 N68-12053

Liquid scintillator method for measuring prompt neutrons produced in thermal seutron induced finion of uranium and plutonium isotopes [AAEC/E-172] 03 p0389 N68-12332

Ratios of neutron reproduction constants of plutonium 239 and 241 relative to uranium 235 [IN-1060] 03 p0374 N68-12446

[IN-1040] Co. Dispersion of the control of the cont

uranium 235 [BNL-50045/T-455/] 05 p0707 N68-14186 Methods for determining nuclear fuel burnup, emphasizing measurement of fusion yields of stable cessum and zirconium isotopes for U-233 and U-235 by (IN-1113)

05 p0620 N68-14198 Neutron multiplication factors of uniform aqueous solutions of uranium 233 and 235.
[ORNL-CDC-2] 05 p0621 N68-14259

Average number und function of fragmen utron induced fraisen money of gamma rays one [JUL-331-NP] 06 p0886 N68-15887

im Brook reactor a cal model for fact of loading, and appre r support calculations - ma utilization, power distribution proximate predictions of an NASA-TM-X-14961

thermal and resonance long range alpha particles alon of uranium 235 07 p1054 N45-17120 by neutron irradiation of Relative cross section neutrons in energy spectra emitted in thermal seutron [INR-817/IA/PL] Plutonium 238 formation by anium 235 and neptunium 237

08 p1213 N68-17539 water-aranium dioxide uranium 235 06 p1144 N62-18143 Subcritical experiments system enriched with 5 pero [EURAEC-1882]

Uranium base fuel assembly development [ORNL-4108] 09 p1379 N68-19264 Direct and absolute measurem f neutrons in thermal fusion of us sneous fusion of californium 252 cents of average yiek ranium 235 and spon

9 p1396 N68-19277

Mass yield values and kinet ined in thermal fusion exper ic energy distribution ob-riments with ursaism 233 09 p1398 N68-19319

Dynamic programic ion urania 233 product K-1712) or of passent diffe 12 p1905 N68-22472 Reflected and unrefle ritical experiments on metal with Plenight.

polyethylene, or Telli ORNL-TM-2082] 12 p1939 N68-22863 activity measurements and cylinders 12 p1939 Nee-221 Prompt neutron decay as in subcritical earliched uran (ORNL-TM-1736)

um 235 Resi ect ducay gamma on 13 p2113 N68-23144

Rapid chemical separaturbing ofter [18 pro-turbing ofter [18 pro-[USARDL-TR-66-21] d reduction method for number 235 flation 13 p2122 NAS-24219

Activation Doppler measurement on unation 2 pture and unusuan 235 finion in segment spectra. 14 p2200 NAS-24582 [AE-314]

Uranium 235 fission cross sections from 0.8 to 170.0 eV obtained by time-of-flight method [IAE-1302] 14 p2345 N68-25225 Isotopic-uranometric technique based on ratio of uranium 234 to uranium 238 for determining radioactive anomaline in arid regions
[AWRE-TRANS-55] 16 p2657 N68-28088 Trihydroxyindole procedure for fluorometric analy-uis of epinephrine and norepinephrene in urine [AMRL-TR-67-96] 16 p2595 N68-26960 16 p2657 N68-28088 Neutron scattering cross sections of uranium 233, uranium 235, and plutonium 241 from 1 to 30 eV [UCRL-70826] 14 p2315 N68-25226 Cycloserine and oxytetracycline distributions in renal lymph, urine, and plasma of mongrel dogs. [NASA-CR-89910] 16 p2396 N68-27398 Reactivity change from change in absorption cross sections of U 238 bound in uranium oxide lattice dur-ing melting studied for fast nuclear reactors [BNWL-717] 17 p.2917 N68-29318 Tables summarizing blood chemistries, hemodynam-ic responses, fluid and mineral balances, urine com-ponents, and other data obtained on males subjected to Diffusion of low concentrations of uranium 235 fis-sion fragments in beta titanium and gamma iron insula-Reactor physics parameter measurements in light after lattices of uranium fuel rod CNAEM-47] 18 p3117 N68-30575 ned rest and tilt tolerance tests [NASA-CR-92178, PT. 2] ICEA-R-32531 14 p2316 N68-25308 [CEA-R-323] Critically data handbook for hydrogen moderated urunium 235 and plutonium reactor cores [AHSB/S/-HANDBOOK-5, PT. 2] 15 p2500 N68-25977 [CNAEM-47] 16 p2598 N68-27784 Critical dimensions of homogeneous spheres containing uranium 235, uranium 238, and carbon [LA-3883-MS] 19 p3380 N68-31716 Enzymic decomposition of urea in urine, and urea hydrolysis in absence of buffer solution lution 17 p2818 N68-28508 Identification and yield of palladium 117 in thermal neutron fusion of urunium 235
[USNRDL-TR-68-25] 15 p2520 N68-26446 Portable automatically controlled U-235/U-238 isotopic mass spectrometer for process control [GAT-571] 22 p3879 N68-35760 stosterone production and horsen in high altitude environments 19 p3208 N68-31059 Critical mass of uranium 235 for stainless steel lined cavities in nuclear research and test reactors with heavy water reflector [NASA-CR-72409] 17 p2914 N68-28566 n interaction with uranium 238 Electrochemical system design to recover water from [CEA-R-3503] 23 p4131 N68-37154 human urine [NASA-CR-66652] 19 p3233 N68-31991 Muonic X rays measured in synchrocyclotron for thorium 232 and uranium 238 charge distributions 23 p BROON68-37338 USA (UNITED STATES)
U UNITED STATES OF AMERICA Fitting procedure for calculating absorption and fis-ion resonance of uranium 235 Excitation energy effects of uranium 238 fission on fragment mass and kinetic energies [LA-TR-68-21] 24 p4316 N68-37915 USNS KINGSPORT
U SATELLITE COMMUNICATIONS SHIPS (EUR-3936.E) 18 p3115 N68-30274 Angelar anisotropy of fiscion fragments in binary and ternary fiscion of uranium 235 induced by 3 MeV neutrons and by thermal neutrons [BARC-318] IB p3117 N68-30475 UTILITY AIRCRAFT

NT BO-105 HELICOPTER

NT S-2 AIRCRAFT

NT U-2 AIRCRAFT

NT UH-1 HELICOPTER

NT UH-2 HELICOPTER URANUS [FLANET] Tabulations of trajectory data for one way trips from Earth to Saturn, Pluto, Uranus, and Neptune via Ju-Nuclear finsion of uranium 235 by thermal neutrons and fast neutrons to determine kinetic energy of fast finsion fragments [ANL-TRANS-606] 19 p3332 N68-31577 NASA-CR-61186) 05 p0737 N68-14508 Regression analysis technique for deriving aerodynamic load spectra and strain prediction equations for low wing agricultural aircraft [ARL/F-41] 16 p2591 N68-28270 Minimum energy trajectory data for Jupiter, Saturn, Uranus, Neptune, and Pluto [NASA-CR-93783] 10 p1591 N68-19907 19 p3332 N68-31577 Measurement of low energy part of alpha particle apoctrum emitted in thermal neutron fission of U 235 [REPT.-913/IA/II/PL] UREAS Mean life estimates for wing strut of De Havilland aircraft determined from ground-air- ground cycle loads during agricultural operations [ARL/SM-NOTE-316] 17 p2808 N68-29055 19 p3333 N68-31663 NT THIOUREAS Explosive compound prepared from monomethyl wea by treatment with nitric acid and acetic anhydride [TIL/T-5722] 01 p0018 N68-10212 Critical dimensions of homogeneous spheres containing uranium 235, uranium 238, and carbon [LA-3883-MS] 19 p3380 N68-31716 Design and performance of liquid dispersal system for agricultural aircraft [FAA-DS-68-3] 21 p3624 N68-33881 19 p3380 N68-31716 Single particle states identification in finaion transi-nn nucleus uranium-235 est effects on growth of Hydrogenomonas Environment effects or eutrophs in dense culture 21 p3624 N68-33881 15 p2394 N68-26216 20 p3544 N68-32789 Aerodynamic load measurements during flight of agricultural aircraft in normal phosphorus spreading Interferometer with electrodeless discharge lamps for routine isotopic analysis of uranium 235 [CEA-R-3457] 22 p3827 N68-35552 Conversion of human wastes, c and urea into food for space ratio [NASA-TM-X-59839] s, carbon dioxide water, (AR/SM-320) 16 p2597 N68-27463 23 p3990 N68-36513 Linear interpolation method of correcting man spec-trometer inotopic analysis of uranism hexafluoride highly enriched in uranism 235 (CEA-R-3337) 22 p3827 N68-35553 Design of engine powered liquid apray pump for pricultural aircraft dispersal system 24 p4260 N68-37569 Enzymic decomposition of urea in urine, and urea hydrolysis in absence of buffer solution olution 17 p2818 N68-28508 agricultura [DS-68-3] 22 p3827 N68-35553 NT WASTE UTILIZATION exible urethane lacquer sealant for corrosion pro-**Purtable** automatically controlled U-235/U-238 Flexible ureth isotopic mass spectrometer for process control [GAT-571] 22 p3879 N68-35760 NASA program of multidisciplinary research on use estraterrestrial resources of estraterrestrial res [NASA-CR-91290] [AD-665683] 11 p1717 N68-20734 04 p0572 N68-12902 Radiative capture and fission cross sections for ranium 235 and plutonium 239 in resonance-neutron Dimensional characteristics of molded rigid urethane Handbook on semiconductor devices, and applica-[9C-RR-67-810] 14 p2275 N68-24361 (BNL-TR-219) 24 p4364 N68-37435 [FTD-HT-66-686] 04 p0486 N68-13242 Gas cured urethane resin systems for rigidizing packageable, expandable structures after deployment in space Reduced capacity of zinc electrode in alkaline batte-Mean number of fast neutrons in uranium 235 and thorium 235 fasion events recorded by boron floride 20 p3401 N68-32549 16 p2682 N68-27922 Applications review for rare earth compounds 20 p3423 N68-32825 [LA-TR-68-20] 24 p4306 N68-37493 Low energy alpha particle spectrum measurements om thermal neutron fission of uranium 235 IMP. P. 0113 Validity of human 17-hydroxycorticosteroid/ Cartographic viewer utilization analysis by simula-24 p4313 N68-37779 [INR-F-911] 05 p0610 N68-14500 24 p4251 N68-37940 [AD-674759] fission yields and long lived fission products for m 235 from EBR-1 - tables 07] 24 p4298 N68-38468 Effects of east-west and return trips on circadian sythms of diuresis and urinary elimination of sodium uraniom 2 (IN-1207) [NASA-TT-F-11621] **URANIUM 238** 09 p1285 N68-19487 Epithermal-to-thermal uranium 238 neutron capture tate in Agesta power reactor fuel [AE-299] 02 p0238 N68-11497 ion exchange and surface adsorption analysis of alpha emitting plutonium in urine
[AERE-R-5637] 13 p2016 N68-23696 V BAND U EXTREMELY HIGH FREQUENCIES Uranium 238 capture, half lifes of iron and aluminum inotopes, and seutron decay measurement techniques in fast aero power reactor (RFK-474] 03 p0377 N68-12605 Effect of changing gravity and weightlesaness on vasopressin control systems [NASA-CR-90750] 03 p0306 N68-12568 Drag forces of two dimensional V-shaped notches in assonic and supersonic turbulent flow 18 p2996 N68-29991 Angular distribution of fission fragments of thorium 232, uranium 238, plutonium 240, and plutonium 242 [FEI-73] LIBENE Aerodynamic drag measurements and boundary layer flow over V notches at transonic and supersonic Abnormal molecules in urine after irradiation, Radioactive age determination of earth interior by microscopic examination of damage trails of uranium 238 fusion (REPT-67-C-227) 13 p2062 N68-23949 review with bibli [SZS-12/1966/] ography 03 p0307 N68-12786 [NASA-CR-1132] 22 p3859 N68-35252 Development of urinary collection system for orbit-V/STOL AIRCRAFT
NT BO-105 HELICOPTER
NT CH- 47 HELICOPTER
NT CH- 53 HELICOPTER
NT DO- 31 AIRCRAFT
NT FLYING PLATFORMS [NASA-CR-92105] 13 p2006 N68-23714 Activation Doppler measurements on uranium 238 apture and uranium 235 fission in neutron spectra of Muthematical models for determining fraction of material excreted daily in animal urine in tracer experifast reactor (AE-314) 14 p2289 N68-24582 FLYING PLATFORMS
HELICOPTERS
MILITARY HELICOPTERS
P-1127 AIRCRAFT
RIGID ROTOR HELICOPTERS
ROTARY WING AIRCRAFT
SC-1 AIRCRAFT
TANDEM ROTOR HELICOPTERS [SAM-TR-68-29] 13 p2007 N68-24128 Poleutium and astatine isotope yields in fission frag-ments when boushurding uranium 234 with neon 20 and argan 40 ions [JINR-P7-3710] 15 p2519 N68-26390 Urinary pyrimidines in rats after whole body X ray ir-

[USNRDL-TR-68-15]

(NASA-CR-66612)

et fragments in biamuth 209

16 p2726 N68-27955

13 p2002 N68-24218

15 p2397 N68-26600

Chemical and physical properties of human urine

A-1358

and uranium 238 reactions (JINR-97-3732)

NT NT NT incl [NA

SUB

VI Co (NAS Intervance [AD-

in win

Aer gitudi aircra [NAS Cor and is INAS Fea sociate (D8-0

Vari ment f in lon qualiti (NAS/ tilt-win

Desi tegratic V/STO Spec V/STO [RAE-7

Surve AGAR Aero NASA Wind

interfere Fluidi stalling of [HDL-T Dyna

INAVT Lift, d aircraft :

tunnel to VISTO NASA- ury sic

6

ı

4

.

11

m

55

21

13

02

a-

42

49

25

91

52

NT UH- 1 HELICOPTER
NT UH- 2 HELICOPTER
NT VERTICAL TAKEOFF AIRCRAFT
NT XC-142 AIRCRAFT
NT XH-51 HELICOPTER Integration effects of engine engine control, nacelle interfere of conventional aircraft, and in VTOL aircraft [AGARD-CP-27] Jet influence on V/STOL aircraft in transiti gh speed flight regime V/STOL short haul transpo including noise characteristics [NASA-CR-670/01/] 02 p0159 N68-11174 Ground proximity effects on longitudinal, lateral, ad control aerodynamic characteristics of tilt wing our propeller V/STOL wind tunnel model NASA-TN-D-4237] 02 p0159 N68-11519 four propeller V/STU [NASA-TN-D-4237] Noise, traffic control, instrument flight, and other problems related to V/STOL aircraft [NASA-TM-X-60770] 04 p0439 N68-12964 Interaction between airframe-powerplant integrand hot gas ingestion for jet lift V/STOL transport Preliminary design concept of jet lift research air-craft reaction control system 04 p0564 N68-13099 Measurements of mixed boundary layer flow effects on aerodynamic characteristics of V/STOL wind tunnel model V/STOL aircraft classification figurations, and flight research p [NASA FACTS, V. 2, NO. 3] 04 p0433 N68-13151 Wind tunnel stability tests for jet influence on V/STOL aircraft at high speeds 04 p0442 N68-13245 V/STOL wind tunnel testing - design of wind tunnel [REPT.-68-1] 04 p0442 N68-13247 Nozzle efficiency and lift fan exhaust for V/STOL transport aircraft dary interference on V/STOL m [NASA-TR-R-286] 04 p0443 N68-13308 Conceptual design of Northrop V/STOL jet opera-tions research supersonic aircraft [NASA-CR-66416] 05 p0604 N68-14046 500 mile range [NASA-CR-1118] tegrated cockpit cor red V/STOL aircraft strol and display system for advanced V/STO (AD-662186) 05 p0606 N68-14735 Static and dynamic long in wing V/STOL aircraft m [NASA-TN-D-4322] al stability tests of fan 06 p0767 N68-15894 Aerodynamic factors, and effects on dynamic lon-tudinal stability characteristics of tilt wing V/STOL Pulse, special, and slip [NASA-TN-D-4344] flight control problems (FTD-MT-24-224-67) 06 p0767 N68-15941 Performance characterist ground effect of V/STOL tru [NASA-CR-1180] Conjugate gradient methods application to termina and in-flight constraints for V/STOL flight path op [NASA-CR-91880] 07 p0935 N68-16476 Feasibility of cruine fan propulsion systems and as-ociated power transfer systems for compound and emposite aircraft [NASA-CR-86102] (D8-0440) 08 pl114 N68-17763 Wind tunnel investigation of propeller tilt-wing V/STOL mod [REPT.-892] Variable-stability helicopter flight tests under instru-ment flight rules to determine effects of gross changes in longitudinal static stability for V/STOL handling Computation of rotor flo haracteristic for helicopter on in ground proximity 09 p1271 N68-19184 [NASA-TN-D-4364] tion in groun Aerodynamic characteristics of large-scale model of tilt-wing V/STOL aircraft [NASA-TN-D-4493] 10 p1457 N68-20370 VACANCIES (CRYSTAL DEFECTS)
NT FRENKEL DEFECTS Aerodynamic design considerations for propulsion stem integration and air intake efficiency of super-nic and V/STOL aircraft 11 p1778 N68-21670 Design theory and experiments for aerodynamic in-tegration and propulsive efficiency of VTOL and V/STOL aircraft [CU-3553-6] 11 p1778 N68-21671 cancy rem ial design con es and cost estimates for field ion microscope ... [CU-3551-8] Special design consideration V/STCL military transport at [RAE-TR-66302] 11 p1626 N68-21793 Defects in pure plating Survey papers on rotor aerodynamics, propulsive efficiency, and flight mechanics of V/STOL aircraft con-(CU-3551-7) figurations [AGARD-ADVISORY-13] Control coloring techniques eation and annualing of vaca 13 p1991 N68-23761 Aerodynamic characteris powered V/STOL aircraft [NASA-TM-X-59739] es and test data of fan Impurities and crystal vacancies effects on muclear magnetic resonance line shapes in scandium and sundium intermetallic compounds [8-7-122] 15 p2403 N68-23908 14 p2185 N68-25278 Wind tunnel model tests of hot gas ingestion and jet interference on jet V/STOL aircri [NASA-TM-X-60449] 15 p2386 N68-26194 Fluidic sensing system stalling on aircraft wings [HDL-TR-1368] for detecting aerodynamic 15 p2467 N68-26386 in proton bombarded sil [NASA-TM-X-60273] Dynamic response criteria for V/STOL aircraft flight [NAVTRADEVCEN-1753-2] 15 p2387 N68-26416 vacancies, and defe-Lift, drag, and pitching moments of large V/STOL irreraft models powered by lift fans determined in wind defect reactions in quartz [CU-3712-03] [NASA-TM-X-60455] 16 p2588 N68-27435 V/STOL research on a ability, display devices, Mossbauer effect in silv ninal guidance 16 p2588 N68-27445 pilot performance, and [NASA-TM-X-60456] [JINR-P14-3776]

raphite 16 p2629 N68-27987 e thrust, propulsive jet, rence and intake design closed order in gold-ned by heat treatment 17 p2899 N6E-2851 17 p2805 N68-28850 (JUL-520-RW) dislocation in sodius 17 p2806 N68-28852 Reaction control system preliminary design derations for jet lift research aircraft 17 p2806 N68-28857 17 p2958 N68-28952 Wind tunnel investigation of hot-gas ingestion and jet interference effects on jet powered V/STOL sircraft 17 p2806 N68-28838 fraction for crystallographic data on cation loops formed in annealing of 17-p2901 N68-29231 High frequency paramagner development and applic nalyses of selected materials c resonance spections in microstru 17 p2807 N68-28859 AFOSR-68-1002] 18 p3072 N68-29816 ns, serodynamic con-[AD-669502] 18 p3150 N68-29826 flects on relaxation of 17 p2807 N68-28967 Approach control and landing guidance system stu-dies for V/STOL aircraft (AGARD-560) 18 p3002 N68-30129 19 p3351 N68-31144 Belavior of point defects in fl orite crystais 19 p3353 N68-31339 Flow breakdown elimination studies for transition peed wind tunnel tests on V/STOL aircraft REPT.-68-1] 9 p3198 N68-31127 y defects in quenche 30 and 600 day C 22 p3948 N68-3496 retical wind tunnel boun-Experimental study of diffusion of vacancies and vacancy pairs in single crystals of sodium chloride [COO-1 [97-30] 23 p4148 N68-36206 19 p3258 N68-31592 Subjective response to far field noise characteristics f V/STOL aircraft sized to carry 60 passengers over [COO-1197-21] or for silver chloride 23 p4153 N68-36784 20 p3411 N68-33009 tion and vacancies on intance of ferrites 23 p4158 N68-37319 Effects of chemical compicrohardness and electrical Four degrees of freedom airborne simulator to study handling qualities of V/STOL aircraft [NRC-10182] 21 p3623 N68-33833 VACUUM Feasibility of revised V/STOL design and flight plan concepts for short haul transport aircraft [NASA-CR-743/1/] 22 p3804 N68-35177 NT HIGH VACUUM NT LOW VACUUM NT ULTRAHIGH VACUUM operations of dynamic Lubrication of sliding and rolli [NASA-TM-X-52382] 22 p3806 N68-35557 07 p1003 N68-16665 Jet outflow of metallic plant icability of metallic planta-ies of planta flow to solid with ies of planta flows ics from static tests in 22 p3954 N68-35594 Flight control system design data and helicopter mulation data for V/STOL aircraft advanced avionic 07 p1062 N68-16851 Electrical explosion of copper wire in air and 22 p3806 N68-35744 n of ground effect on four-07 p1062 N68-16852 Cracking of polyethyles date by ultraviolet 23 p3989 N68-36289 radiation in vacuum an [FTD-MT-24-184-67] 15 n2488 N68-26346 w field and dust cloud downwash during opera-Production and injection in vacuum environment by [LGI-68-8] of small deuterium specks 18 p3082 N68-29624 24 p4198 N68-38332 Influence of chemisurb adhesion and friction of tu (NASA-TN-D-4694) ins of various pases on a in vacuum 20 p3490 N68-33227 tadiation induced changes in physical properties of m from notale with 01 p0082 N68-10804 Electronic properties of refractory monoxides having trinsic lattice vacancy variations 21 p3682 N68-34302 Cyclic frequency, tensile for bstructure generated in vac tique effects, and de 03 p0405 N68-12164 ten studied with NASA-CR-11651 22 p3890 N68-35200 07 p1006 N68-16128 Increasing therma [NASA-CR-98014] nductance in vacuum 23 p4188 N68-3686 im produced by fait neutron ACUUM APPARATUS
NT BAYARD-ALPERT IONIZATION GAGES
NT CONDENSATION PUMPS
NT KON PUMPS
NT KONIZATION GAGES
NT KNUDSEN GAGES
NT KNUDSEN GAGES 07 p1007 N68-16315 s for analysis of radiation ancies in ionic crystals 08 p1226 N68-17992 Molybdenum base alloys and tantalum base alloys creep tested in vacuum environment at elevated tem-04 p0522 N68-13631 Lithium diffusion mobility in fast neutron irradiated licon NASA-CR-723191 High vacuum toroids nent of electron clouds NYO-3863-1) ng term cu 15 p2534 N68-25910 95 p0641-7468-14104 es and aluminum atoms boron impurity 15 p2540 N68-26563 Conditioning pro haracteristics of m AWRE-O-77/67] t on breakdown voltage in ultra-high vacuum 06 p0001 M68-15673 n, electron loss in 15 p2542 N68-26634 aprous oxide crystals and ECOM-00394-11 09 pl314 N60-18545 15 p2544 N68-26800 er chloride doped with iron 10 p1492 N66-2024s 16 p2726 N68-27957

SUBJE

VACUU

VACUU

LA-E

Con glass v UCR

Des sation [UCR

[NAS

Vac

[KAP

State breaks [ECO

Mic

ICLM

[NAS

IPAP

for dir

Equ

NAS

RAE

VACUU

VACUU

IECO

Envi

denign (ECO)

Desi

Vacuum effects on fatigue and crack behavior of metal alloys [MCR-67-423] 11 p1711 N68-20805 Thermal mathematical model of support used in thermal vacuum testing of spacecraft similar to ESRO Far infrared vacuum grating monochromator design 11 p1695 N68-20577 [ESRO-TN-16/ESTEC/] 23 p4189 N68-37032 Adverse effects of liquid propellant leakage past con-trol valves in vacuum environment [NASA-CR-1047] 12 p1959 N68-21893 Gluss fiber, cylindrical vacuum tank for electromagreactions at 180 deg to beam di [ANU-P-399] er to observe nuclear netic thrustor resear [NASA-CR-62047] 12 p1960 N68-21901 rection 24 p4257 N68-38020 Summary data on deposition and endurance lives of in metallic films used for lubricating sliding and ling element electrical contacts in vacuum environ-Gold wire seals for ultra [PB-177429] 13 p2074 N68-23583 VACUUM DEPOSITION High vacuum deposition techniques for fabricating rity of graphite at room thin film capacitors [NASA-CR-65805] [NASA-TN-D-4476] 12 p1881 N68-21979 EUR-3909.E 01 p0125 N68-10671 14 p2369 N68-24359 Ultrahigh vacuum as INASA-CR-944251 havior of silicates 12 p1896 N68-22843 Sputtered molybd High intensity, n traviolet light source [NASA-CR-73222] fide film deposition and d, pulsed vacuum ul-Priction characteristics in vacu [NASA-TN-D-4269] Vacuum effects on: [EMRL-RM-1039] mage in metal fatigue 13 p2080 N68-23168 02 p0222 N68-11644 14 p2297 N68-24441 Vapor and vacu on for high strength fileexposure effects on poten-umanned Mars missions 13 p2088 N68-23404 of in high vacuum processing 15 p2473 N68-26462 (GEPP-21) Sterilization and vactial heat shield materia [NASA-CR-66557] mentary materials [NASA-CR-91279] 04 p0514 N68-12809 High temperature tural analysis of met [INR-869/XIV/PS] x x ray camera for struc-Vacuum deposition i propagation applied to be with stress corrosion crac nition method of measuring crack ed to brittle-type fractures associated on cracking in titanium alloys Creep tests of molybdenum base TZC, TZM alloys intalium base T-111 and Astar 811C in vacuum en-15 p2468 N68-26521 titanium alkoys 04 p0589 N68-13379 Real time environmental testing of Applications echnology Satellite, and characteristics of acoustic and vacuum systems ID6-600721 [NASA-CR-72391] 13 p2082 N68-23642 on techniques for, and thin film transistors Vacuum deposition fabricati properties of, evaporated silicon Contact failure of steel in vac [FTD-MT-67-57] 16 p2788 N68-28000 15 p2485 N68-26622 12 p1848 N68-22145 Design and testing of a for high precision relative [ACIC-TC-1359] itized vacuum pendulum Optical properties and stability of vacuum deposited silver and dielectric film coatings [NASA-CR-73228] 14 p2374 N68-25326 Line source vacuum the for elastomeric heat shield i [NASA-CR-66629] al conductivity measures 18 p3072 N68-29747 16 p2792 N68-27226 Thermal vacuum testing of satellites without use of true solar simulation Servocontrolled gas inble ed system for regulation of Thin film vacuum depo sition in microminiaturized flow into vacuum cali [AEDC-TR-68-100] Is p3080 N68-29752 electronic circuits [JPRS-45406] 17 p2869 N68-29005 14 p2230 N68-25408 Electrical properties of materion - vacuum monochromator formance testing [AFOSR-68-0465] Pressurized synthesis of u uranium oxides and fluorite [NIJS-R-525] um hexafluoride from rials in far infrared re-Scintillation characteristics of thin vacuum deposite layers of sodium iodide and cesium iodide with thalliur r development and per-18 p3026 N68-30276 18 p3072 N68-29814 in vacuum and inert gas product 18 p3082 N68-30536 14 p2335 N68-25492 Rolling metals and bi achloride by hydrogen, m, and rolling metals in atmosphere to ensure purity of pa [FTD-MT-24-197-67] Crystal structure and growth, and nucleation ob-served by electron diffraction and microscope in for-mation of thin metal films during vacuum deposition on ge during breakdown in Electrode surface de [JPRS-45912] 18 p3091 N68-30307 [M-7180] 20 p3554 N68-32474 Vacuum twin rolling mill to study processes and senomena during metal, alloy, and bimetal rolling in secum and inert media [NASA-CR-86083] 18 p3155 N68-30592 Thermal decomposition of uranium oxides in acuum, and extent of region of homogeneity in rhomd aluminum alloying cannable cold cathodes 19 p3254 N68-31964 Vacuum deposition and techniques for fabrication of scar [ECOM-2948] 18 p3092 N68-30310 (RTS-4586) 20 p3421 N68-32665 refractory metal elecanibility of differential ion pumping concept for cing pressure during vacuum deposition of thin Effects of va tive gas atmospheres (FTD-HT-67-374) 19 p3353 N68-31311 on mechanical propertie [NASA-TM-X-61203] 21 p3698 N68-34577 ment requ materials testing in [NASA-CR-95949] 19 p3287 N68-32187 Dynamic model for low pressure ductility effect and fracture mechanics of molybdenum during space en-vironment simulation [TR-0158/3230-20/-7] (NASA-TM-X-61202) Development and optimization of high vacuum sput-ering system for fabrication of thick integral coverslips or silicon solar cells 21 p3705 N68-34495 ation of vaca for sampling dust and for silicon solar cem [NASA-CR-97154] microbiological surf [NASA-CR-97152] 23 p3992 N68-36097 23 p4075 N68-36529 nation 23 p3999 N68-36749 Thick film vacuum depos tion of silicon dioxide by m, and temperature efaputtering for solar cell coverslips [NASA-CR-97123] 23 p3992 N68-36241 VACUUM CHAMBERS fects on polymethyl methacrylate t (MINTECH-T-5766) 24 e transparency 24 p4273 N68-38352 Pumping, vaccoun, cryogenia apporting systems for space sin [NASA-CR-91733] sic, solar simulation, and imulator facility 05 p0641 N68-14105 Structural changes and surface kinetics of vacuum posited discontinuous gold films VACUUM FURNACES History, principles, operation, and advanages of acuum fusion process for analysis of gases in metals FTD-HT-67-286] 22 p.3890 N68-35281 23 p4149 N68-36280 sted solar flux incident Electrical resistivity and photoelectric behavior of comm-deposited nickel films measured after anneal-[FTD-HT-67-286] ESTO-TM-11] 07 p0982 N68-16555 VACUUM GAGES

NT BAYARD-ALPERT IONIZATION GAGES te of two vacuum chambers tors for solar-cell research 07 p0982 N68-16695 Design and perform and solar-radiation sin [NASA-TM-X-1503] NT BAYARD-ALPERT IO NT IONIZATION GAGES NT KNUDSEN GAGES 24 p4333 N68-38119 VACUUM EFFECTS Strong focusing ring cyclotron for multicharged ion Electrodynamic valve for admitting gas into vacuum erature survey on ionization vacuum gages design erformance characteristics (JINR-P9-3443) and performano (NBS-TN-298) 05 p0645 N68-14708 04 p0507 N68-13050 [FTD-MT-24-87-67] 11 p1708 N68-21613 est and vibration effects station blankets 06 p0850 N68-15368 Long term vacuum storag analysis of multilayer super is [NASA-CR-92589] VACUUM MELTING d infrared source detection Technique for short-lived (ESRO-TM-110/ESTEC/) 13 p2172 N68-24130 Hydrogen plasma hot cut tron energy and density study [NASA-TN-D-4604] Surface minerals, vac-surface mining on moon ffects, and methods for le generator and elec-08 p1237 N68-17364 15 p2528 N68-25877 [ANL-7398] Leakage through propella passages and combustion che [NASA-CR-62046] 16 p2675 N68-27205 nt valves into injector flow nal chambers - instru-ral discharge anomalier Thermodynamics of ory metals, and vacuers in vacuum 08 p1230 N68-17431 15 p2447 N68-26908 Vacuum effects on oven dried halsa wood load carry-(CEA-R-3390) 23 p4078 N68-36938 Summary information or use in aerospace er ricants and lubrication ents, and simulation of [AFIT-TR-67-4] 08 p1191 N68-17910 VACUUM PUMPS

NT CONDENSATION PUMPS

NT ION PUMPS Temperature effects on ca in nitrogen stream, and under [NASA-TT-F-11435] um carbonate pyrolysis NASA-TM-X-595701 16 p2668 N68-27414 08 p1144 N68-18071 Beam line liquid helium cryopump for neutral injec-tion, controlled thermonuclear research machine [UCRL-70590] 05 p0668 N68-14744 m concrete surfaces in ssing of water v

09 p1323 N68-19207

nd vacuum tests, and

09 p1277 N68-19334

measures dealing with s in vacuum of space 10 p1532 N68-19608

of replies diffraction

10 p1559 N68-20053

Pumping performance

Large scale air ejector as vac [NASA-TT-F-11378]

[RAE-TR-67150]

(IAE-1300)

Kinetics of air sorp

Applications of un

of zeofite adsorption

09 p1346 N68-18365

15 p2448 N68-25777

rogen cooled ultrahigh

20 p3538 N68-32999

23 p4068 N68-36644

[NASA-TM-X-1536]

Detail design, acc support fixtures for d (NASA-CR-93670)

Indication and bearing property (NASA-TM-X-52208)

Thermal-vacuum

NASA-CR-937821

16 p2784 N68-27928

19 p3212 N68-32138

21 p3758 N48-33995

in transporting 35mm

23 p4109 N68-36774

high vacuum chumber dosign and experim more biological effects on bacteria

A-1360

(NASA-THE-X-52427)

MASA-CR-97186)

444

EX

r of

805

979

843

168

en-

oys

542

522

res

226

of

005

om

76

36

in

74

in m-

65

res

77

29

ef-

52

of

81

50

ed

19

15

18

14

3

17

VACUUM SPECTROSCOPY

Vacuum X ray spectroscopy and K absorption edge of aluminum 09 pl344 N68-19281

VACUUM SYSTEMS

Improved fusion welded tee connections for vacua [LA-DC-8978] 04 p0517 N68-13875

Computer controlled hermetically scaled vacuum glass valve [UCRL-50317] 08 p1143 N68-18041 08 pl 143 N68-18041 Design of variable tem sation trap for vacuum ch [UCRL-50318] ure, automated conden-

08 p1143 N68-18042 cuum system for single X ray spectromet crystal defects studie [NASA-CR-93768] 10 p1577 N68-19955

Vacuum systems for or ree stage spectrometer three stage spe [KAPL-3382] 12 p1875 N68-22625 Statistically design breakdown in vacuus [ECOM-2939] rd experiments of high voltage

15 p2440 N68-26296 Microwave fields for ioniz ng gas flowing from sozzle (CLM-R-80) 16 p2739 N68-28200

Mathematical model (control of ultrahigh vacu [NASA-CR-61866] st estimates and optimal 17 p2867 N68-23899

HF field interactions, low nd vacuum technology 17 p2951 N68-29169 Plasma-beam and plasmane discharge plas IPPCZ-721 r beam facility /com-

Supersonic nozzle mo ponent system developm [IPAPS-67/68-212] 18 p3054 N68-29858 Design and perfo

for direct current spi [NASA-CR-86092] trodes 20 p3457 N68-33129 ment requir for materials testing in INASA-TM-X-612021

21 p3705 N68-34495 ionization gage leak de-Sensitivity of heliu [RAE-TR-68099] 23 p4065 N68-37266

VACUUM TUBE OSCILLATORS
U BACKWARD WAVE TUBES
U CATHODE RAY TUBES
U COLLO CATHODE TUBES
U GONTRONS
U IGNITRONS
U IMAGE ORTHICONS
U IMAGE TUBES

IMAGE ORTHICONS
IMAGE TUBES
KLYSTRONS
MAGNETRONS
MICROWAVE TUBES
PHOTOMULTIPLIER TUBES
PHOTOTUBES

PLANOTRONS
THERMIONIC DIODES
THYRATRONS
TRAVELING WAVE TUBES
VIDICONS

U VIDICONS
VACUM TUBES
NT BACKWARD WAVE TUBES
NT CATHODE RAY TUBES
NT COLD CATHODE TUBES
NT GAS DISCHARGE TUBES
NT HONTRONS
NT HAGE ORTHICONS
NT IMAGE ORTHICONS
NT MAGNETRONS
NT MAGNETRONS
NT MAGNETRONS
NT MICROWAVE TUBES
NT PHOTOMULTIPLIER TUBES
NT PHOTOMULTIPLIER TUBES
NT PHOTOTUBES

NT

NT NT

PHOTOTUBES
PLANOTRONS
THERMIONIC DIODES
THYRATRONS
TRAVELING WAVE TUBES
VIDICONS

de surface to determine 02 p0188 N68-11220 Envelope, electrod are high current swit [NASA-CR-61519] d trigger design for high volt-07 p0975 N68-17073

Soak procedure and cou 85 leak rate test of evacual [AWRE-O-22/68] g equipment for krypton 15 p2468 N68-26590

Breakdown in high voltage vacuum devices and design of microwave and modulator tubes [ECOM-00394-12] 15 p2437 N68-26780 High vacuum tube for X ray irradiation at elevated (UCID-15254) 15 p2450 N68-26823 Review of improvements in na-summitters, broadcasting, and vacuum tubes 16 p2622 N68-27301

U FAR ULTRAVIOLET RADIATION

valent state [ANL-TRANS-574] 12 p1840 N68-22917

on the periodic system ture of carbide phases 20 p3415 N68-32316 arbide cli and electroni (RTS-42331

in antimony ytterbium tibility data 20 p3566 N68-32828

Potential coefficients in terr a of valence coordin

20 p3428 N68-32916

Separating valence of ferric ion from ferrous ion on ion exchange resins
[M-7385] 22 p3829 N68-35751

VALIDATION U PROVING

VALIDITY

theory and analysis for determining thematical models 22 p3897 N68-34878

VALKYRIE AIRCRAFT U B- 70 AIRCRAFT

VALLEYS

Neutron activation marine and lacustrie Swedish west coast [AE-296] dysis of trace elements in osits from Viskan Valley on 02 p0207 N68-11622

to boundary atmospheric layer on Po valley 24 p4287 N68-38406

U Q VALUES

VALUE ENGINEERING

Value engineeri avionics package [ECOM-01943-7] 13 p1990 N68-23167

parachute flare design eriah at less cost 22 p3953 N68-35471 utilizing improved binder m [RDTR-12]]

ALVES
NT AUTOMATIC CONTROL VALVES
NT BUTTERFLY VALVES
NT FUEL VALVES
NT GAS VALVES
NT PRESSURE REGULATORS
NT RELIEF VALVES

for aerospace use 01 p0069 N68-10402 skage of fluids through and seals 02 p0201 N68-11701 Correlations for predictioned valves, threaded fi [NBS-TN-355]

way breathing valve ac-experiments 03 p0308 N68-12502 ceptable for aerospa: (NASA-CR-65730) Very high pressure fast valve for feeding nozries used forming hollow cylindrical gas shells for Z-pinch stu-

[LGI-66/4] 07 p1003 N68-16485

Performance tests of operated, 6 inch, 150 p [NASA-CR-94589] valve 13 p2073 N68-23495 resulting from changes

Index for power contin geometry of vortex w [NASA-TM-X-59869] 16 m2593 N68-27471 Performance test data fo (NASA-CR-95251) al ball abutoff valve 16 p2671 N68-27900

VAN ALLEN RADIATION BELTS U RADIATION BELTS

VAN DE GRAAFF ACCELERATORS

Operation and utilization of 5.5 MeV Van de Gra (BARC-291) 03 p0390 N68-12408 Operating manu-tive ion accelerator (NOLTR-67-102) al for 2.5 MeV Van de Graaff posi-04 p0490 N68-13446 celerators of very high Focusing in ele ILYCEN-6767) 09 p1388 N68-18603 (UCRL-30213) 10 p1512 Ned-19665 ce of high energy K conver

[ANL-7384] 11 p1755 N68-21243

Compression accelerators for [CEA-R-3325] rata in Van de Gene 12 p1856 N68-22721

d 30 MeV Van de 15 n2464 N65-25657

ses sections of neutro le induced reaction windowless gas (ORO-1067-21 15 p2524 N68-26697

nity of Van de Graaff a al Laborat nitoring system for or at Oak Ridge No-(L-TM-2137) 17 p2915 P68-28941

tron final state in-ruity Van de Granff 19 p3324 N68-31048

plication of Van de , and inclusic scatter-lehromium 52 24 p4310 N68-37650

NT CALCIUM VANADATES

Hall effect, Seebeck coeffic ductivity of single crystal sodio 23 p4150 N68-36338

VANADIEM

[BMWF-FBK-67-59] 01 p0105 N68-10390 asurement of high ed after capture of t

01 p0108 N68-10481

[IS-T-194] 05 p0672 N68-13994

Protective coatings and surface treatments for pro-ection of Ti-SAI-1Mo-1V alloy sheet from het-salt INASA-TN-D-43191 08 p1185 N68-17377

e with carbon on Effects of bonna echanical prope BM-RI-7113] 10 p1540 N68-20233 on of superalloys in

(REPT.-4956-68R) 11 p1712 N68-20994

11 p1707 N68-21423 BARC-3031 of vanadium in

LA-38431 12 p1836 N68-22457 producing high purity vanadium ingots [CEND-3742-325] 12 p1891 N68-22782

UCRL-TRANS-102191 14 m2217 NAS-25138 n of van

15 p2414 N68-26290 LECS II

18 p3148 N68-29587 Magnetic analysis of pro-bombardment of variation [JEN-181-DF/I-55] ice by de 18 p3127 N66-29717

ren mucheur double n in Turrion salt crystals (COO-1112-161) 20 p.3573 NAB-33097

RCN-96 21 p3741 N68-34357

Complex fo 22 p3834 Nee-35807

23 p4153 NGS-36746 cate particular of refrac

SUB

VAPO

moi (US

T

function (N/

D

(NA

CC

D

.

exist (DS

tion [DS

IUT

VANADIUM ALLOYS

Thermodynamic properties and activity of aluminum died in Cr-Al and V-Al systems between 1170 and [400 deg K [AD-661352] 04 ±0520 N68-12980

Magnetic resonance of vanadium chromium system, and of antiferromagnetic transition temperatures in 04 p0523 N68-13751

Nuclear radiation effects on aluminum, titanium, vanadium, and tin alloys at cryogenic temperature [NASA-CR-72332] 06 p0854 N68-15572

Phase equilibria in ternary system vanadium niobiu carbon through melting ranges of cubic mosuscarbide [AFML-TR-65-2, PT. 2, V. 17]

09 p1351 N68-18394 erties of high strength vanadium alloys 61 10 p1539 N68-20131

Spectrophotometric determination of vanadium in utonium vanadium alloys 12 p1836 N68-22457

fium cladding alloys and stainless steel, reactivity and use as reac [WARD-3791-13] 15 p2484 N68-26554

Corrotion tests on vanadium alloys in development of cladding materials for fuel elements of sodium cooled fast breeder reactor [ANL-TRANS-600] 17 p2902 N68-29271

[ANE, FIRANS-2007]
Electronic energy band structure of vanadium-iron alloys determined by specific heat, enthalpy, thermoelectric power, and reassitivity [18 p3151 N68-29906]

Corrosion resistance of Nb and V alloys in oxygen ontaminated sodium to find suitability as fuel jackets in liquid cooled [ANL-6982] sled reactors

18 p3094 N68-30569 Phase diagrams from 1100 C to melting range for hafnium vanadium system and hafnium chromium

system [AFML-TR-65-2, PT. 1, V. 14] 20 p3497 N68-32639 Elastic properties of niobium vanadium chromium

[FTD-HT-67-130] 20 p3506 N68-33473

Chromium molybdenum and chromium vanadium alloy specific heat and hall effect measurements 23 p4153 N68-36743

Superconductivity of fused samples of binary systems Nb-Sn, Nb-Al, Nb-Ga, V-Si, and V-Ga [CONF-640310-1] 23 p4154 N68-36885

Fast neutron irradiation effects on nuclear fuel elements and cladding materials [UNC-5201] 23 p4104 N68-37222

VANADIUM CARBIDES

Structure determination and stabilizing conditions of thorhombic beta phases of niobium and vanadium carbides (LA-TR-67-73) 04 p0521 N68-13459

VANADIUM COMPOUNDS NT CALCIUM VANADATES NT VANADATES

NT VANADYL COMPOUNDS

Heterogeneous equilibrium and vaporization studies to develop thermodynamic data for vanadium borides [COO-1140-164] 05 p0621 N68-14236

Growth of gallium substituted polycrystalline biomath calcium variadium garnet [SJ-200-4526-2] 06 p0893 N68-15127

Phase diagrams of systems of hydrogen with titanium, riecowam, vanadium, and niobium [FTD-HT-23-925-67] 07 p1007 N68-16282

Electron microscopic analysis on annealed cold illed vanudium, and distribution of oxygen interstitials in vanadium structure (EUR-3642.E) 08 pl186 N68-17879

ation of vanadium trichloride 08 p1142 N68-17936

Gallium-substituted reproducibility determ tuted BuCaVIG in single crystals, and etermination tests on polycrystalline (SJ-220-4526-3) 11 p1767 N68-20689

Phase diagram of rubidium mon mulium pentruide melts side reaction with 13 p2018 N68-23835

Impurities and crystal vacancies effects on nuclear magnetic resonance line shapes in scandium and vanadium intermetallic compounds 15 p2405 N68-25908 [85-T-122]

rent conductivity determined for single is of vanadium pentoxide 19 p3355 N68-31825

VANADIUM OXIDES

Electronic properties of refractory monoxides having strinsic lattice vacancy variations 03 p0405 N68-12164

Temperature dependence of electrical conductivity in vanadium oxides at low temperatures

08 p1222 N68-17385

Phase diagram of rubidium monoxide reaction with anadium pentoxide melts 13 p2018 N68-23835

High purity vanadium by metallothermic reduction vanadium trichloride (BM-RI-7145) 15 p2405 N68-25854 Dentification of transition element unare operation photoemission models through experimentation 23 p4154 N68-36827

VANADYL COMPOUNDS

Electronic spectra of selected oxovanadium com-20 p3431 N68-33322

Exchange reactions of bis complexes of chromous, ferrous, and manganous ions, acid hydrolysis of vanadous and chromous ion complexes, and kinetics of formation of vanady t complexes. 21 p3649 N68-33900

Electron spin-spin relaxation time determinations for vanadyl acetylacetonate solutions under high pressure based on electron spin resonance linewidth measure-24 p4212 N68-37627

VANADYL RADICAL

Electronic spectra of selected oxovanadium com-20 p3431 N68-33322

VANELESS DIFFUSERS

Unvaned diffusers optimum width for single stage centrifugal superchargers
[FTD-HT-66-767] 02 p0158 N68-11653

Vaneless diffusers for centrifugal compressors 20 p.3459 N68-32452 [SP-913]

NT GUIDE VANES

Neutron time-of-flight spectrometry for chopper [AAEC/E-186] 12 p1905 N68-22453

Development of cor r, stator, and vane pivot seals for use in advanced air breath [NASA-CR-72405] thing engines 17 p2895 N68-29320

Boundary layer separation in axial compressor vane [FTD-HT-67-187] 24 p4195 N68-38212

VANGUARD 3 SATELLITE

Magnetic disturbances examined for correlation of surface and satellite magnetic field measurements [NASA-TM-X-63142] 09 p1338 N68-19435

VANS U TRUCKS

VAPOR DEPOSITION NT VACUUM DEPOSITION

Formation and characterization of A15-type struc-ture in chemical vapor deposited tangsten rhenium al-

loys [ORNL-TM-1888] 01 p0076 N68-10596 Metallic motybdenum deposition from gas phase for uranium oxide and zirconium oxide fuel sphere

(KFK-3551 01 p0024 N68-10754 Mechanical behavior of chemically vapor deposited

tungsten at elevated temperatures [ORNL-4162] 01 p0079 N68-10989 Epitaxial vapor desposition of beta silicon carbide on solution grown beta silicon carbide surfaces [AFCRL-67-0557] 03 p0356 N68-12148

Dispersion strengthening of tungsten by covapor deposition [UCRL-50209] 03 p0351 N68-12242

Vapor deposition of hafnium carbide emphasizing possible production of high strength single crystal whiskers for composite materials [TR-0158/3240-10/-3]

04 p0467 N68-13445 Effect of substrate structure on deposition of evaporated carbon [NASA-CR-91501] 04 p0527 N68-13820

High temperature operating vapor deposition reactor system [NASA-CR-86021] ng electronic devices for 05 p0625 N68-14557

Manufacture of micro tries, and conductive co turized resistors, dielec-ers by reactive evapora-(DMWF-FB-W-67-07) 06 p0814 N68-15216 Gallium telluride vapor deposited thin film electrical

FTD-HT-23-654-671 07 p1065 N68-16278 Thin film transport in polymer dielectrics, fabrica-tion of semiconductor devices having digital or discon-tinuous responses, and chemical vapor deposition of exotic dielectric films [NASA-CR-93543] 09 p1342 N68-18931

Chemical vapor deposition process for refractory metal plating in fabricating niobium-aluminum oxide-niobium sandwiches for thermionic applications [EUR-3743.E] (9 pl 296 N85-18962

Surface roughness effects on normal spectral emittance of vapor deposited rhenium [NASA-TM-X-1514] 09 p1354 N68-19347

Superconductivity of disordered tin and lead films formed by vapor deposition at low temperature [NOLTR-67-168] 10 p1578 N68-20062

Chemical vapor deposition of aluminum phosphides onto single crystals of silicon and gallium arsenide for producing high temperature operating solid state elec-tronic devices. [NASA-CR-86043] 11 p1771 N68-21026

In situ electron microscopy for studying vapor deposition nuclearion processes [NASA-TN-D-4506] 11 p1654 N68-21430

Vapor deposition for examining microstructure of trium oxide-silicon dioxide 13 p2087 N68-23298 [TR-15]

m deposition on heated metal surfaces from 13 p2018 N68-23838

Boron and boron carbide formation by vapor deposi-tion and possible rocket nozzle applications [BM-RI-7150] 14 p2214 N68-24753

Aluminum vapor deposition on cold substrate for op-timal electrical contact to solar cell [NASA-CR-94800] 14 p2192 N68-24921

Cesium oxides as electronegative additives, single crystal tungsten converter, vapor-deposited tunsten emitter materials, and thermodynamic meaning of electronegativity and work function [NASA-CR-94764] 14 p2194 N68-25619

Silicon oxide film production by low temperature prolysis of tetraethoxysilane ECOM-29181

15 p2490 N68-26573 Epitaxial growth, vapor deposition, and properties of single beta-silicon carbide crystals [AFCRL-68-0166] 15 p2490 N68-26667

Chemical vapor deposition growth of epitaxial single rystal lithium ferrite thin films (NASA-CR-86063) 16 p2745 N68-28034

Satellite extendable boom fabrication using berylli-m copper alloy strip with aluminum and copper oxide

[NASA-CR-95805] 18 p3080 N68-29903 Molybdenum deposition on zirconium and uranium dioxide spheres from gas phase [MLM-1508/TR/] 20 p3430 N68-33149

Vapor deposition of alumin talum tungsten hafnium alloy [Al-AEC-12643] m oxide coatings on tun-20 p3535 N68-33490

Vapor absorption into electrolyte meniscus and in-duced cell electrode potential 21 p3646 N68-33629

n and nucleation of boron triiodide on tungsten by physical vapor deposit 21 p3649 N68-33956

Vapor deposition of materials for electron tubes [S-1075] 21 p3670 N68-34605

Fuel and fission product transport through chemi-cally vapor-deposited fluoride tungsten [NASA-CR-97118] 23 p4099 N68-36100

Preparation of vapor deposited cadmium sulfide thin lms on indium antimonide semiconductors for coustic propagation studies of electron-phonon in-[NASA-CR-98005] 23 m4155 N68-36956

Numerical modeling of ice crystal growth rate in air with weather modification applications [RM-3715-NSF] 23 p4096 N68-37271

[RM-3713-Nar]
Temperature and glass substrate effects on structure of nickel films deposited on glass plate
24 p4262 N68-37983

VAPOR GENERATORS U VAPORIZERS

VAPOR JETS

Pulsed performance of steam reaction jet [TR-1001/2230-33/-2] 08 p1231 N68-17941

VAPOR LIQUID EQUILIBRIUM

U LIQUID-VAPOR EQUILIBRIUM

NDEX

-21430

Condensation of vapor and vapor-gas mixtures in nonequilibrium supersonic nozzle flows
01 p0049 N68-10113

Lead telluride crystal growth of homogeneous com-position using vapor gas phase in high vacuum 01 p0123 N68-10193

Single vapor phase growth system for preparing miconductor materials [NASA-CR-90110] 01 p0126 N68-10932 High temperature measurements of uptake rate of molybdenum oxide vapor by selected oxides [USNRDL-TR-67-98] 02 p0174 N68-11189

Transport mechanisms, and growth of whitkers fre [ERDE-17/M/66] persaturation, nucleation, or phase 04 p0472 N68-13554

Molecular physical properties of deuterium and triti-um in gaseous, liquid, and solid phases [CEA-BIB-87] 04 p0551 N68-13802

Elementary rate constants for reactions of hydrogen atoms with substrate molecules in gas phase [NYO-3794-1] 03 p0625 N68-14540 Tabulated selected valu ies of electric dipole moments

for molecules in gas phase [NSRDS-NBS-10] 05 p0628 N68-14934 Logarithmic normal and Chi-square distribution unctions evaluated for determining drop size distribu-

tion in liquid sprays [NASA-CR-72272] 06 p0831 N68-16068 Kinetics of vapor phase dehydration of methanol and ethanol catalyzed by cation exchange resins ange resins 10 p1482 N68-19739

Dynamic responses of packed distillation column, and vapor temperature-reflux flow rate relationship of benzene-toluene binary system

10 -1452 NAS-20081

10 p1488 N68-20081 Vapor phase growth and mechanical properties of BM-RI-7118] 10 p1491 N68-20221

Heterogeneous nucleation in vapor-solid transforma-11 p1658 N68-21838

Mass spectrometric studies of vapor composition of tanium carbide-carbon and zirconium carbide-carbon (LA-TR-67-91) 12 p1838 N68-22705

Vapor phase cleaning method for Apollo propellant system decontamination and propellant tank drying [NASA-CR-62068] 13 p2074 N68-23526

Pressure-cycled vapor phase cleaning method for pollo service module propellant tank decontamina-(NASA-CR-62069) 13 p2144 N68-23541

Photochemistry of benzene vapor at 2062A under pressure of gases [COO-913-21] 14 p2211 N68-24641

Direct measurement of gas rate constants for photoexcited molecules using phase fluorimeter 15 p2408 N68-26081

Problems in gas phase photolysis of acetone 15 p2410 N68-26091 acetone presence

Gas phase photolysis of hexafluorous of diborane 15 p2410 N68-26092 Vapor phase photolysis of methyl formute and methyl carbonate

15 p2410 N68-26094 ns in aircraft tanks and

Fuel vapor and spray conditi existing flammability [DS-67-7] 16 p2746 N68-26994 e temperature distribu-

Interfacial vapor-condensate tion including effect of vapor su [DSR-70586-53] 17 p2987 N68-29126

Surface diffusion mechanism and coefficient from gas phase adsorption kinetics in N-SiO gel 18 p3017 N68-29615 High temperature vapor phase analyses on molecular equilibria in gas clouds containing counic elements and solar wind interaction with solids

19 p3360 N68-31001 Infrared spectra analyses on high temperature molecules of refractory ma [AFOSR-68-1211]

19 p3230 N68-31868 beryllium and aluminum 19 p3386 N68-31933 (UTC-2183-FR) Magnetic shielding theory application to solid and

20 p3572 N68-32966 Thermodynamic, tramport, of saturated liquid and vapor po [NASA-CR-96741] ort, and nuclear properties 21 p3794 N68-34076 Helical, forced flow boiling mercury ph tion research applicable in determining par mechanisms influencing performance of R.

SAN-677-251 21 p3628 N68-34592 sion-product-nuclear fuel

mixtures in gas phas (ORNL-TM-2105) 21 p3653 N68-34614 Literature survey of vapo are chemical agents for [NASA-CR-73263]

23 p4190 N68-37380 Experimental techniques for establishing eterogeneous solid-gas and gas phase reactions of carbon spheres (FS68-1/U/) 24 p4355 N68-38159

VAPOR PRESSURE

Vapor pressure determined and isotherm-isoba otted for water and hydrochloric acid at 25 degree (PA-TT-60) 01 p0019 N68-10262 or pressure determina-

Liquid ceri tion between 1295 and 1570 d [NASA-TT-F-11269] 8 C 01 p0074 N68-10289

Temperature dependent ty, vapor pressure, liquid d of vaporization, surface ten liquid metals ameters of vapor density, vapor viscosity, heat , and liquid viscosity for [UCID-15176] 01 p0153 N68-10926

Flammability properties of hydrocarbon fuels and volatile components at low concentration effects on flammability of liquid fuels
(NRL-6578)

07: 00260 N68-11260

Dark conductivity, photoconductivity, and lu-inescence of cadmium sulfide crystals heat treated in 03 p0404 N68-12101

Cadmium sulfide dark conductivity as function of sulfur vapor pressure during heat treatment between 500 and 700 deg C. [NASA-CR-91030] 03 p0406 N68-12268

Vapor pressures of liquid molybdenum and liquid reconium determined by Langmuir free evaporation BM-RI-7063] 04 p0466 N68-13266

Vapor and dissociation pro-olten oxides to determine the running oxides in high tem iation pressure measurements of ermine their suitability as solvents for uranium (TUBIK-4) os posso N68-14000

Sublimation pressure and evaporation coefficient determined for praecodymium triflouride [UCRL-17804] 05 p0621 N68-14225

Formula for correcting Knudsen vapor pressures for cell losses using known effuse distribution and conden-05 p0702 N68-14683 Data sheets for surface tension, vapor pressure, apor density, and viscosity of liquid metals used in

EUR-3653.E) 05 p0757 N68-14750 Critical thermodynamic properties of sodium, potassium, lithium, and rubidium
[FEI-52] 05 p0757 N68-14812

05 p0757 N68-14812 Molecular flow and effusion apor pressures investigated u n process in measuring under non-ideal condi-

[ASD-TDR-63-754, PT. 3] 09 p1325 N68-18367 Performance tests of vapor ines for use in Runkine cycle space electric power [NASA-CR-72273] generators 09 p1276 N68-19007

Vapor pressure, anode t mission effects on thallium mperature, and inverse filled diode tested with [NASA-CR-54751] 09 p1316 N68-19433

Conductivity, solubility and rinc in gallium arsenide as fi diffusion coefficient for 11 p1644 N68-20627

nethod for determining m and liquid hafniom 11 p1654 N68-21426 Langmuir free evaporation vapor pressures of liquid niobi [BM-RI-7125] ium to 2170

Vapor pressure mea deg K [NASA-TN-D-4535] 14 p2372 N68-25122 Heat pipe flow simulation in vapor of heat p [LA-3881-MS, PT.1] n to determine pressure dis-

15 p2389 N68-25656 Vapor pressure data to 1000 atmospheres for refrac-tory elements with low thermal absorption [NASA-TM-X-52329] 15 p2573 N68-25698 isotope effect and thermodynamic properties of liquid hydrasine, dilborane and hydrides in structural theory of liquids

15 p2419 N68-26737

Diffusion flux and vapor pressure for escaping gas rom measurement of steady state weight loss of Knodies cell NASA-CR-824961 16 a2679 N68-27446

rements on saturated Tensiometric pressu hydrocarbon fuel vapor 16 p2746 N68-27856

measuring feel vapor 16 p2748 N68-27858

Measurement and correlation of some physical pro-perties of methane and per-deuteromethane 18 p3099 N6E-30069

Thermochemical research for enthalpy, businergy, and vapor pressure of aliphatic disminutes of the contract of [AFOSR-68-0984] 18 p3023 N68-30136

22 p3916 N68-35164

Determination of heats of fo bide and evaporation product data formation of elicon car-cts from vapor pressure (FTD-MT-24-245-67) 22 p3824 N68-35377

Beta diketone metal ared using quartz o vapor pressures mea-lourdon gage and oil [GNE/PH/68-11] 23 p4007 N68-36313

VAPOR TRAILS U CONTRAILS

VAPORIZATION HEAT U HEAT OF VAPORIZATION

VAPORIZERS NT EVAPORATORS

tors for operating ejec-lating test stands 14 p2191 N68-24798 Development of steator stages of rocket altit [BMWF-FB-W-68-23]

Coupled pained lase reportize refractory mate ira data (USNRDL-TR-68-36) 18 p3084 N68-30322

APORIZING NT BOILING

NT FLASHING (VAPORIZING)
NT FLASHING (VAPORIZING)
NT LEIDENFROST PHENOMENON
N NUCLEATE BOLLING
NT PROPELLANT EVAPORATION
NT SUBLIMATION
NT TRANSPIRATION

High temperature vol thorium carbide particle (JUL-502-RG-RW) n of neodymium from 01 p0095 N68-10869

High temperature vap-sing evaporation rate on mechanisms studied urements from single IUCRL-17628] 02 p0281 N68-11379

ides, carbides, silicides es, and sulfides with ap-LA-TR-67-511 03 p0316 N68-12587

Vaporization of binary uran termediate uranium compou gallium, indian, and zinc [UJV-1783] mium compounds, and in 05 p0628 N68-14880

e studies by Know AERE-R-5424) 06 p0925 N68-15375

Combustion in inpropellant vapor [NASA-CR-920] on using nonli 06 p0927 N68-15833

is for thermodynamics olives 11 p1766 Heat-20653 Vaporization wave hype and resistance rise in explos (BRL-1383) Vaporization co a with capillary distribu

11 pillos Nell-21347 [DLR-FB-67-85] Steel melting and vaporizing multichamber electron beam fur [UCRL-TRANS-10220, PT. 2] ng processes in 200-kW 14 p2265 N68-25139

of phononics and repre-net to be being the 120 and 12 UJV-1832-41 Crystal structure, Gibbs for is free energy, and vapor com-reportunition of binary premium T7 p2842 Nas-29117

SUBJ

Sta data analy (REF Co of var [NW Va Kalm

Eff (ETV The analy and p (MM

Va appli De [AD-VARIA U C VARIA Va two ture: [TR-

Mitimizer of the control of the cont

Variation and subscitation in composition of it.	Variability of diversal variations in country we intensi	Photoclastric absorption of variable stem
Vaporization and pulverization in reprocessing of ir- radiated ceramic nuclear fuels by chlorine trifluoride and fluorine	Variability of diurnal variations in cosmic ray intensi- ty 19 p3361 N68-31415	Photoelectric observation of variable stars 11 p1782 N68-2124
[ANL-TRANS-590] 17 p2843 N68-29270	Soviet analysis of space-time variability of cloud base	Photometric data on irregular variable stars is Cygnus clouds
Vaporizing, pulverizing, and fluorating irradiated UPu nuclear fuels to reprocess them [EURAEC-2011] 18 p3119 N68-30723		Photometric data for nine long period variable star
Knudsen cell technique for studying non-isothermal	Dynamic programming and inaccessible state varia-	and one Algol eclipsing variable in Cygnus constella- tion
changes in properties or compositions of silver and boron nitride during vaporization	ble theory applied to accelerometer design [NASA-CR-61870] 17 p2864 N68-28969	14 p2346 N68-25072
[AFML-TR-67-392, Pf. 1] 19 p3231 N68-31880	VARIABLE AREA WINGS	Photometric data for long period, eclipsing binary and novalike variable stars in Cygnus constellation
VAPORS	U TRAILING-EDGE FLAPS VARIABLE GEOMETRY STRUCTURES	14 p2346 N68-25073 Density distribution of variable stars
NT CESIUM VAPOR NT MERCURY VAPOR	Wind tunnel tests on rectangular twin duct variable	22 p3958 N68-34960
NT METAL VAPORS NT SODIUM VAPOR	geometry air intake at supersonic speeds [ARC-CP-944] 03 p0296 N68-12120	Variability detected in faint, red star near galactic plane
NT WATER VAPOR Stationary motion of vapors from solids heated by	Variable geometry intakes for matching engine to in- take airflows, and to maintain high pressure recovery	24 p4341 N68-37773 Radial velocities of Omicron Andromedae during
radiation in presence of lateral spreading 02 p0280 N68-11027	and low drag over Mach number ranges in supersonic	1961 to 1966 24 p4341 N68-37774
Vapor and vacuum deposition for high strength fila-	transport design [RAE-TR-66[87] 08 p1229 N68-17269	Minima of eclipsing variable stars-tables
mentary materials [NASA-CR-91279] 04 p0514 N68-12809	Design feasibility of variable geometry structural concepts for lifting reentry vehicles	24 p4342 N68-37917 VARIABLE SWEEP WINGS
Similarity theorem for calculating thermodynamic properties of moist lithium vapors	16 p2774 N68-27941 Variable geometry concepts applied to guide vanes	Variable geometry wing planforms for transonic and
04 p0598 N68-13855 Vapor ingestion during liquid outflow in scale model	and stators in single stage compressors [NASA-CR-54554] 18 p3157 N68-29854	supersonic aircraft [NASA-TT-F-11318] 05 p0605 N68-14265
Centaur liquid hydrogen tank	Effect of variable stator geometry on performance of	Design calculations for modified variable stability aircraft
[NASA-TM-X-1482] 09 p1330 N68-19225 Modified heat flow model for magma extrusion and	air cooling turbine [NASA-TM-X-1632] 18 p2996 N68-29994	[NASA-TT-F-11679] 10 p1458 N68-19750
volcanic vapor [NASA-CR-62060] 12 p1866 N68-22109	Variable structure regulator for automatic imple- mentation of lateral stability of aircraft	Theoretical study of effect of pivot location on aerodynamic balance movement of variable sweep
High temperature thermodynamic properties of gases and vapors	[JPRS-45964] 19 p3256 N68-31217	wings in incompressible flow [NASA-TN-D-4635] 17 p2802 N68-28817
[CU-2660-39] 12 p1983 N68-22542	Variable geometry requirements in exhaust nozzles and inlets for high Mach number applications [NASA-TM-X-52447] 20 p3580 N68-33585	Wind tunnel evaluation of speed brake effects on su- personic characteristics of variable sweep fighter air-
Healed ionization chamber for ion current measure- ments in mixtures of organic vapors	[NASA-TM-X-32447] 20 p3580 N68-33585 VARIABLE LIFT	craft models [NASA-TN-D-4773] 21 p3621 N68-33669
13 p2016 N68-23746	U LIFT VARIABLE MASS SYSTEMS	Wind tunnel tests to determine low speed high lift
Heat transfer rate for pure vapor condensing turbu- lently in horizontal tube during annular flow 13 p2170 N68-23750	Problem of programming thrust and control of flying	aerodynamics of one-fifth scale variable sweep super- sonic transport model [NASA-TN-D-4844] 23 p3987 N68-37365
Constant magnesium vapor density maintained by	vehicle as variable mass body 01 p0099 N68-10705	[NASA-TN-D-4844] 23 p3987 N68-37365 VARIABLE THRUST
magnetic trap [NP-TR-1642] 16 p2729 N68-28097	Modified Newton method for trajectory optimization	Algorithm for generating low variable thrust inter-
Subatmospheric pressure effects on dynamics and growth of single vapor bubbles	of variable mass point in gravitational field [FTD-HT-67-447] 02 p0228 N68-11314	planetary trajectory data for mission analysis of electri- cal propulsion systems [NASA-TN-D-4431] 11 p1782 N68-21228
17 p2983 N68-28353	Euler-Lagrange equations for acoustic waves in vari- able mass and force	[NASA-TN-D-4431] 11 p1782 N68-21228 Acceptability of variable area scroll for power
Operating characteristics and limits of vapor chamber fins or heat pipes	15 p2508 N68-26002 Optimum motion in gravitational field of variable	transfer in tip turbine lift fan system for variable thrust aircraft control
[NASA-CR-1139] 20 p3611 N68-33203 Condensation and heat transfer of dielectric vapor in	mass body with limited power engine, energy accumu- lator, and limited exhaust velocity engine	[R67FPD218] 15 p2547 N68-26805
nonuniform electric field 21 p3792 N68-33713	[FTD-HT-67-324] 23 p4165 N68-36218	Variance of increasingly amouthed random variable
Numerical solutions for unsteady draining processes with simultaneous vapor condensation using finite dif-	Design and implementation of non-interacting con- trol in multivariable system	[BNWL-SA-1406] 02 p0229 N68-11505
ference techniques	24 p4239 N68-37752 VARIABLE PITCH PROPELLERS	Variation of concentration in plumes and building wakes
24 p4245 N68-37718 Effects of pipe dimensions, surface tension, and gas	Cavitation performance and open water evaluation	[BNWL-SA-1400] 02 p0232 N68-11506 Bayesian analysis of three-component hierarchical
concentration in vapor condensation on horizontal pipe	of variable pitch supercavitating propeller [NSRDC-1636] 03 p0334 N68-11972	design model, and Bayesian solution to problem of pooling variance estimates
24 p4353 N68-37743	Direct method for determining overall forces and moments of inclined propellers	[TR-84] 04 p0527 N68-12915
Cavitation conditions and hydrodynamics of vapor- water mixtures	04 p0445 N68-13656 VARIABLE STARS	Probability density functions for products of bivariate Gaussian waves of variance and covariance
[FTD-HT-23-586-67] 24 p4247 N68-38271 VARACTOR DIODE CIRCUITS	NT CEPHEID VARIABLES	[RAE-TR-67233] 06 p0797 N68-15308 Determining number of continents by statistical anal-
Electromagnetic noise at near carrier microwave frequencies in varactor multiplier sources	NT HERCULES NOVA NT NOVAE	ysis of spatial variance [TR-9] 09 p1332 N68-18511
22 p3845 N68-34815	NT SUPERNOVAE Astronomical photoelectric measurements and	Phase shift analysis for two body interaction with fac-
Harmonic generation using varactor capabilities of plasma sheath	polarimetry of the star W Serpentis over 33 nights [AD-659202] 01 p0135 N68-10651	[JINR-P2-3404] 10 p1566 N68-19756
22 p3941 N68-35170 Circuit model for characterizing pumped varactor	Periodic variation and other properties of variable	Optimization theory for multivariate regression anal- ysis of satellite and space navigation systems
diode circuits, and numerical techniques for analyzing input impedances	stars in M 53 02 p0267 N68-11717	12 p1902 N68-22175
24 p4234 N68-37457	Photographic study of variable stars of Rho Cygni field	General FORTRAN program for least squares analy- sis of variance computations
VARACTOR DIODES Theoretical nonlinear distortion in varactor paramet-	02 p0268 N68-11786 Astronomical photography, tables and data on varia-	(OR-68-1) 13 p2033 N68-23327 Asymptotic results obtained from testing set of cor-
ric amplifiers [R67ELS-37] 13 g2040 N68-23979	ble stars 02 p0268 N68-11799	relation coefficients for equality [TR-80] 15 p2495 N68-26785
Thermionic emission, and current-voltage data on variance thin film diode for voltage regulators. [NCEL-TR-575] 16 p2630 N68-26982	Photoelectric photometry of star HD 116994	Comparisons with control for variances of normal
	[NASA-CR-91506] 04 p0577 N68-13629 Two star simulator and beam combination	populations [TR-42] 16 p2693 N68-27153
U VARACTOR DIODES	[NASA-CR-65943] 07 p0981 N68-16393 Discrete model of star, auto-oscillations of Cepheid	Single stage procedures for ranking multiply clas- sified variances of normal populations
VARIABILITY	model, and oscillations near stellar surface	[TR-41] 16 p2695 N68-27309
Stability of linear time varying systems [NASA-CR-94777] 14 p2233 N68-25368	07 p1082 N68-17031 One degree of freedom discrete model of star with	Factorial design in pooling mean squares for error variance estimation evaluated using Monte Carlo
Variable redundancy error detection codes [NASA-CR-78334] 16 p2623 N68-27618	radiative energy transfer 07 p1082 N68-17032	methods [NASA-TM-X-52317] 16 p2696 N68-27474
Nucleus levels neutron width affect on variability in total neutron cross sections for 20 elements	Approximate expression for nonadiabatic oscilla- tions near stellar functions	Variance reducing techniques, and basic charac- teristics of Monte Carle Method
total neutron cross sections for 20 elements 17 p2923 N68-28389	07 p1082 N68-17033	17 p2857 N68-28587

68-21248 stars in 68.74949 iable stars constella-68-25072 ng binary 68-25071 68-34960 galactic

68-37773 e during 58-37774 8.37917 onic and 8-14265

stability 8-19750 tion on 8-28817 ts on su-8-33669

high lift super--37365 t inter electri--21228 power thrust

-26805 11505 uilding 11506

rchical lem of 12915 is of 15308 amul-18511

th fac-19756 anal-2175 naly-3327

f cor-6785 icmai 7153 clas-

7309 error Carlo 7474 1587

Statistical analysis of radiosonde scalar data with data reduction and autocorrelation, and least squares analysis of variance (REFT-5) 18 p3109 N68-30194

Computer program for linear regression, and analysis of variance and covariance [NWL-TR-2108] 18 p3105 N68-30413 Variance of the state estimation error of adaptive

21 p3656 N68-33843

Effect of errors on orbital calculation IETV-TM-68-86-TM-891 22 p3964 N68-36002

Thermoelastic properties, quality control, variance analysis, and description of test specimens of SNAP numd p-type thermoelastic legs [MMM-8406-1757, V. 1, PT. 1]

24 p4293 N68-37527 Variance of increasingly smoothed random variable applicable to atmospheric pollution studies 24 p4288 N68-38408

pory approach to multivariate analysis
24 p4278 N68-38441 [AD-674524]

VARIATION METHOD

U CALCULUS OF VARIATIONS VARIATIONAL PRINCIPLES

Variational principles for free molecular mixing of two initially parallel gas streams of differing tempera-ture and speed ratios [TR-1001/2240-20/-17]

01 p0050 N68-10158

Mathematical model and algorithm for stochastic op-timization of parameters by variational principles in search region - control theory 01 p0041 N68-10305 Multichannel variational space-time synthesis with discontinuous expansion functions [KAPL-M-6711] 01 p0085 N68-10656

Nonlinear eigenvalue problem in Hilbert space characterized by variational principles [MRC-TSR-792] 03 p0684 N68-14967

Polarization gradient in elastic dielectrics
71 06 p0895 N68-16058

Density matrix variational principles at finite tem-UCD-CNL-82] 07 p1035 N68-16467

Variational problems involving functional dif-ferential equations, and derivation of general maximum principle involving adjoint variables or multipliers [NASA-CR-92710] 07 p1015 No8-17077

Vibration problems formulated as variational princi-ples and as systems of differential equations 08 p1247 N68-17502

Restricted variational principle method for mixing of parallel low density stream TR-0158/3240-20/-2]

08 pl 162 N68-17903 Approximate solution to time dependent multigroup neutron diffusion equations using restricted variational principle

10 p1555 N68-19668 Variational principles for elastic plates with relaxed minimity requirements 10 p1607 N68-20181

[TR-16] Extensions and simplifications for convergence proofs of relaxation methods for nonlinear systems [CS-88] 11 p1728 N68-20933

Perturbation theory applied to variational analogy between reactor theory and classical mechanics for solving neutron diffusion problems lems 12 p1914 N68-21961

Interchange theorems and variational principle in perturbation theory [NASA-CR-94333] 12 p1898 N68-22203

12 p1917 N68-22416 Sum rules for varial [NASA-CR-94597] Variational principle and the convergence of finite element method based on assumed stress distribution [ASRL-TR-144-1] 13 p2163 N68-24045

Variational techniques tional bands in oxygen 16 calculate even parity rota-

16 p2724 N68-27837 Variational principles for lower bounds in ground state particle energy and free energy of ferromagnetic systems in many body problems

17 p2919 N68-28406 Variational principles and approximation methods for boundary value problem of linear coupled ther-moelasticity 18 p3186 N68-29965 Nonlinear equations of this shell theory constructed on basis of Kirchhoff-Love hypothesis in quadratic ap-

18 p3178 N68-30237 19 p3320 N68-30876

Lattice symmetry corrections to energy bands from spherical model using variational principles [FOA-4-C-4352-23] [9 p3355 N68-31555

riational methods for anisotropic Heisenberg chain at nonzero temperature 20 p3571 N68-32946

Theoretical contributions variational methods and bout tions in papers at electron-ator [NASA-CR-89217] ns on classical methods, ounds, and Faddeev equa-tion collision conference 21 p3736 N68-33888

Variational approach to two phase creeping flow problem involving free interface 22 p3855 N68-35004

Invariant imbedding equa problems for optimization of fu [RM-5702-PR] ons from variational ctions 23 p4109 N68-36899 ms derived from varia-

Few-group diffusion estional principles [WAPD-TM-733] 23 p4125 N68-36948 Dynamic programming as quadratic variational process [RM-5755-PR] nd optimal trajectories for 24 p4241 N68-38371

ARIATIONS

ANNUAL VARIATIONS

AND AUGUSTA VARIATIONS

AND HURNAL VARIATIONS

AND GEOMAGNETIC MICROPULSATIONS

AND GEOMAGNETIC PULSATIONS

AND MACHITIC VARIATIONS

AND FERIODIC VARIATIONS

AND TWENTY-SEVEN DAY VARIATION

NOT WIND VARIATIONS

nic signal strength ification in sei Love wave magn 13 p2058 N68-23286 Variation of profile drag with Mach number up to critical value [ARC-R&M-3520] 14 p2180 N68-24768 14 p2180 N68-24768 Fluctations of electric fields in penning discharge

14 p2326 N68-25235 MATT-TRANS-57] Interplanetary magnetic field fluctuations from IMP 2 satellite [NASA-TM-X-63275] 17 p2971 N68-29178

Latitudinal variations in neutral atmospheric density measurements from Explorer 32 measurements [NASA-TM-X-63264] 17 p2881 N68-29419 Computer program for calculating fractional varia-tion of ratio of two bilinear functionals of real and ad-TR/FI/68/10] 17 p2860 N68-29480

Hydraulic compound vortex amplifier optimization [NASA-CR-96226] 20 p3401 N68-32409

VARIOMETERS G-load variometer and integraircraft vertical velocity [FTD-MT-66-26] eter and integrator united to measure 03 p0300 N68-12224 Geomagnetic pulsation measurements during 1967 in Germany

19 p3371 N68-32171

ASCULAR SYSTEM

NT AORTA

NT -ARTERIES

NT BLOOD VESSELS

NT CAPILLARIES (ANATOMY)

Clinical and morphological characteristics of emodynamic responses in eye vascular system of rab-its exposed to transverse accelerations 17 p2818 N68-28506

VASOCONSTRUCTION

Effect of changing gravity and weightlessness on vasopressin control systems [NASA-CR-90750] 03 p0306 N68-12568 conditions of induced 14 p2202 N68-25462

Viscosity and external constraints studied for effects on wave transmission in blood vessels [NASA-CR-93802] 18 p3008 N48-30029

VASODILATION

Dual vasomotor control of cutaneous blood vessel in human forcarm 12 p1822 Nes-22006

tions of induced 14 p2202 N68-25462 VASOMOTOR NERVOUS SYSTEM
U NERVOUS SYSTEM

VC-10 AIRCRAFT

Mathematical model for inversion of normal mode alculation and lateral vibration characteristics deter-nination for VC-10 aircraft 08 p1250 N68-17525

VECTOR ANALYSIS

NT COLLINEARITY

NT COPLANARITY

NT VORTICITY

Conditions for covariance of equal time cor

01 p0106 N68-10427 Characteristic functions of random vector with line unctional components of process having independencements

02 p0226 N68-11066 Proper efficiency and theory of vector maximization (AD-659989) 02 p0226 N68-11076 Derivation of basic plasticity equations for ma

ORNL-4138] 03 p0420 N68-12203 Transvector relations in metric spaces of charac-

04 p0531 N68-13492 Device for obtaining and displaying wind vector components for four cardinal posts of direction and accumulating total wind passage data [WBTM-EDL-3] 05 p0660 N68-14188 data 05 p0660 N68-141EE

Flutter in high speed sircraft, and amplitude frequency and vector analysis for determining vibration modes. 05 p0750 N68-14571

Linear interpolation methods for calculating of magnetic field strength for sets of space points with preset three dimensional magnetic field tables.

[JINR-P11-3512] 05 p0702 N68-14668

Algorithm for synthesis of automatic control systems 05 p0640 N68-14873 Computer program for constructing maximum likelihood multidimensional vector fields [BNWL-390] 07 p1016 N68-17109

of elliptically polarized 14 p2220 N68-24357

Vector multiplication used magnetohydrodynamic model [FTD-HT-67-75] d to construct stationary for cyclone 15 p2531 Nest-26495 Theory of curves in four dis

to p2694 No8-27250 ty analysis and optimum Vector flow graph sensitive 18 a3101 N68-29766

solving Navier-Stokes w in three dimensions 18 p3059 N68-29783 Vector potential used for populations for incompressible

Vector analysis of microth [RAE-TR-68008] 18 p3163 N68-29883 isted with vector Linear differential gr

[NASA-TT-F-11560] ... 18 p3107 N68-30718 Toward vector meson be strap in anti-boson benon 20 p3541 N64-32318

med beam date and de-ug horizontal winds 20 p3520 N68-32583 Vector calculations un tector arrangement for m [NASA-TM-X-53754] ur and nonlinear two Finite element anal dimensional structures [SESM-66-22] 20 p3601 N64-32594

Hypothesis of commute murning linear ball of ph dense in Hilbert space JINR-E2-3799) supersolection rules by the realizable vector set 20 p3546 N68-33011 Distribution of allp line direction in plantic deforms

20 p3603 N68-33120 Constrained minimization criteria in linear topological sp [NASA-CR-65133]

21 p3672 NAS-33837 Vector analysis of known ny secondary emis 21 p3740 N68-34329

22 p3855 N68-34925

22 p3898 N68-35930

SUBJ

SAF

VEHIC

VEHIC

A

cles (TD

VELO

NT NT NT

D

VEL

PPD

Ta

Elastic body stability criteria calculated from exter-nal loading and vector analysis of displacements 23 p4180 N68-36350 DIRECTIONAL CONTROL VECTOR CURRENTS Approximation of spectral functions by one and two ion contributions 01 p0083 N68-10155 Current algebra and deviation from delta vector in LPTHE-TH-207] 01 p0116 N68-10950 Radiative corrections to vector beta decay through suitable modification of quark current algebra [ISS-67/29] 02 p0248 N68-11592 Consistency check of purameters in Lagrangian heory for algebra of fields 02 p0249 N68-11796 Partially conserved vector and tensor current hypotheses applied to photopion amplitude [IC-67-17] 12 p1923 N68-22191 Equal constants in syn axial-vector currents [ITF-67-19] etry between axial and 12 p1941 N68-22939 CP violating weak currents [ISS-68/3] 13 p2117 N68-23651 Vector currents applied to ed to electromagnetic interac-eutrinos in production of soft 15 p2491 N68-26047 Vector currents for S matrix elements applied to strangeness of hyperons, S and P wave decay, and baryon-meson and meson-meson scattering 18 p3130 N68-29944 Relativistic equation for dynam meudoscalar and axial vector meson [AD-671201] 19 ic calculations of 19 p3329 N68-31302 tion of chiral dynamics involving 20 p3542 N68-32363 Scalar magnetic potential and magnetic field intensi-vector components of current carrying circular loop RTS-4196] 20 p3536 N68-32625 ty vector componer [RTS-4196] ecay secondary emission 21 p3740 N68-34328 Sigma model and equ d time current-current commutators in perturbation [JINR-P2-3827] 22 p3936 N68-35851 vergent sum rules for scattering of pions and axial vector or vector particles 22 p3938 N68-35978 Approximate symmetry predictions for hadron axial ictor current, and implications of bootstrap principle requal time commutators of hadron currents 23 p4115 N68-36308 Sum rules for spectral functions of vector and axial fields obtained from hypotheses on vacuum values of DE UM COME [IC-68-61] 23 p4126 N68-36990 Kaon form factors in current algebra with hard pions and kaons [IC-48-58] 23 p4131 N68-37123 Beta, muon, lyperon, and kaon decays, and vector, isl, and hadronic currents in weak interactions 24 p4307 N68-37536 High energy neutrino interocesses, electromagnetic scr ino interactions and leptonic setic scattering, and conserved 24 p4307 N68-37539 axial vector co n process studies with partially currents generalized for elec-24 p4308 N68-37542 VECTOR MESONS Vector meson dominant model of electromagnetic teraction of hadrons for kaon decay to pion, positron, (NUP-A-67-15) 05 p0704 N68-13979 ing isospin singlets of 1 plus and 1 and by Weinburgs sum rules based 12 p1919 N68-21990 of Green function of Thirring me (SC-47-23) 12 p1922 N68-22158

Theoretical aspect of electromagnetic interactions and properties of leptonic decay of vector mesons and multipion and vector meson photoproduction [DESY-67/43] 12 p1930 N68-22581 Basic rules and symmetries of quark model [PUC-937-285] 13 p2114 N68-23303 Dirac field proton model for relationship of spin esonances of pion systems and electromagnetic in-NYO-1932/2/-1301 15 p2524 N68-26616 Gauge theory of strong interactions applied to vector meson system 16 p2724 N68-27838 Photon reaction amplitudes related to vector meson reaction amplitudes after polarization of spin [DESY-68/4] 16 p2732 N68-28177 Comparison of Regge pole theory to experiment for to meson nucleon production in pion nucleon scatter-17 p2942 N68-29483 Chiral symmetry, superconvergence sum rules for scattering amplitudes [IC-67-47] 18 p3129 N68-29842 Vector meson de ce analysis of pion-proton reaction [DESY-68/6] 18 p3137 N68-30699 Relativistic equation for dynamic calculations of leudoscalar and axial vector meson parameters AD-671201.] 19 p3329 N68-31302 AD-6712011 Zero/4/ symmetry and effects of particle interactions 19 p3337 N68-32130 Brief summary on Soviet investigation of transforma-on of photons and vector mesons 20 p3545 N68-32964 Differential cross section measurements of vector meson photoproduction from hydrogen at energies from 6.5 GeV to 17.8 GeV [SLAC-PUB-439] 20 p3549 N68-33320 Strong interaction superconvergent sum rules for axial vector meson and pi scattering 21 p3737 N68-33930 SU/3/ predictions for electromagnetic decays and feotoproduction reactions including pseudoscalar and ector meson production 22 p3920 N68-34829 Regge poles and occurrence of resonances in pi N at KN collisions [UCRL-TRANS-1364] 22 p3931 N68-35575 Tabulated and graphical data on photoproduction ad leptonic decays of vector mesons [DESY-68/29] 23 p4114 N68-36208 Vector meson dominance model and positive-pion roduction by unpolarized and linearly polarized DESY-68/331 23 p4132 N68-37168 Optical theorem for quasi-electron scattering and photogroduction of vector mesons [DESY-68/28] 23 p4133 N68-37185 VECTOR SPACES ADJOINTS BANACH SPACE CANONICAL FORMS EIGENVALUES **EIGENVECTORS** HILBERT SPACE MATRICES (MATHEMATICS) STOKES THEOREM [VECTOR CALCULUS] U SPIN SPACE VECTORS (MATHEMATICS) NT VORTICITY Collective compact sets for aproximating nonlinear operators of eigenvalue-eigenvector problems [MRC-TSR-758] 02 p0227 N68-11222 Optimal control of systems with distributed parame-05 p0640 N68-14872 Norm transformations, invariance groups, linear mappings, boundary values, and vector spaces [CS-75] 07 p1013 N68-16178 inimal Weinstein disk over all vectors from iffed subspaces of given matrices. (RL-4151) 07 p1015 N68-16657

Hodographic treatment of restricted three body

Hodographic equations of motion for powered or-bital trajectories in acceleration vector space [NASA-CR-61616] 09 p1427 N68-19376

NASA-CR-61615]

ne renormalization in 12 p1925 N68-22282

09 p1419 N68-18781

SUBJECT INDEX asymptotic theory of linear systems, and Floquet theory (NASA-CR-70260) 09 p1365 N68-19438 Sequence of probability measures on Euclidean n-(AECD/EL-6) 10 p1544 N68-19539 Linear vector space approach to network theory 10 p1544 N68-19646 Co-topology application to minimal topological 10 p1546 N68-19736 Topological convex spaces, affine transformations and theorem proving 15 p2494 N68-26592 Vector sequence spaces based on scalar sequence space theory 23 p4091 N68-37284 Vector space derivation - using dyads - of weighted ast squares for correlated noise (O-S-68-1) 24 p4277 N68-38143 Tensor analysis and vector spaces in continuum mechanics of topological deformations [CRREL-RR-207] 24 p4278 N68-38341 Tutorial derivation of recursive weighted least heory 24 p4230 N68-38426 e-vector estimation th (RO-S-68-2) VECTORCARDIOGRAPHY Vectorcardiogram and aortic blood flow of squirrel tonkeys in magnetic field monkeys in magnetic [NASA-CR-94966] 15 p2398 N68-26850 VECTORS [MATHEMATICS]
NT EIGENVECTORS
NT STATE VECTORS
NT VORTICITY Systems analysis technique based on redefined proper efficiency concept and theory of vector op-[RM-5454-PR] 04 p0529 N68-13264 Vector equation solution for interacting levels in diabatic approximation of slow collisions of heavy 06 p0886 N68-15952 Liapunov theorem for range of unbound vector valued measure [NASA-CR-92714] 07 p1013 N68-16322 Cellular computer organization for matrix and vector 11 p1667 N68-20932 Vectorial concept for solving three body problem in 12 p1969 N68-22885 Vectors, matrices, and determ 13 p2095 N68-23965 Automatic methods for general solutions to all integer matrix vector inequalit [BNL-12279] 15 p2492 N68-26360 Structural inconsistency of quantum electrodynamics of higher spin fields 16 n2730 N68-28133 Phase coordinate vectors, sh quality, and time minimax in m haping control to insure notion encounter 18 p3105 N68-30250 equality, and tin [JPRS-45913] tion of rotations and their algebra 18 p3107 N68-30594 Vector representati [NASA-TN-D-4696] Weight characteristics of dyadic bicompacts 20 p3516 N68-33116 Vector-matrix methods for error analysis of thin elastic shells, and error estimates for boundary value problem solution 22 p3970 N68-35057 [AROD-4166-13-M] of Boolean functions 22 p3900 N68-35344 Primer vectors and optim impulse trajectories 23 p4170 N68-36790 High order time derivatives of powers of radius vec-tor and power series expansions for celestial mechanics 23 p4090 N68-36795 VEGETABLES NT POTATOES Gas chromatographic analysis on oxygen containing compounds released by vegetables grown in closed ecological systems 09 p1282 N68-18916 VEGETATION Slab model of jungle utilized as mathematical model for characterizing wave propagation 02 p0182 N68-11712

Micrometeorological field studies on energy, mo-mentum, and mass transfer above vegetative surfaces [ECOM-0447/E/-F] 20 p3521 N68-32729

Current model field (IC-47-24)

et theory 68-19438 lidean n

INDEX

8-19539 eory 8-19646

pological 8-19736 rmations 8-26592

8-37284 veighted 8-38143

3-38341

d least

equence

-38426 -26850

defined or op-13264 vels in heavy 15952 vector

16322 vector 20932 lem in 22885

23965 all in-6360 nam-8133 nsure

344 vec-795

916

712

Radio propagation in tropical areas with heavy [SAR-9] 22 p3835 N68-35454

Tables for acceleration terminology equivalents based on human and vehicle angular and linear motion interrelationships [NASA-TM-X-60710] 02 p0172 N68-11828

Self-locomotive capabilities of surface and in rotating space static es of astronauts on lunar 14 p2204 N68-24873

VEHICULAR TRACKS

Annotated bibliography up to 1967 on tracked vehi-[TDCK-49992] 13 p2076 N68-23902 VELOCITY

ACOUSTIC VELOCITY AIRSPEED AIRSPEED
ANGULAR VELOCITY
CRITICAL VELOCITY
EXHAUST VELOCITY
FLOW VELOCITY
GROUND SPEED NT

HIGH SPEED HYPERSONIC SPEED LANDING SPEED

LANDING SPEED
LIGHT SPEED
LOW SPEED
ORBITAL VELOCITY
PHASE VELOCITY
PROPAGATION VELOCITY
ROTOR SPEED
SUBSONIC SPEED
SUBSONIC SPEED
SUPERSONIC SPEEDS
TIP SPEED NT NT

NT TIP SPEED TRANSONIC SPEED WIND VELOCITY

Doppler effect determination of velocity variation in crushing phenomena as function of time or 2273 03 p0349 N68-12273

Techniques and instruments for measurement of water level fluctuations, current direction and current velocity in rivers and canals [NOO-IR-67-50] 04 p0497 N68-12808

Diffusion control and power thrust efficiency of hroused propellers operated at hovering velocity 04 p0435 N68-13347

Generalized Kepler approximation and iteration procedure corrections for spacecraft trajectory and velocity coordinates representation [NASA-TT-F-11387] 04 p0576 N68-13355 04 p0576 N68-13355

Testing ground effect machine, PV-1, for static and towing speeds on water [NT-13-1967] . 05 p0606 N68-14886 Velocity range of transonic wind tunnel tests of air-craft models

U7 p0986 N68-16768 Stress induced edge and screw dislocation velocities in zinc observed by etch pitting 19 p3290 N68-31002

VELOCITY DISTRIBUTION

Relationships between wind velocity profiles and at-mospheric turbulence and stratification in lower at-mosphere

01 p0054 N68-10054 Impact pressure probes used to measure velocity profiles for rarefled subsonic gas streams
[D1-82-0656] 02 p0197 N68-11087

Mixing length hypothesis for turbulent boundary layer with suction and injection (RR-8) 02 p0198 N68-11285

Multiple rocket sounding experiment to study small scale features of horizontal wind fields in stratosphere and mesosphere [AFCRL-67-0263] 03 p0363 N68-12063

Plasma density and velocity profiles obtained in ex-haust stream of repetitively fired coaxial accelerator [AFOSR-67-2364] 03 p0401 N68-12360

Velocity field near thin, non-lifting delta wings calculated using supersonic linearized theory

[ARC-CP-96] 04 p0434 N68-13156 [ARC-CP-961]
Cramer theory of normal stationary stochastic processes applied to determining maximum wind velocity in given intervals of time 04 p0300 N68-13342

Experimental device for measuring and regulating rapidly changing temperatures of for measuring fluctuations in gas flow velocities

04 p0509 N68-13345 Spectra of atmospheric turbulence and applicability of similarity theory to vertical spectra 04 p0501 N68-13589 Plane-parallel turbulent air jet mixing flow, and velocity distribution in boundary layer 04 p0368 N68-13851

Effect of increased target information and aircraft relocity on side looking-radar operator performance in target identification [AMRL-TR-66-149] 05 p0630 N68-14444

Velocity similarity rule relating compressible flow velocity on general round leading edge to incompressi-ble velocity and angular displacement from stagnation NPL-AERO-1053) 06 p0825 N68-15317

Simultaneous correction of velocity and mass bias in photography of meteors [NASA-TR-R-280] 06 p0910 N68-15484

Stability of shear flow with density gradient and (NASA-CR-958) 06 p0827 N68-15530

Finite deflections of rigid-plastic strain hardening an-nular plates subjected to initial linear impulsive velocity profiles [ARPA-E53] 06 p0921 N64-15563 06 p0921 N68-15563

Velocity and density profiles in mixing region between adjacent half jets of dissimilar fluids [NASA-CR-957] 06 p0827 N68-15571

Probe to measure velocity distributions in exhaust of steady-state plasma accelerators [NASA-CR-66550] 07 p1039 N68-16527 Relation between Eulerian and Lagrangian averages statistical theory of turbulence

07 p0988 N68-17058 Variational calculus techniques for obtaining ex-pressum conditions for problems involving optimum in-eraction of two objects with infinite velocity of signal

09 p1382 N68-18669

Velocity components of linearized perturbations in hypersonic flow over thick conical bodies without axial symmetry 09 p1327 N68-18670

Velocity of sound in hydraulic lines of complex cross

09 p1441 N68-18676 Laser velocimeter to determine point velocities in

turbulent liquid flowing in pipes [NASA-TM-X-53703] 09 p1350 N68-19078 Mean velocity distribution measurements on turbu-lent water flow in straight pipe

10 p1515 N68-19865 Direct solution of Boltzmann equation for molecular velocity distribution function of shock waves [PIBAL-1027] 10 p1517 N68-20351

Velocity profiles and static pressure measurements on liquid mercury flowing through circular chamel in presence of magnetic field [ARL 67-0256] 11 p.1759. N68-20716

11 p1759 N68-20710 Similarity methods for solving boundary layer equa-tions for determining velocity and temperature dis-tribution in two dimensional and axisymmetric heated

11 p1682 N68-20731 Temperature dependence of hypersonic velocity in acctone, benzene, ethylene glycol, glycerine, and other inuits

11 p1647 N68-20882 Solar magnetograph observation of photospheric brightness, velocity, and magnetic fields [NASA-CR-94225] 12 p1964 N68-21896

on and wind velocity rwaves 12 p1866 N68-22057 Normal pressure distribution ofiles above progressive water

Flow structure and velocity distributions in turbulent boundary layers over flut surfaces with roughness ele-ments 12 p1859 N68-22153

New two parameter family of mean velocity profiles for incompressible surbulent boundary layers on smooth walls [ARC-R&M-3463] 12 p1863 N68-22654

Numerical analysis of velocity distributions of con-fined vortex [K-1732] 12 p1863 N68-22813

Observation and study of instantaneous and time averaged velocity distribution induced by helicopter 13 p1992 N68-23995 (DCB-227)

Tabulated data on velocity distribution of upper air winds at Wallops Island [NASA-TN-D-4570] 13 p2101 N68-24028 Phase and velocity distrib adiabatic annular dispersed flow (EURAEC-1091) bution in two phase 13 p2056 N68-24287

Theoretical study of film thickness and velocity dis-ibution in two phase annular flow at adiabatic cond-

(EUR-3765.E) 14 p2240 N68-24468 Velocity and pressure distributions of diffusing jet 14 p2242 N66-24940

Turbulent structure of velocity and temperature fields in abymal layers of northwestern part of Indian Ocean 14 m2248 N68-24958

ity distribution using hot-raphic techniques 15 p2450 N68-25800 Turbulent water flow vi wire anemometer and pho [NASA-CR-61837]

rediction of flow pat-r granular materials 13 p2452 N68-26067 asticity theory applied to in rotor metering device

Structure of BBGKY hierarchy for Boltzmann gas and particle distributions [NASA-CR-75659] 16 p2646 N68-27611 16 p2646 N68-27611

Relatation of lower urde velocity distribution for fre gas into vacuum moments of jet molecular expansion of monatomic 16 p2647 N68-27662

Velocity and temperature profiles in boundary layer bove unstable evaporating film of water under in-pence of moving stream of hot gas 16 p2796 N68-27730

Experimental survey of vortex flows generated by straight wings and delta wing, and hibliography on vertex flows
[D1-82-0683]

16 p2649 N68-27887

flow through rod bundle [GEAP-54)1] tion for turbulent

16 p2704 N68-28010 lon velocity distribution nisotropy, and neutrons rium used for plasma di neutron spectra, flux, and m d-d reactions in hot dev-

[LA-TR-67-113] 17 p2950 N68-29162 e erid design method

17 p2875 N68-29466 rating highly cambered ial velocity distribution 17 p2875 N68-29475 blade grid by m IVKI-TN-371

d supersonic argon molecular beam, beam molecular collisions in free let n tree jet 18 p3125 N68-29570

tomentum, man, and heat transfer characteristics, ing and flow velocity of laminar boundary layer impinging jet 18 p3058 N68-29617

Mathematical prediction of field in turbulent shear flows o [RM-5549-ARPA] riable density velocity ariable density 18 p3060 N68-29807

Energy spectra of stream and mean velocity in study wall in turbulent pipe flow rwise fluctuating velocity of viscous sublayer along

18 p3061 N68-29977 Flow and velocity distrition near smooth wall in to aero pressure gradient [MD-20] on in turbulence produc-lent boundary layer with 18 p3064 N68-30641

Premure and velocity di sonic boundary layer accel [REPT.-8416-13-T] tion for laminar hyper-toward corner 18 p3065 N68-30847 files for nonNewto Rheology and velocity product flow through small tubes

19 p3260 N68-30874 Viscosity and velocity of mallel turbulent about flow

19 p3262 N68-31030 rns on nozzle configu oun velocity and sho ms for jet aircraft noi rations for jet aircs [D6-15071, V. 1] tion 20 p3396 N66-32196

Angular momentum effects of solar and stellar winds torque and radial profile of angular velocity for solar eld magnitudes, wand velocities, and wind desaition 20 p.3341 Velocity field peculiarities /Evershed offect/ in single

Velocity field poculiarities /Even RTS-41121 20 p3386 N68-32653 Velocity profiles in nonNewtonian fluid in helical

20 p3462 N6B-32791 Magnetic field and gas velocity in sunspon at dif-rent levels - Evershol effect in a company sunspo-

[NTS-4243] 20 p.3587 Neto-32938 Logarithmic and defect velocity profile analyses for total data friction formula of turbulent boundary layer [NPL-AERO-1252] 21 p.3500 Neto-34010 Velocity profiles for turbulent boundary layers with

Velocity profiles for turb IARC-RAM-35421 22 p3834 N68-34842

A-1367

SUB.

thro

VENU

M [P-3

T

to pr

O

T

E

E

D

TO.

VEN

VELOCITY ERRORS Normal velocity distribution on arbitrary three mensional scattering surface struck by weak acoustic REPT.-32) 22 p3972 N68-35395 Determination of velocity field and distribution at blades of rotating radial blade cascades [NEL-TT-1956] 22 p3862 N68-35509 Velocity distribution of edge enstant temperature hot wire as tone jet measured by nemometers 23 p4045 N68-36222 Laser spectroscopy del bution function of gas ation of velocity dis-23 p4071 N68-36226 Fluid velocity distribut mly packed beds os in rand [CONF-671211-1] 23 p4100 N68-36481 Vertical flux plate flow tion boundary layers 23 p4187 N68-36590 Experimental inve ressible turbulent houndary layer with [ARC-R&M-3526] 23 p4051 N68-37061 Functional analysis on oscillati sonic velocity field excited by wi [NASA-CR-97259] ting amplitude of super-ing vibrations 23 p4184 N68-37386 Liquid lead and indi aporated particle velocity 24 p4245 N68-37741 ms for velocity and flow rate fields [FTD-HT-23-615-67] 24 p4257 N68-38046 Quasi-linear equation for velocity distribution func-tion of strong electrostatic collisionless shock wave [MPI-PAE/PL-6/68] 24 p4324 N68-38128 Error elimination in velocity of light observability for spacecraft trajectory estimation problems
[NASA-TM-X-61090] 13 p2150 N68-23585 Estimation of velocity and position errors in injection sidance into circular orbit and midcourse trajectories for European space programs (ELDO-M-/66/13) 17 p2911 N68-28702 VELOCITY MEASUREMENT
NT WIND VELOCITY MEASUREMENT Anemometric performance of semiconductor flow-01 p0066 N68-10780 G-load variometer and integrator united to measure scraft vertical velocity [FTD-MT-66-26] 03 p0300 N68-12224 Air velocity profile above progressive waves in-estigated in wind and wave facility with emphasis on copagating wave influence on mean velocity profile [E-52] TR-62] Operating manual for hot wire anemometer with velocity mean product computer attachments [IIHR-105] 04 p0483 N68-13392

eximum velocities of fish movement, and re-nce coefficient changes at various Reynolds num-

UPRS-437231 04 p0599 N68-13434 Electronic instruments for recording turbulent pulsa-ns of current velocity and temperature at great (NOO-TRANS-176) 04 p0510 N68-13644

Velocity interferometer measurements of compressive and release wave shapesfine structure in aluminus 04 p0590 N68-13813

Velocity curve derived for NGC 4449 galaxy 05 p0739 N68-14916 of laser Doppler Section profit

r system for determining files of rocket sleds 06 p0852 N68-15980 relocity and a Later application in mics, cinematography, by twicoity measurements ISL-T-3 [766] chlieren photography, bul-lography, and interferomet-

07 p1004 N68-16152 Ultrannic long d shear velocities of can-07 p1007 N68-16319 Pulsed echo ula velocity measurement

(AD-663534) 08 p1180 N68-17878 Laser Dopp on for turbulent velocity

GE p1184 N&&-18099 velocity measurements of sted by wind turnels 09 p1325 N68-18444 CERST-SUTL CUB24 and distance measure 11 p1625 N68-21421

Structure analysis of spark columns for velocity mea-arement in hypersonic flow of wind tunnels 12 p1872 N68-22172

Contactless device for measuring speed of moving tetal by transformation of reflected signals in random rtal by transform RRE-TRANS-170) 12 p1873 N68-22379

Implosion driven hypervelocity projectile launcher using detonable gas mixtures
[UTIAS-TN-113] 15 p2449 N68-26714 Contributions of system parameters in Doppler method of fluid flow velocity measurement [NASA-CR-95221] 16 p2662 N68-27651

Velocity calculation for large meteors entering earths lower atmosph [LMSC-6-78-68-22]

16 p2768 N68-27888 Mean velocity and turb round channel filled w and turbulence measurement methods el filled with liquid mercury using hot [RM-414J] 17 p2889 N68-29364

Recursive digital filter for velocity estimations from P5 16 radar information WRE-TN-ISD-81] 17 p2855 N68-29446 Pressure distribution in study of axisymmetric blu ody stagnation point velocity gradient in hyperson

flow [AEDC-TR-68-99] 18 p2993 N68-29683 nents in initial section Velocity fluctuati of turbulent axisymmetric jet [TG-230-T552]

18 p3064 N68-30644 Design of toroidal stream flowmeter and vortex axis

[USAAVLABS-TR-68-11] 19 p3276 N68-31317 Convection velocity ents in viscous sublayer of turbulent cha [NPL-AERO-1251] 21 p3682 N68-34363

Propellant mixtures effects on magnetoplasma arc jet, and velocity measurements of ions and neutrals [NASA-TM-X-60513] 21 p3757 N68-34757 VELOCITY MODULATION

Stability tests on boiling water reactors, bubble hamber frequency response measurements, and sodifications of regulation circuit of velocity modula-

07 p1027 N68-16411

[EURAEC-1899] VELOCITY POTENTIALS
U FLOW DISTRIBUTION

VELOCITY PROBES U PITOT TUBES
U SPEED INDICATORS

VENEERS Annotated bibliogr products, and venners [AD-668836] phies on wood glues, glued

16 p2691 N68-27795 VENERA SATELLITES

Atmospheric temper ems according to n Vonera-4 [NASA-CR-94796] 14 p2349 N68-25586 Venera 4 design and n tmosphere, Soviet uppe nent data on Venusian phere studies, and par-

(JPRS-45888) 17 p2881 N68-29414 VENERA 2 SATELLITE

Results of observation of solar wind fluxes near earth obtained by Venera 2 and Venera 4 satellites [NASA-CR-96661] 21 p3762 N68-34158

VENERA 4 SATELLITE Data from Mariner 5 5 and Venera 4, and grow Venus atmosphere mosphere 14 p2346 N68-25045 hased measurements [NASA-CR-94774]

Venera-4 [NASA-CR-94796] 14 p2349 N68-25586 Venera 4 measuren radiation belts near Ver [NASA-CR-96118] on magnetic fields and

19 p3365 N68-31520 Results of observation obtained by Venera 2 at [NASA-CR-96661] ar wind fluxes near earth era 4 satellites 21 p3762 N68-34158

ts for evaluating radio as-tions of Venus 22 p3958 N68-34952 Venera 4 measur tronomical ground of [NASA-CR-96884]

U DH 112 AIRCRAFT VENTILATION

Ventilation in a ontact with radio (NOO-TRANS-2432) 01 p0116 N68-10944

Selectively ventilated ring wing hydrofoils
02 p0196 N68-11075 [E-138.2] Wall interference effects on dynamic meas of half-models in ventilated wind tunnels [NPL-AERO-1243] 12 p1809 N 12 p1809 N68-21903

Calculation diagram for parallel connections of mine ventilation system 13 p2048 N68-23817

Heat tolerance in men wearing impermeable clothing 14 p2200 N68-25007

and electrostatics for air clean [NYO-841-12] 8 p3116 N68-30343

ransient phenomena occurring in ventilation om of EUREX nuclear fuel reprocessing plant after an explosion (RT/PROT/68/8) 22 p3827 N68-35606

VENTILATION FANS Maximum angular acceleration characteristics of ventilating mine fam during startup 13 p2048 N68-23818

VENTING

Feasibility of venting fission gases from liquid plu-tonium alloy fuels to sodium [LA-3766-MS] 08 p1202 N68-17264 08 p1202 N68-17264 Wall temperatures and heat transfer coefficients for solid-vapor mixtures of para hydrogen and nitrogen [NASA-CR-93744] 10 p1612 N68-19799 Venting methods to eliminate moisture from sterilizable wide angle gyros [NASA-CR-94327] 12 p1873 N68-22345

Cryogenic propellant Atlas Centaur vehicles agement during cousting [NASA-TN-D-4571] 14 p2337 N68-25099

Supersonic wind tunnel tests of orifice venting haracteristics and three dimensional flow on flat NASA-CR-61241] 22 p3801 N68-35965

Design, fabrication, and testing of vented rechargea-ble silver-cadmium batteries [ECOM-03359-F] 10 p1460 N68-19805

Advanced 28 volt silver-cadmium electrical energy [NASA-CR-92042] -11 p1632 N68-21805 Computer program to determine pressure and pipe flow heat transfer in vented launch vehicle compart-ments during ascending flight [NASA-TM-X-35734] 13 p2171 N68-23988

Vent holes for reduced carbon dioxide pressure meration during foaming of polyurethane resin 3EPP-11] 23 p4068 N68-36732 GEPP-11)

Effects of acoustical disturbances and plastic foams on flame propagation in aircraft vent system [D6-58381TN] 24 p4356 N68-38481

VENTURI TURES

Cavitation characteristics of liquid hydrogen, and liquid nitrogen flow in plastic venturi [NASA-CR-72285] 05 p0647 N68-14076 Effects of Freon, water flow temperatures, and pressures on incipient venturi cavitatio [NASA-TN-D-4340] 05 p0648 N68-14641

Thermodynamic effects on Freon cavitation on venturi scale model [NASA-TN-D-4387] 06 p0825 N68-15329

Venturi tube for determ odynamic properties of termining effects of ther-of liquids on cavitation Phenomena FTD-MT-67-401 07 p0986 N68-16758 Air and water flow in converging-diverging annular enturi tube with critical and near critical conditions at

07 p0989 N68-17105 Performance of venturi meter with separable diffuser

11 p1699 N68-21384 [NASA-TM-X-1570] essions within cavities and uid hydrogen and nitrogen in

Thermodynamic depre cavitation inception in liquitansparent plastic venturi [NASA-CR-72286] 11 p1806 N68-21742 quisition and correlation Cavitation corrosion data so sing ultrasonics and venturi to

15 p2485 N68-26655 ster in wind gage for une force winds 18 p3071 N68-29715 Venturi tube and velocity measures (NCEL-TR-579) cs of venturi scrubbers 19 p3195 N68-31653 Aerodynamic charac [NPL-AERO-1235]

IDEX

-11075

21903

of mine

23817 othing

25007

lation,

30343

lation t after

35606

ics of

23818

g phy

7264

ts for rogen

9799

from

2345

5000

5965

gea-

9805

етру

805

988

Mare

732

ame

481

amd

076

res-

541

en-

329

er-

158

in

at

05 er.

84

42

on

44

15

13

Two cloud layer model of Venus atmosphere based on observed radar reflection cross section [T-492-R] 08 pt 238 N68-17480

(NASA-CR-93232) 08 p1241 N68-17891

Mechanical and microwave model atmospheres to btain Venus surface pressure and temperature dis-

08 p1242 N68-18087

18 p3163 N68-29877

s to form X band radia

18 p3164 P66-300

03 p0327 N68-12591

14 p2208 N68-23604

15 p2399 NAS-36914

16 p2619 1468-27093

16 p2625 N68-27904

10 p1500 Heat-20224

96 p0774 NEB-15865

cinity of Venus by

Differential equation for momentum transformations occurring in transient fluid flow between approach and throat pressure tap planes of venturit tabe
[WAPD-TM-735] 20 p3465 N68-33142 nries for flyby/eatry probe system for 1972 Venus Infrared emission and absorption in carbon dioxide ands for Vesus upper atmosphere temperature [NASA-CR-94406] 2-12 p1069 NSS-22994 NASA-TM-X-573461 09 p1425 N68-19199 Data from Mariner 5 and Venera 4, and ground associ measurements of Venus atmosphere NASA-CR-94774] 14 p2346 1668-25045 VENUS (PLANET) Venera-4 observation of chemical composition of nts of Venus 02 p0266 N68-11424 Micrometric measureme [P-3692] Venus atmosphere INASA-CR-93815] 10 p1593 N68-20127 Systems analysis and engineering data on Maria Venus 67, Mariner 4, Mariner Mars 69, and Survey projects, and advanced planetary missions sechemology [NASA-CR-95711] 17 p.2977 Nes8-293 Planetary temperatures of Mars, Jupiter, and Venus at wavelength of 8.6 mm obtained by radiometry [AFCRL-67-0409] 02 p0268 N68-11774 Model atmosphere of made by Venera-4 [NASA-CR-94109] 11 p1783 N68-21343 Geometric optics approach to calculating surface oughsess effects on microwave emissivity from Moon Comments on ice particles as major scatterers of in-frared radiation from Venus atmosphere [NASA-CR-94364] 12 p1967 N68-22470 Interplanetary magne flight of Venera 4 Venus [NASA-CR-95834] and Venus [NASA-CR-91355] Plasma flux measures charged particle traps on [NASA-CR-95835] 04 p0572 N68-12966 Duta from Mariner 5 and Veners 4, and ground based measurements of Venus atmosphere [NASA-CR-94774] 14 p2346 N68-25045 etric centers of Mars, Tracker for locatin tmosphere 14 p2346 N68-25045 Venus, or Jupiter (NASA-CR-731621 04 p0572 N68-13021 Atmospheric temperat Vesus according to me ure, pressure, and density of surrements obtained by AIS Velocity requirements for aborting manned missions to planets Mars and Venus [DOUGLAS PAPER-4453] [NASA-CR-94796] 14 p2349 N68-25586 craft con -05 p0738 N68-14622 Brightness temperature spectra of Venus computed to determine amount of water vapor in lower atanalysis for possible (NASA-CR-97071) Observed absence of energetic electrons and protons near Venus based on Mariner space probe data [REPT.-67-66] 06 p0904 N68-15171 Design parameters for or Mars and Venus, and comp iting topoids sounder for risons with earth critical [NASA-CR-94926] 15 p2558 N68-25873 Trajectory calculations for Venus swingby trajecto-ries, interplanetary navigation and guidance analysis, and inertial platform errors [NASA-CR-61646] 09 p1426 N68-19316 Polarimetry of ultraviolet clou [NASA-CR-95032] ds on Venus 15 p2558 N68-25884 NASA-CR-970871 22 p3966 N64-35815 ry systems for committee ry systems for committee ry, and Venna proba-23 p4107 N66-34352 Foreign literature on mi unik 10 measurements, ter actor materials, nuclear che Dust insulation model for bl radio frequency emission in atr inketing of thermal and couplere of Venus 16 p2771 N68-28328 09 p1426 N68-19316 Experiment payloads for manned space flight mis-sions to Mars and Venus [NASA-CR-93569] 09 p1427 Nasa-19354 Venera 4 design and meas atmosphere, Soviet upper at ticipation in international sp [JPRS-45888] urement data on Venusiar mosphere studies, and par-VENUS RADAR ECHOES Venus data obtained by Mariner 5 and Venus 4 obes interpreted as evidence for polar ice caps (ASA-CR-93741] 10 p1591 N68-19846 Operation of coupled antenna iterforometer to use Venus 17 p2881 N68-29414 NASA-CR-937411 ESD-TR-68-18) e model of Venus atmosphere 17 p2972 N68-29431 Nongray greenhou [NASA-CR-95734] Emission spectrum of Venus between 8 and 13 icrom observed with telescope using Michelson inter-VERBAL COMMUNICATION on magnetic fields and Venera 4 measurem radiation belts near Ven [NASA-CR-96118] Data ampler to illustrate physic perties of English spokes digits 1 t [ORO-2572-13] INASA-TM-X-632171 14 p2344 N68-24730 19 p3365 N68-31520 Investigating Venus bac on reflected radar signals [NASA-CR-94770] ckscattering by Doppler effect Exospheric temperature ferent atmospheric compo [NASA-TM-X-59785] Venus calculated for dif-Secondary signal control impulses, electrical reac-tions, and armitivity of analyses in relation to control factors and higher nervous systems in man. [NASA-TT-F-11432] 05 p0616 3602-14985 21 p3764 N68-33688 14 p2346 N68-25148 Data from radar range and Doppler observations of Venus at inferior conjunction [NASA-CR-95374] 16 p2770 N68-28254 Digitized main spectr Mars and Venus atmospi [NASA-TM-X-63332] system for analyses of Coding transfers verbal performance (AFOSR-68-0528) 21 p3772 N68-34501 Determination of astronomical unit and masses of Moon and Venus from Doppler radar tracking data ob-tained by Mariner 2 Spacecraft Calculating temperature vective boundary layers of [NASA-TM-X-59737] files in thermal and concts of m 21 p3772 N68-34551 17 p2965 N68-28351 Radio wave propagati on approximating inhom [NASA-CR-97015] Venus atmosphere based eity of refractivity 22 p3961 N68-35599 Atmospheric inferences from planetary limb darken-Diver underw (CSL/ONR-14) ICCA-TR-68-1-A) 18 p3162 N68-29718 Near infrared reflectivity of ice clouds computed and compared to observations of Venus [NASA-TM-X-61295] 23 p4172 N68-37202 Relay communication between Mariner 5 launch, voyage, and encounter with Venus 23 p4172 N68-37202 19 p3365 N68-31600 19 p3365 N68-31600 Astronomical studies in U.S.S.R. - radio emission from Venus, solar mass effect on radiation pressure, chondrite structure, Arend-Roland cornet, and stellar models [NASA-CR-96141] [DAC-36171] Twilight atmosphere and water vapor variations of ERIFICATION (PROVING) 23 p4174 N68-37415 VENUS PROBES NT MARINER 2 SPACE PROBE VERMICULITE 19 p3370 N68-32058 Chemical floculation and ion exchange on vernice-lite to decontaminate radioactive effluents [BARC-315] 11 p1633 HeB-21353 Abstracts and news items on Soviet bloc research in geophysics, astronomy, and space [JPRS-43359] 01 p0058 N68-10605 Venus radio emission measurements by optical guided telescope 19 p3362 N68-32059 VERNEUEL PROCESS Handbook tabulations on composition, topography, and environment of Mercury, Venus, and Mars (RM-420) 20 p3584 N68-32285 Engineering and scientific work on Mariner 4, fariner Venus, Mariner Mars 1969, Voyager, and Sur-Preparation of calcium easile single crystals by Ver-neul method using plasma heating [ORNL-TR-1807] 04 p0527 1688-13845 04 pas27 1468-13665 materials in Sector of veyor projects [NASA-CR-90544] Venera 4 measurements for evaluating radio as-tronomical ground observations of Venus [NASA-CR-96884] 22 p3958 N68-34952 02 p0272 N68-11643 Mission planning for 1976 perihelion maneurer Mars flyby, 1978 free return Venus/Mars flyby, and 1978 gowerd Venus/Mars flyby [DOUGLAS PAPER 4446] Crystal growth of refractory to 13 p2131 3068-23091 - proposed Venus coor-VERNER ENGINES U CONTROL ROCKETS 06 p0907 N68-15087 23 p4174 N68-37399 ERONIQUE BOCKET VEHICLES Soviet news item on Venus 4 design, launching. flight, and landing and measurements data on Venusian Scientific questions and experimental design for anetary exploration of Jupiter, Mars, Mercury, and Characteristics and performance of French hund-vehicles and according receive in testing questions equipment [NT-9/64/EN] 10 p1599 568-2023 (NASA-CR-97317) atmosphere (RAE-LIB-TRANS-1264) 24 p4341 N68-37875 06 p0916 N68-15304 VENUS ATMOSPHERE. Planning handbook for mission system for Mars as (NASA-CR-66539) ble manned planetary on flights UP p1435 N68-19142 Soviet news item on Venus 4 design, launching, ght, and lunding and measurements data on Venusian [RAE-LIB-TRANS-1264] Venus lander probe for m INASA-CR-93475) ed flyby missions 09 p1437 N68-19232 06 p0916 N68-15304 VERTERAL Model atmosphere of Ven made by Venera-4 [NASA-CR-94109] Mars and Venus atmospheres as working fluids in gas trbines and liquid oxidiaers for rocket engines 08 p1236 N68-17356 d on man Dynamic strength studies on human vertebras for prelation with data on effects of fractisk ejection and destable according 11 p1783 N68-21343 NASA-CR-92541]

Pyrotechnic shock to

Systems engineering as nd program schedule for

Structural design, systems and subsystems requirements, entry probe configurations, and transfer train

[NASA-CR-94152]

[NASA-CR-94234]

Mariner Venus 67 flight

11 p1790 N68-21760

12 p1964 N68-21888

mstraints, cost estimates us flyby/entry probe mis

VERTERRAL COLUM

tof b

SUL

hose [No. 1] take [No. 2] take [No. 2] take [No. 2] take [No. 2] take [US

dete coni [US

cont [RE

Jet' recirci [NAS. SpecVTOL [R-144 Gen determ study [R-144 mates aircraf [R-144 Opti charact vehicle [BBN-

VERTICAL AIR CORRENTS		SUBJECT INDEX
NT CATTLE	Ozonesonde observations over North America	Performance prediction and stress measurements on
NT CHICKENS NT CHIMPANZEES	[AFCRL-64-30, V. 4] 11 p1693 N68-21653	isolated VTOL-type propeller blade tested in free air [CAL-BB-1846-S-2] 03 p0299 N68-11962
NT DOGS	Altitude distributions of and airglow emissions by certain oxygen and nitrogen metastable constituents	
NT DOLPHINS NT FISHES	[NASA-CR-94130] 11 p1694 N68-21756	Scale model test conducted on spray alleviation device for pilot visibility from VTOL air/sea craft near
NT FROGS	Determining vertical distribution and total amount of	ocean surface [TAR-TR-6704] 03 p0300 N68-12243
NT GROUND SQUIRRELS NT GUINEA PIGS	atmospheric ozone from outgoing infrared radiation [NASA-TM-X-63218] 14 p2247 N68-24763	Operational temperature offects on vertical takeoff
NT HUMAN BEINGS	Smooth, superpressure, spherical balloon for mea- suring vertical wind profiles	aircraft structure 03 p0300 N68-12278
NT MAMMALS	suring vertical wind profiles 17 p2876 N68-28433	Comparative evaluation of interference factor cor-
NT MICE NT MONKEYS	Vertical incidence ionomberic data obtained from	rections in wind tunnel tests on vertical takeoff aircraft
NT POCKET MICE	ionospheric soundings in Thailand	models [NASA-TM-X-60772] 04 p0432 N68-13016
NT RABBITS NT RATS		VTOL aircraft noise as related to size and power of
NT SNAKES	Vertical temperature correlations and applicability	various lifting systems
Quantitative analysis of solar radiation absorption by	in characterizing temperature distributions in large physico-geographical regions and Northern Hemi-	04 p0439 N68-13018
vertebrate tissue using spectrophotometric technique 13 p1997 N68-23083	[M-7207] 20 p3470 N68-32668	Wind tunnel tests of VTOL models with fan lift en- gines
Response mechanisms and spectra for color coding	Specific yield functions calculated for IGY neutron	04 p0440 N68-13[19
in vertebrate retina studied with intracellular elec-	counters	Power effects on two fan in fuselage vertical takeoff
(J-228-6) 15 p2396 N68-26332	[BSR-2302] 21 p3687 N68-34639	fighter aircraft 04 p0442 N68-13206
ERTICAL AIR CURRENTS	Cosmic ray vertical distribution and flux density measured by fluorescer-photomultiplier radio	Inlet measurements by intake systems on vertical
Gust and maneuver acceleration fractions, and flight	telescope	takeoff aircraft models
loads for light aircraft	[UCID-15324] 22 p3881 N68-35991	04 p0442 N68-13244
[NASA-TM-X-61082] 13 p1991 N68-23315	Atmospheric model for calculation of vertical wind profile in boundary layer	Interference lift between helicopter rotor blade and fuselage and wing in hovering and forward flight 04 p0442 N68-13246
Global observations of tropical disturbances and	[FTD-HT-23-804-67] 24 p4253 N68-38260	04 p0442 N68-13246
[REPT114] 13 p2099 N68-23661	VERTICAL FINS	Economic and suitability comparison of short haul
Wave structure relation to clear air turbulence ob-	U FINS	transport aircraft concepts [NASA-CR-986] 04 p0444 N68-13517
served in U-2 aircraft over Sierra Nevadas [AFCRL-68-0001] 13 p2101 N68-23996	VERTICAL FLIGHT	Quantitative terrain study of vertical takeoff aircraft
	Calculating rocket vertical flight performance using Newtons law to compute acceleration	[CAL-VE-2303-D] Quantitative terrain study of vertical takeon aircraft landing site distributions and effects on penetration [CAL-VE-2303-D]
Statistical analysis of repeated acceleration and im- pact feath on airline transports	Newtons law to compute acceleration [NASA-TM-X-52390] 07 p1086 N68-16891	[CAL-VE-2303-D] 04 p0445 N68-13824
[NASA-TN-D-4586] 14 p2183 N68-24476	Supersonic transport vertical flight path control problems in terminal area	Aerodynamics of wing planforms and vertical takeoff aircraft - jet lift system effects, lift augmentation for
Conservation equations to describe behavior of con- vective elements in rotating medium.	Problems in terminal area [NASA-TM-X-59047] 16 p2637 N68-27544	rectangular wing, and design of recoverable rockets
[ARL-1524-5] 16 p2796 N68-27971	VERTICAL LANDING	with parawings
Capability and procedure for direct measurement of	Thrust for control of VTOL aircraft in hover	
vertical air currents using FPS-16 radar/ jimsphere	[NASA-TM-X-60451] 14 p2186 N68-25341	Aerodynamic interference effects of jet lift system on vertical takeoff aircraft
[NASA-CR-61232] 17 p2848 N68-28625	VERTICAL MOTION	05 p0603 N68-13985
Thunderstorm rotation about vertical axis caused by	G-load variometer and integrator united to measure	Effects of helicopter and VTOL aircraft downwash
vertical shear in low level wind inflow and correlation	[FTD-MT-66-26] 03 p0300 N68-12224	(USAARU-68-3) 06 p0772 N68-15180
with severe weather occurrence [ERLTM-NSSL-38] 17 p2908 N68-29061	Vertical motions in upper mesosphere and lower	
Model study on cumulus and small scale exchange	thermosphere deduced from rocket measured tempera.	Mathematical model for interpreting pilot opinion and selection of optimum control sensitivity for VTOL
processes in hurricanes	tures and infrared heating rates [NASA-TM-X-60767] 04 p0500 N68-13279	aircraft hovering task 06 p0785 N68-15933
[PB-178529] 21 p3716 N68-33898	Anomented Fourier polynomials for mathematical	
ERTICAL DISTRIBUTION NT STAR DISTRIBUTION	representation of vertical profiles for horizontal wind velocities	Binocular photographic data on external visibility criteria for VTOL aircraft
Perturbation method for inverting radiative heat	[NASA-CR-61195] 09 p1332 N68-18486	[AFFDL-TR-67-27] 07 p0935 N68-16516
transfer equation to obtain vertical constituent distribution in planetary atmospheres [NASA-TM-X-63021] 01 p0134 N68-10169		Wind tunnel study of lateral and directional aerodynamic characteristics of powered four-duct
[NASA-TM-X-63021] 01 p0134 N68-10169	lonospheric data obtained at Freiburg by vertical echo sounding for May 1968 [REPT263-F] 20 p3467 N68-32417	aerodynamic characteristics of powered four-duct propeller VTOL scale model in transition
Vertical wind profiles at Round Hill and heat budget estimates at earth-air interface	[REPT263-F] 20 p3467 N68-32417	[NASA-TN-D-4343] 07 p0936 N68-17023
estimates at earth-air interface [ECOM-65-G10, V. 5] 03 p0339 N68-12056	[REPT264-F] lonospheric data obtained at Freiburg by vertical echo sounding for June 1968 [REPT264-F] 20 p3467 N68-32418	Flight simulator studies of fixed wing and vertical takeoff aircraft handling qualities
		08 pl112 N68-17463
Tabulated vertical profiles of mean wind speed and air temperature and turbulence statistics of lower at-	Extension of Burmester theory to three dimensions,	Longitudinal stability characteristics of dynamic
moughere	and application to study of finite spatial displacement of four degree of freedom helicopter-type motion 24 p4347 N68-37600	scale model of four propeller tilt wing vertical takeoff aircraft
[ECOM-65-G10, V. 2] 03 p0339 N68-12385	24 p4347 N68-37600	[REPT774] 08 p1114 N68-17768
Spectra of atmospheric turbulence and applicability of similarity theory to vertical spectra	VERTICAL PERCEPTION	Design theory and experiments for aerodynamic in-
04 p0501 N68-13589	Simulation methods, and instrumentation to study	tegration and propulsive efficiency of VTOL and V/STOL aircraft
Radiometer for measuring tropospheric vertical tem-	human reflexes to posture and position changes during flight simulation	11 p1778 N68-21671
AFCRL-67-0548] 05 p0652 N68-14441	04 p0461 N68-13188	Conference proceedings on fluid dynamics of rotor
	VERTICAL STABILIZERS	and fan supported aircraft at subsonic speeds
Comparison of momentum and energy balance methods of computing vertical transfer within crops	U STABILIZERS [FLUID DYNAMICS]	
ECOM-2-67I-1] 06 p0773 No8-13480	VERTICAL TAILS U STABILIZERS [FLUID DYNAMICS]	Aerodynamic characteristics of large scale V/STOL powered with lift fans in transition flight
Mean wind gradients and spectral measurements at	U TAIL ASSEMBLIES	12 p1816 N68-22498
Mean wind gradients and spectral measurements at brookhuven National Laboratory BNL-11889] 07 p1019 N68-16807	VERTICAL TAKEOFF	Mathematical model of jet deflection in cross flow 12 p1813 N68-22499
Infrared interferometer spectrometer techniques for obtaining data on vertical humidity profiles in tropo-	Vertical, and horizontal launch comparisons for	Wind tunnel stability tests of VTOL models with lift
obtaining data on vertical humidity profiles in tropo-	reusable space flight systems (BMWF-FB-W-67-16) 06 p0917 N68-15869	fan engines with A month on representation delegation
08 p1174 N68-18097	Design criteria for V/STOL aircraft flight simulaturs	12 p1816 N68-22500
Experimental design for measuring vertical tempera- ure distribution in vicinity of 4.3 micron carbon diox-		Wind tunnel tests of VTOL aircraft models with
ure distribution in vicinity of 4.3 micron carbon diox- de band	Acoustic near field measurements of model air jet simulating vertical takeoff	fuselage mounted air intakes during hovering and transition phases
08 p1198 N68-18109	[D2-2463] 20 p3398 N68-32217	12 p1813 N68-22501
Linear and sonlinear temperature inversion methods	VERTICAL TAKEOFF AIRCRAFT	Lift fan performance characteristics in two and three fan in fuselage VTOL fighter aircraft
or rocket plume technology, and vertical temperature wolle determinations	NT. FLYING PLATFORMS	Tan in fuselage VTOL lighter streraft 12 p1816 N68-22502
vofile determinations 08 p1260 N68-18112	NT SC-1 AIRCRAFT NT XC-142 AIRCRAFT	VTOL aircraft noise
	Wind tunnel tests of deflected slipstream cruise fan	12 p1816 N68-22504
Thermodynamic properties of Martins atmosphera		Optimum control calculations for vertical takeoff
Thermodynamic properties of Martian atmosphere with respect to vertical profiles of composition, tem-	V/STOL aircraft wing	Committee Control to Territoria Indiana
Thermodynamic properties of Martian atmosphere with respect to vertical profiles of composition, tem- serature, number density, and pressure	V/STOL aircraft wing [NASA-TN-D-4262] 02 p0157 N68-11036	aircraft trajectories
UF \$1421 NES-18842	V/STOL aircraft wing [NASA-TN-04262] 02 p0157 N68-11036 Northeast Corridor VTOL airbus operations with respect to weather conditions as observed from 1944.	INASA-TT-F-11636] 13 p1991 N68-23514 Interference ground effects in deflected lifting sir
Thermodynamic properties of Martian atmosphere with respect to vertical profiles of composition, temperature, number density, and pressure 9 p1421 N68-18845 Vertical temperature and wind profile effects on atmospheric diffusion of radioactive contaminants 11 p173 N88-21530	V/STOL aircraft wing [NASA-TN-D-4262] 02 p0157 N68-11036 Northeast Corridor VTOL airbus operations with respect to weather conditions as observed from 1944- 1958 03 p0361 N68-11922	aircraft trajectories

EX

962

243

eoff

278

cor-

016

r of

018

en-

119

Ros

206

tical

244

and

246

haul

517

raft

824

982

n on

985

vash

180

nion TOL

933

ility

516

duct

1023

tical

463

1768

c in-

671 otor

2486

TOL.

2498

w 2499

h lift

2500

with

2501

bree

2502

2504

teoff

3514

g air

3519

Dynamic response criteris for helicopter and V/STOL aircraft simulator trainers [NAVTRADEVCEN-1753-3]

13 p2049 N68-24052 Stability and control of vertical takeoff aircraft in

[NGTE-R-297] 14 p2184 N68-24847 Fuel consumption and weight analysis for vertical takeoff aircraft propulsion characteristics [NASA-TM-X-60507] 14 p2338 N68-25279

Basic characteristics of propeller, fan, and jet V/STOL aircraft [NASA-TM-X-59740]

15 p2384 N68-25879 Longitudinal stability characteristics of tilt wing ver-tical takeoff aircraft [USAAVLABS-TR-66-64]

15 p2387 N68-26700 Theory and computer application of method for determining aerodynamic characteristics of fan in wing configurations Configurations
[USAAVLABS-TR-67-61A, V. 1]
15 p2382 N68-26770

Effects of surface winds and waves on stability and control characteristics of hovering airplane [REPT.-2-55400/8R-6140]

16 p2587 N68-27138 Optimization of VTOL control concepts and com-arison on aix degree of freedom motion simulator NASA-TM-X-59065] 16 p2637 N68-27419 parison on six degree of freedom m [NASA-TM-X-59065]

Operational aspects of steep VTOL approaches as determined by helicopter tests under simulated instru-mental flight rules conditions [NASA-TM-X-60457] 16 p2588 N68-27550

NASA research program on vertical and short takeoff and landing aircraft, including transports, helicopters, and tactical fighters [NASA-TM-X-59964] 16 p2589 N68-27806

Optimum values of pitch rate damping, longitudinal control and speed stability for vertical takeoff aircraft helicopters/ using pilot ratings [NASA-TN-D-4624] 16 p2590 N68-28153 16 p2590 N68-28153

Exhaust gas ingestion characteristics and induced prodynamics for vertical takeoff lift engine fighter model in ground proximity [NASA-CR-1098] 16 p2590 N68-28233

Hot-gas ingestion inve VTOL fighter type models [NASA-TN-D-4609] tigation of large-scale jet 16 p2591 N68-28277

[NASA-IN-DEADLY]
Engine thrust vectoring and thrust modulation for control of V/STOL aircraft during hover 17 p2806 N68-28856

VTOL conference pap on noise reduction and fluid dynamics problems (AGARD-CP-22, SUP.) 17 p2807 N68-28988

VTOL noise level problems at city center terminals, and techniques for reducing rotor and engine noise 17 p2808 N68-28990

Simulation study of air terminal traffic control with troduction of vertical and short takeoff and landing aircraft [NA-68-21] 17 p2912 N68-29057

Dynamic model of on-off control systems for auto-matic attitude control system of VTOL aircraft [NAL-TR-142] 17 p2865 N68-29260

Dynamic model for study of pilot performance in vertical takeoff and landing and other types of aircraft [NASA-TT-F-11844] 18 p3014 N68-30189

Feasible weight reducing propeller systems for verti-cal takeoff aircraft [USAAVLABS-TR-68-33]

19 p3197 N68-30964 Jet VTOL aircraft inlet temperature rise and induced recirculating flow patterns [NASA-CR-1147] 20 p3392 N68-33043

Specific aircraft demand determined for city pairs in VTOL intercity passenger transportation study [R-144, V. 4] 21 p3624 N68-33937

Generalized aircraft requirements for city pairs etermined in intercity VTOL passenger transportation

[R-[44, V. 3] 21 p3624 N68-33938 Factors affecting demand and cost function esti-tates for intercity passenger transportation by VTOL

(R-144, V. 2) 21 p3624 N68-33939

Methods and results of demand study for intercity passenger transportation by VTOL aircraft [R-144, V. 1] 21 p3625 N68-33940 Optimal control method for predicting control haracteristic and display requirements of manned (BBN-1559) 22 p3804 N68-35275

Lateral-directional stability characteristics of four-propeller tilt-wing VTOL aircraft model for predicting performance of XC-142 aircraft [REPT.-743] 22 p3805 N68-35391

Wall jet wind tunnel tests in two dimensional flow ed to simulate ground effect of vertical takeoff air-[AD-673200] 22 p3806 N68-35705

Wind tunnel tests of a VTOL jet fighter to determine aerodynamic characteristics including stability [NASA-TN-D-4812] 23 p3983 N68-36081

Selection of optimum thrust-weight ratio of lift en-gines for VTOL aircraft [FTD-MT-24-358-67] 24 p4196 N68-37024 VERTICES

U APEXES VERTIGO

Dizziness and vertigo in aircraft pilots [SAM-TR-67-60] 03 p0306 N68-12376 Flicker induced vertigo from painted rotor blades of UH-1 helicopter-flight tests [USAARU-68-11] 21 p3636 N68-34420

VERTOL MILITARY HELICOPTERS

U MILITARY HELICOPTERS

VERY HIGH FREQUENCIES

Techniques for generation and detection of very high frequency acoustic waves in solids [NASA-CR-91338] 04 p0557 N68-13261

Tabulations of VHF propagation data over mountainous terrain at 20, 50, and 100 MHz [IER-38-ITSA-38-2] 06 p0798 N68-15343 06 p0798 N68-15345

Propagation characteristics of equatorial ionosphere measured between magnetically conjugate points at

08 p1173 N68-17984 VHF transmissions from geostationary satellite used determine ionospheric electron content associated with magnetic storm INRL-MEMO-18581 15 p2461 N68-26319

e and very high frequency Wireless com transmission system (FTD-MT-64-428)

16 p2618 N68-27000 Coaxial cables for carrying interferometer signals at very high frequencies under different environmental [RAE-TR-66323] 18 p3032 N68-29597

Automatic communication at very high frequent on by tropospheric propaga-cies with aircraft operating OVER OCEAN EN 19 p3242 N68-31724

angenal isolation of antipo antennas on large jet aircraft [D6-23291] lly mounted VHF-UHF 24 p4229 N68-38227

VERY HIGH FREQUENCY RADIO EQUIPMENT

Goddard range and range rate system performs while tracking IMP-F [NASA-TM-X-63040] 02 p0182 N68-11 02 p0182 N68-11651 Antenna design and very high frequency repeater ex-periment carried on applications technology satellite for voice communications (NASA-CR-90307) 02 p0272 N68-11831

02 p0272 N68-11831 Propagation characteristic radiation patterm of long, me tennas, and ultrashort wave a [JPRS-43651] cs, design concepts, and edium, and short wave an-

03 p0324 N68-12753 odel sirline type precision VOR Engineering model airti receiver system for testing in nirange navigation systems (RD-67-53) 06 p0800 N68-15813

Tabulated VHF propagation data as obtained over irregular terrain in Ohio at 20, 50, and 100 MHz [IER-38-ITSA-38-3] 13 p2028 N68-23839

Performance degradation stellite-to-aircraft commi on of VHF radio frequency multipath propagation fade eff 15 p2425 N68-26174 radiation patterns

ELDO launch vehicle antes (ELDO-RFI-5, APP. 1, V. 2) 17 p2848 N68-28526 **ELDO** launch vehicle anter radiation patterns for AJAX TM 2 aerials (ELDO-RFI-5, APP. 1, V. 4)

17 p2849 N68-28644 ELDO isunch vehicle anter (ELOG-RFI-5, APP. 1, V. 5) radiation patterns

17 p2849 N68-28649 ELDO launch vehicle anten a radiation patterns for AJAX TM I aerials IELDO-RFI-5, APP. 1, V. 3] 17 p2849 N68-28650

ELDO launch vehicle ante (ELDO-RFI-5, APP. 1, V. 6) rediation patterns 17 p2849 N68-28713 ELDO hunch vehicle anten (ELDO-RFI-5, APP. 1, V. 1)

19 p3237 N68-31239 ring di Engineering design data on vehicle-borne subsystems of airborne range and orbit determination system [NASA-CR-61900] 19 a3236 M68-31327

Engineering design concepts for airborne range and orbit determination transponder station, and test equipment for vehicle and transponder checken. [NASA-CR-61901] 19 p3238 N68-31328 19 p3238 N68-31328

Electrical characteristics of capacitive coupling type oaxial switch for application in very high frequency 23 p4032 N68-36965

Evaluation of adaptively ph sed large sperture array at very high frequencies : [NASA-TM-X-63360] 23 p4823 N68-37210

VERY LOW PREQUENCIES

Satellite observations of very low frequency mag-etosphere emission and association with energetic charged particles [NASA-CR-89967] 01 p0130 N68-10067

Field strength pro on of very low frequency mul-(NRL-6663) 08 p1147 N68-17871

Very low frequency ground station transmitter ob-servations of whistler mode signals in OGO satellites 09 p1336 N68-19310

Very low frequency ray tracing in model ioncorbere 10 p1520 N68-19734

Phase velocities for ELF and VLF wave propagation below anisotropic ionosphere [RR-548] 10 p1498 N68-20063

Solar flare effects and very low frequency radio wave observations of lower ionosphere [RAE-TR-67201] 10 p1588 Nes-20487

Very low frequency electromagnetic wave propaga-tion in earth iomorphere waveguide (AD-65599) 11 p1891 N68-21354 FORTRAN program for very low frequency mul-timode propagation predictions (RRL-MEMG-189) 11 p1664 N68-21590 Use of composite signals at very low radio-frequen-cies

[TR-552] 11 pl664 N68-21610 Relationships between ourors and natural VLF and LF noise in antarctic region [SU-SEL-68-016] 13 p2061 N68-23699 13 p2061 N68-23699

Radio receiver to track phase modulated very low (RAE-TR-67258) 14 p2222 N68-24969

Very low frequency electric and magnetic fields in ionosphere observed by Javelin 8.45 [NASA-CR-94757] 14 p2249 N68-25186 14 p2249 N68-25186

Electromagnetic wave propagation in lithoushere ice, and water - radio communications, electric properties, electrical measurements, antenta efficiencies, an mathematical models [AGARD-CP-20] 14 p2223 N68-25187 14 p2223 N68-25187

Attenuation rate of very low radio frequency waves opagating over Antarctic region 14 p2224 N68-25201

Wave propagation at very low frequencies 14 p2225 N68-25205 Extremely low frequency as with mode communications by

nd ultra low frequency dipole nationals 14 p2225 NAS-25210 g at very low frequ

14 p2251 N68-25213 al models on we based on waves on very low frequency war-

15 p2(21 N68-25780 of field structure of dipole Frequency dependence transmitter in conducting ((AFCRL-68-0174)

15 p2429 N68-26954 Propagation of very low frequency radio waves along agretic equator

16 p2735 N46-27323 Very low frequency ele ctrical earth conductivity REPT.-80133F-21 18 p3070 N68-38843

Engineering design of transponder system for phonoconcreted of very loss frequency against NASA-CR-619221 17 p.3238 NAS-31296

Extremely low and very low frequency radio naises observed by satellites in icomphere [NASA-CR-93954]: 19 p3271 N48-34414 influence of opheric cy radio wave propaga (JPRS-46273) ity of earth on very low frequen

A-1371

Data correlation of Explorer 20 observations of elec-tron density irregularities with OGO-2 VLF hiss obser-vations, and satellite experiments to determine auroral eval position [R-3] 21 p3683 N68-33625 Extremely low and very low frequency waves in pherical waveguide between earth and ionosphere rth and ionosphere 21 p3661 N68-34486 [RR-554] Extremely low and very low frequency fields of horizontal electric dipole between earth and iono-21 p3662 N68-34498 es and interpretation of VLF emissions Properties and interpretation manating from magnetosphere 21 p3687 N68-34646 Electrical impedance of LOFTI 2A very low frequen-antennas in ionosphere (NRL-6712) 21 p3662 N68-34723 Lane identification in Omega system /long range, dio navigation/ 22 p3909 N68-35477 very low frequency hyperbolic rad [NRL-MEMO-1876] Injum 3 satellite spectrophotographic analysis of VER-334/7 hoise emissions during magnetic storms, and assessment of relationship between variations in emission and mergetic electron has a proper section of the company of the comp energetic electron flux [NASA-CR-97313] 24 p4339 N68-37725 VESSELS Nondestructive ultrasonic tester and testing procedure for isotope heat source containers [BNWL-649] 17 p2895 N68-29311 Current speed, temperature, and sali by Dunish light vessels and coastal station ure, and salinity measured 19 p3271 N68-31514 VESTIBULAR TESTS Electrical control of human vestibular responses to VESTIBULES 04 n0455 N68-13199 Electronically controlled vestibular device to studhuman response to dynamic linear acceleration from the counterrotation [NASA-CR-91677] 05 p0614 N68-1432 05 p0614 N68-14329 on occurring from cathodically or Vestibular escitation 08 p1127 N68-17545 Analog analyzer for productive date of ter for producing duration, amplitude, tof nystagmus beat in vestibular tests 09 p1287 N68-18619 and velocity data of [USAARU-68-4] Biological, medical, and engineering studies for named space flight - acceleration stresses, human skerances, space flight feeding, protein metabolism, all life support systems. PRS-44732] 09 p1280 N66-18906 Hypoxia effects on vestibular dynamics in rats at low mospheric decompression 09 p1281 N68-18913 Design, and performance of Barany chair for calibrated acceleration studies on human vestibular 09 p1289 N68-18924 Analytical model of canal in linear acceleration fields [NASA-CR-93544] dicular response to rotation 09 p1283 N68-18951 ence of otolith organs on visual horizontal per-[NASA-CR-93657] 09 p1284 N68-19295 Test apparatus design for measuring and readout of systematic counterroll in zero G sircraft, and results ob-tained with humans and monkeys. 10 p1462 N68-19842 Cross validation of brief vesti-oring pilot training administers estibular disorientation test stered by variety of person-NASA-CR-93836] 10 p1476 N68-20125 High linear accelera ns effects on vestibulo-ocular SAME TR 67-93 10 p1469 N68-20471 13 p1998 N68-23244 Effects of deep depr on responses to vestibu-13 p2000 N68-23619 od spec ng, and conditioning

14 p2204 N68-24634

16 p2603 Ne8-27156

ijuct orientation effects stary eye motion 16 p2605 N68-27794

and centrifuge design to

Vibration, acceleration, and ionizing radiation effects on functions of vestibular analyzer [NASA-TT-F-11503] 16 p2601 N68-28064 Subject orientation effects of vestibular stimulation on task performance and involuntary eye motion 17 p2831 N68-29132 Physiological responses of cardiovascular system, au-tonomic reactivity, and intercranial blood flow to vestibular simulation 17 p2825 N68-29151 Fitzgerald-Hallpike caloric test of vestibular function VFR [RULES]
U VISUAL FLIGHT RULES 17 p2825 N68-29155 Eye marker recording instrument for study of eye overment and vestibular function 17 p2825 N68-29156 Pathological changes and morphology of squirrel sonkeys determined in screening for vestibular func-[NASA-CR-96199] 20 p3404 N68-32424 (RD-67-22) Combined effects of vibration and gamma radiation n vestibular apparatus of guinea pigs 20 p3408 N68-33286 Experimental requirements for measuring vestibular and cardiovascular physiology responses using orbital onboard human centrifuge during Apollo Applications Program INASA-CR-666511 20 p3413 N68-33298 Analysis and equations for role of angular accelera-on in vestibular stimulation 21 p3637 N68-34656 IRP-5651 Oculogyral illusion and vestibular thresholds for ross-coupled acceleration exposure in relation to Apollo Applications [NASA-CR-66684] 22 p3816 N68-35155 d vertigo in aircraft pilots 03 p0306 N68-12376 Dizziness and ve [SAM-TR-67-60] Simulation methods, and in sulation methods, and instrumentation to study in reflexes to posture and position changes during VIABILITY 04 p0461 N68-13188 Slow rotation chamber studies of physiological ef-fects of centripetal and coriolis accelerations on human vestibular analyzers VIBRATION 08 p1132 N68-17755 Physiological effects of weightlessness on human and nimal vestibular and autonomic analyzers 08 p1132 N68-17756 FLUTTER FORCED VIBRATION FREE VIBRATION NT FREE VIBRATION
LATTICE VIBRATIONS
LINEAR VIBRATION
MISSILE VIBRATION
PANEL FLUTTER
RANDOM VIBRATION
RESONANT VIBRATION
RESONANT VIBRATION
ESTERNINGER AND AND AST Nystagmic respons cariolis stimulation [SAM-TR-67-85] se of human vestibular system to 10 p1464 N68-20060 Adaptation to prolonged constant angular accelera-[AMRL-764] 11 p1636 N68-21397 Astronaut training, vestibular apparatus condition-ing, and circadian rhythm disruption during interplane-tury flights [JPRS-45478] 14 p2204 N68-24633 14 p2204 N68-24633 Barany chair rotation tests to determine role of vestibules in spatial orientation during weightlessness 17 p2819 N68-28514 Conference proceedings on role of vestibular organs in space exploration [NASA-SP-152] 17 p2821 N68-29128 Vestibular end-organ dan after exposure to intensive lin rage in squirrel monkeys lear acceleration 17 p2821 N68-29134 Morphology and development of vestibular and credition appellacts 17 p2822 N68-29137 Systematic analysis of neural response charac-teristics in vestifistlar nuclei NASA-CR-91681] 17 p2822 N68-29139 Nerve endings in maculae and cristae of chinchilla vestibular labyrinth 17 p2823 N68-29140 Pattern and distribution of efferent vestibular inner-vation to labyrinth studied by axon degeneration techniques Mechanical, acoustic, and ultrasonic vibrations in 06 p0923 N68-15985 17 p2823 N68-29141 Nonlinear mechanical systems, machine vibration, and machine element studies Efferent innervation of vesti study of cochlear receptors tular receptors based on 06 p0923 N68-15991 17 p2823 N68-29142 Optimization techniques for solving nonlinear vibra-tion problems on digital computer omical relationship of cerebellum to vestibular complex, and cytological features of nuclei in ar and fastigial regions 08 p1248 N68-17513 17 p2823 N68-29143 Turbulent boundary layer induced vibrations of stainless steel ribbon Techniques for examination of controlling echanisms of vestibular reflex arc due to rotary and

17 p2825 N68-29153

SUBJECT INDEX Linear acceleration influence on vestibular nystag-mus and postulation of simple model based on otolith contribution 17 p2825 N68-29154 Fitzgeruld-Hallpike caloric test of vestibular function 17 p2825 N68-29155 Triaxial multiple channel accelerometer module for vestibular stimulation measurements in aircraft [NASA-CR-96298] 20 p3410 N68-32734 VRF OMNIRANGE NAVIGATION Engineering model airline type precision VOR receiver system for testing mulilobe precision VHF ommirange navigation systems [RD-67-53] 06 p0800 N68-15813 Control, display, and recording console for Signal Evaluation Airborne Laboratory flight inspection 07 p1021 N68-16243 Weather effects on VHF omnirange navigation monitor detectors [NA-67-10] 07 p0998 N68-16713 Precision VHF omnirange digital signal generator handbook [RD-67-58, V. 2] 09 p1305 N68-19298 Operating specifications, monitor tolerances, and flight test computer program for precision multilobe VHF omnirange travigation systems [RD-67-58, V. 1] 09 p1373 N68-19302 Computer program for error analysis and per-formance of Vortac in ice and snow environment [SRDS-RD-68-3] 11 p1737 N68-20757 [SRDS-RD-68-3] 11 p1737 N68-20757 Helicopter flights along selected VOR routes under simulated IFR operations to assess vertical and lateral flight technical errors 23 p3990 N68-36652 Ultraviolet radiation effects on viability of microorganisms in ionosphere and stratosphere [BMWF-FB-W-68-09] 13 p2002 N68-24091 BENDING VIBRATION BREATHING VIBRATION COMBUSTION VIBRATION SELF INDUCED VIBRATION STRUCTURAL VIBRATION SUBSONIC FLUTTER SUPERSONIC FLUTTER TORSIONAL VIBRATION VIBRATIONAL STRESS VIBRATORY LOADS Thermoluminescent dosimeters of lithium borate and common areas of experimental mechanics and structive testing in shock and vibrati nd vibration 04 p0599 N68-13068 Common areas of experimental mechanics and non-destructive testing in shock and vibration 04 p0587 N68-13070 Vibrational characteristics of this shells - review of analytical methods, fabrication methods, and publications 05 p0747 N68-14199 Jitter due to noise in nuclear event timing systems [AERE-R-5561] 06 p0815 N68-15513 Fluid mechanics, vibration, electromagnetism, netallurgy, and electronic equipment 06 p0931 N68-15982

14 p2242 N68-24938

Flow induced vibration of plate in narrow channels [NASA-TM-X-59605] 14 p2359 N68-25295

SUB

the

IN

VIRE

[A

in

(NASA-CR-85177)

DEX

-29154

Inction

29155

ule for

32734

VOR

F om-

15813

Signal

6241

gation

6713

erator

9298

9302

per-

0757

nder

5557

1991

68

70

13

12

15

tion of pow

ion techniques for

-

Solving problem of circular plate vibrations due to 18 p3174 N68-29648 Modified vibration transducer calibration system for directly producing sensitivity versus frequency range plots NASA-TN-D-47601 19 p3281 N68-31958 Side to side head vibration effects on visual acuity measurements [NASA-CR-96466] 20 p3411 N68-33093 Effects and control of chatter in machine tool 20 p3490 N68-33314 QTR-3)
On-line digital data system for use in research program, and data analysis of random noise and vibration
on Marconi Myriad 2 digital computer
21 p3785-N68-33804 Aircraft vibration due to aerodynamic forces (NASA-TM-X-61206) 21 p3626 N68-34571 Human discomfort, expos vibration environment consi ty evaluation technique osure time, and variation of sidered in aircraft ride quali-[ASD-TR-68-18] 23 p3989 N68-36338 Vibrations of shells in compressible and incompressi-(FTD-HT-23-1003-671 24 p4350 N68-38163 VIBRATION DAMPING Rotational vibration damping of beams embedded in viscoelastic material [AFML-TR-67-233] 01 p0143 N68-10601 High frequency structural damping due to riveted ints associated with gas pumping between over-[NASA-CR-954] 02 p0276 N68-11489 Test rig for mean ring oscillatory derivatives in high 08 pl111 N68-17457 Damping of piezoelectric quartz crystal driven in tor-sional mode of vibration in liquid helium 3 and helium 08 p1223 N68-17594 [NASA-TN-D-4381] Damping effects of ring-spoke baffles on acoustic wave instabilities in rocket combustion chamber [NASA-CR-93262] 08 p1231 N68-18076 Contact chatter characteristics of linear viscous 10 p1605 N68-19890 Method for identifying and evaluating linear damp-ig models in beam vibrations [ANL-7292] 10 p1607 N68-20144 Calculations to show effect of neglecting aerodynamic damping terms of flexure-to-incompressible flow [NPL-AERO-1236] 10 p1457 N68-20394 Analysis, control, and design of internal combustion engine subject to vibrations 11 p1707 N68-21273 Oscillation damping of tall structures by hanging [NASA-TM-X-60522] 14 p2360 N68-25434 Shock absorber test for testing road spring vibration (A12) 15 p2472 N68-25798 Basic features and accuracy of dynamic stability technique used in wind tunnels to measure pitch and yaw damping characteristics of aircraft configerations [NASA-TM-X-59114] 16 p2584 N68-27535 Shock and vibration damping in helicopters - struc-tural vibrations and serodynamic shock loads, mathe-matical models for prediction and control of vibrations, and vibration isolators and vibration i 16 p2779 N68-27704 Feasibility of hybrid isolation system for control of rotor induced helicopter vibrations 16 p2780 N68-27709 Theoretical and experimental evaluations of two gyroscopic configurations for synchronous aerodynam-ic vibration absorbers 16 p2781 N68-27710 Mathematical model for calculating optimal dynamic absorber design for maximal vibration damping of OGO satellite 16 p2781 N68-27711 Inertially coupled isolator for dynamic antiresonant vibration damping in helicopter rotor 16 p2781 N68-27712

Stress analysis and wear tests in use of lacing wire as

Dynamic control, performance and response of two hase servementors

ressor blades 16 p2790 N68-28238

17 n2864 N68-28676

Combined effects of vibrate functional state of spinal re

vioration damper on turbocom [NASA-TM-X-1603]

Wind tunnel model vibration reduced by use of tuned vibration damping absorber on aircraft model [NASA-TM-X-1606] 17 p2981 N68-28806 Low frequency vibration for compacting metallic nd nonmetallic powders, and advantages of explosive forming techniques [FTD-HT-67-127] 21 p3696 N68-33851 Damping nonperiodic transverse vibration in rectangular elastic plate with layer of viscoelastic material 21 p3781 N68-33621 Low frequency vit 21 p3696 N68-33852 Multilayer damping treatment for skin-stringer struccurved punels to high in-repency noise 21 p3789 N68-34344 Vibration effects of sin tensity random and discre [NASA-TM-X-61200] [GSF/MC/68-9] 21 p3790 N68-34557 Analysis, control, and design of mechanical systems Nonlinear vibra vehicular engineeri [WTHD-4] ns in road and rail subject to vibrations 23 p4178 N68-36109 22 p3974 N68-35640 Viscoelastic adhesives for vibration damping metal minute applications Buckling and free vibration sandwich plates with large cute [FTD-HT-67-343] alvees for rectange 23 p4082 N68-36533 22 p3975 N68-35926 VIRRATION EFFECTS RATION ISOLATORS Vibration response of Apollo skin structure to con-vected boundary layer turbulence [NASA-CR-65808] 01 p0137 N68-10069 Active vibration is reraft pilot protecti cliniques evaluated for low altitude, high speed flight [AMRL-TR-67-138] Water test apparatus used to determine vibration ef-fects on heat transfer in cryogenic systems [NASA-CR-89959] 01 p0148 N68-10178 09 p1286 N68-18298 Analytical and exp and parallel damped [NASA-CR-93547] studies with gyroscopic bration absorbers 09 p1444 NSS-19126 Computer programmed regression analysis for machine tool vibration effects on machining [AD-659547] 01 p0070 N68-10623 Precision tilt and (NASA-TR-R-281) 10 p1528 N68-19642 Vibrational relaxation effects in blast waves before secondary shock front onset 02 p0201 N68-11693 11 p1795 N68-21103 Deformation analysis to determine vibranous frequencies in multiple pipe system 02 p0279 N68-11881 11 p1707 N68-21273 Long term vacuum storage test and vibration effects analysis of multilayer super insulation blankets [NASA-CR-92589] 06 p0850 N68-15368 Comparative study of a shock and vibration isolator [AFOSR-68-0242] 13 p2158 N68-23336 Radio telescope photoelectric balance method of studying star image vibrations [FTD-HT-66-596] 06 p0848 N68-16078 Shim spring isolat 14 p2266 N68-25511 or vehicle with flexibly Electrocardiography of male subjects during vibra-tion - magnetic tape recorded data averaged by digital NASA-TM-X-537331 15 p2565 N68-25714 Dynamic vibration reduce transient vibra [NOLTR-67-60] r principle applied to (NASA-CR-92887) 07 p0943 N68-16419 Ultrasonic vibration effect on precipitation harden ng of steek and super alloys NASA-CR-92801] 07 p1008 N68-1666 15 p2570 N68-26444 m for rotor indi 07 p1008 N68-16667 16 p2780 N68-27708 Linear constraints, receptance theory, analytical echniques, and energy methods for practical vibration 08 p1247 N68-17500 16 p2780 N68-27709 Turbulence effects from sonic and ultrasonic vibra-ions during combustion of jet of liquid hydrocarbons 08 p1261 N68-18165 16 p2781 N68-27712 Surface vibration effects on nucleate boiling at low tilt and angular vibra 10 p1611 N68-19603 17 p2866 N64-28354 of mechanical systems Vibrational effects of structural components in holo-raphic system on picture quality of slow moving object NASA-TT-F-11910] (ISL-T-13/66) 10 p1560 N68-20318 23 p4178 N68-36109 Vibration effects on dial reading performance with prototype Apollo helmet [NASA-CR-94655] 14 p2206 N68-24914 01 p0053 N68-10977 Effects of fixture stress vibration on mounted acntropic plate /ving 14 p2262 N68-25567 Frequency stability of carbon dioxide laser used in 02 p0274 N68-11152 nor for production of (NASA-CR-95055) 15 p2476 N68-25723 Pressure and vibration rate effects on fretting damage in steels [RIA-68-896] 16 p2673 N68-26984 04 p0909 NGB-13839 painting of using Apparatus for measuring localized vibration effects in human tactile sense 16 p2599 N68-27815 Mechanical vibration effection of the poled liquid bismuth and tin n effects on nucleation of super 06 p0922 N68-15617 m analysis using bale tractory UT p0007 Nash-1649 16 p2682 N68-27822 raphic and co NELC-15131 ionizing radiation of-nalyzer fects on functions of vesti [NASA-TT-F-11503] 16 p2601 N68-28064 l shifts, and nuclear mag-18 p3021 N68-29933 Effects of vibration an na, ionizing, or X ray ot p1247 NGS-174 radiation on guinea pigs and (FTD-MT-24-142-67) 20 p3407 N68-33285 n and gamma radiation Combined effects of vibron vestibular apparatus of gr

06 p1246 1468-17511

SUL

VIBI R

IU

SPAN

VIBR

soli [N/

ster [N/

B

G

A

R

[NA

R

ION

Si

(D3

T

V

W.

L

laun tech [NA

(NA

[NA

im conc [NA

Or mech engin

W

Vi

VIBRATION METERS Laser-Michelson interferometer device for measur-ing vibration of small sound transducers 10 p1537 N68-20024 Statistical energy analysis techniques for estimating vibration transmission of Mariner spacecraft assembly [NASA-CR-94399] 12 p1972 N68-22772 [NASA-CR-94399] 12 p1972 Non-22772 Environmental shock and vibration data - dynamic structural analyses on cargo handling, ship loading, transportation methods, flight vehicle responses, and scale model wind tunnel acoustics [AD-667230] 14 p2360 N68-25477 Amplitude statistics of vibration measurements on trucks and airplanes during spacecraft transportation 14 p2361 N68-25479 Shock and vibration environment data for weapon system mounted on surface vehicle
14 p2361 N68-25480 Comparison of spacecraft vibration data from flight and ground test measurements 14 p2362 N68-25484 Vibration measurement analysis for river patrol boat during gunfiring operations 14 p2362 N68-25485 Shock and vibration measurement instrumentation and analyses - transducer calibration, lasers, shock malyzers, structural vibration tests, dynamic phase stuerwater acoustics dies, and unde [AD-667227] 14 p2367 N68-25561 Interferometric measurement of vibratory sinusoidal 14 p2301 N68-25564 Vibration characteristics and measurements of passive sonar transducer elements 14 p2262 N68-25568 Statistical energy analysis and measurements on vibration distributions in multipanel structures 14 p2368 N68-25573

Three level model for calculating vibrational energy ransferred in inelastic collision with inert gas molecule 15 p2408 N68-26080

Thermoelasticity, thermal diffusion, internal friction, and relaxation in glass fibers 15 p2489 N68-26540 Vibration and mechanical shock measurement (FTD-MT-65-2)7)

15 p2571 N68-26646 Using Mombauer effect and laser interferometry to retermine extremely small amplitudes for vibration seasurements and calibration of scale models 18 p3078 N68-30628

Spin-lattice relaxation time measurements for uram-um in calcium fluoride at low temperatures (9 p3350 N68-30997

19 p3227 N68-31469 [NASA-CR-95985] stic and m vibration transmission

paths to shroud exclo NASA-CR-96144] 19 p3383 N68-32127

retation of ground vibra-fect of sonic boom 22 p3868 N68-35151 tions, produced by sei [NASA-CR-1137]

Hydrogen turbopump system vibration measure-sents at cryogenic temperatures using wideband celeration instrumentation techniques [LA-DC-9331] 24 p4257 N68-37930

VIBRATION METERS NT SEISMOGRAPHS

Laser interferometer system for calibrating vibration (NSRDC-2454) 02 p0219 N68-11215

Shock and vibration measurement instrumentation of analyses transducer calibration, lasers, shock analysers, structural vibration tests, dynamic phase stu-ies, and underwater acoustics (AD-667227) 14 p2367 N68-25561

Dosign and performance of laser heterodyne system for measuring structural vibrations and transducer calibration

14 p2267 N68-25562 Accuracy tests with piezoelectric accelerometers and in vibration measurements on thin walled struc-

TDCK-501211 15 p2467 N68-26171 slock measurement FID-MT-45-2171 15 p2571 N68-26646

NT UNCOUPLED MODES

Self consistent treatment of collective vibrations in (RIFP-45) 01 p0102 N68-10129 Mathematical models and approximation methods for solving lateral vibration modes of cylindrical space vehicles and vehicles with clustered tanks [NASA-CR-935] 01 p0141 N68-10231

Mathematical models for determining longitudinal vibration modes of multistage liquid and solid propelant vehicles, and clustered tank vehicles [NASA-CR-936]

Torsional model development and model calcula-tions for cylindrical space vehicle systems and systems employing clustered tanks [NASA-CR-937] 01 p0143 N68-10568

Equations governing torsional vibrations of unstif-fened cylindrical tubes [AE-1568, PT. 2] 01 p0144 N68-10684

Transfer matrix method for predicting natural frequencies and normal modes of finite row of skin stringer panels [AFML-TR-67-234] 01 p0145 N68-10884

Mathematical analysis of uncoupled torsional vibra-[AE-158S] 02 p0275 N68-11284

Vibration modal response of thin cylindrical shells [NASA-CR-897] 03 p0419 N68-11967

Flight vehicle response to random noise and vibra-tion in space vehicles [SVM-1] 03 n0420 M44 12442 03 p0420 N68-12157

Influence of mass on free flexural vibrations of thin circular rings containing point mass [REPT-2536] 03 p0422 N68-12402 Joint discontinuity in vibrations of composite /conecylinder/shells [NASA-CR-91556] 04 p0589 N68-13357

Excitation of vibrational levels of even-even nuclei in (IAE-1266) . 05 p0713 N68-14438

Flutter in high speed aircraft, and amplitude frequen-cy and vector analysis for determining vibration modes 05 p0750 N68-14571

ic loosening effects on screwed nuts, and 06 p0917 N68-15047

Vibration and stability of composite triple layered onical shells consisting of two isotropic coaxial month layers rigidly joined by corrugated middle 06 p0918 N68-15178 [FTD-HT-23-554-67]

Mathematical model for computing natural frequencies of orthotropic circular cylindrical shell vibrations [BMWF-FB-W-67-11] 06 p0919 N68-15265

Natural modes and frequencies of vibration of struc-ures determined by analysis of conceptual or mathematical models [NASA-CR-92509] 06 p0919 N68-15289

Relationship between relaxation times and normal mode frequencies in uniformly damped solids [ONR-TR-RLT-100] 06 p0894 N68-15629

Linear and circular translational case vibration effects on indication accuracy of electrolytic level and mercury switch gravity sensors [DLR-FB-67-76] 07 p0995 N68-16251

Rayleigh-Ritz method for calculating natural frequencies and vibration modes of low aspect ratio solid wing models [NLR-TN-F-260] 07 p1090 N68-16625

Perturbation method for determining normal modes and eigenvalues of optical cavities with circular resona-

07 p1037 N68-16949 Optical heterodyne techniques for laser vibration analyzer [NASA-CR-73167] 07 p1000 N68-17069

Stodela method for calculating natural frequencies at modes of sandwich beams in free flexural vibration 08 p1248 N68-17506

Energy levels and vibronic intentities in cesium hexabromo uranate, cesium hexachloro uranate, and tetramethylammonium hexachloro uranate [TR-6] 09 p1405 N68-18361

Shock absorption devices on elastic rods in bending vibration under kinematic, harmonic displacement 09 p1441 N68-18674 ibration effects of bodies on heat transfer coeffi-ts in free convection

09 p1448 N68-18675 Ritz method of calculating vibrations of cantilevered triangular and trapezoidal plates to simulate lifting sur-face and rudder behavior

09 p1442 N68-18684

Natural frequencies and corresponding mode shapes for rectangular, isotropic and orthotropic plates under various constraining conditions 09 p1444 N68-19114 Photodissociation cross section data for hydroge 19 and deuterium 27 vibrational levels {JILA-92} 09 p1399 N68-19479

Digital computer program for computing vibrational mode shapes and frequencies of linear orthotropic shells of revolution using iterative processes (NASA-CR-61692) 10 p1608 N68-20286 Axisymmetric vibration of thin wa walled conical shells 10 p1609 N68-20536

Resonant frequencies and nodal pattern modes of vibrating cylindrical and conical frustum shells [NASA-TN-D-4428] 11 p1794 N68-20954

Structural vibration modes of 210 foot radio telescope observed in resonance and free vibration 11 p1797 N68-21324

Local modes in lithium-magnesium and beryllium-[ANL-TRANS-474] 12 p1934 N68-22677

Iterative procedure for calculating normal modes and frequencies of cantilever beam [NASA-TN-D-4560] 12 p1817 N68-22886 Finite element approach to dynamic analysis of vibration modes and random response of multibay panel system [NRC-10001]

13 p2164 N68-24282 Infrared and Raman luttice modes of mixed polar 14 p2328 N68-24348

Mobility of long thick walled cylindrical shell 14 p2357 N68-24955

Coding for computer vibration analysis program 14 p2367 N68-25369 Resonant frequencies, vibration modes, and transfer functions of Rosman I antenna structure

15 p2422 N68-25788

Infrared active localized vibrational modes of impurities in gallium arsenide 15 p2534 N68-25864

Absorption bands and localized vibrational modes of silicon doped with boron compounds containing phosphorus, arsenic, antimony, or lithium [NASA-CR-87761] 15 p2544 N68-26809 Harmonics, pulsation ampl tion of Cepheid variable stars [NASA-CR-87250] olitude, and vibratory mo-

16 p2758 N68-27467 Vibration modes of circular cylinder of isotropic material exhibiting phenomenon of couple stress of couple stress 16 p2779 N68-27631

Vibration and sound field of flat plate excited by tur-bulent boundary layer pressure fluctuations with development of analytical computer program 16 p2781 N68-27735

Principles of global vibration tests for investigating vibratory behavior of structures [ARL/SM-26] 16 p2790 N68-28274

Vibrutional spectroscopic studies of C 13-CO tchange and substitution with metal carbonyls 17 p2840 N68-28840

enching potentials for diffusion and kinetic use flames, and influence of electric fields on tion combustion modes of gaseous fuel 18 p.3185 N68-29845

Infrared spectroacopy of iron tetracarbonyl iodide and hydrogen manganese pentacarbonyl and ionic idrations in hydrofuran solutions of alkali salts of man-janese pentacarbonyl 18 p3020 N68-29857

Three dimensional motion analysis and vibration tharacteristics of dynamically scaled model of asym-netrically clustered faunch vehicle mutrically clustered to INASA-TN-D-47071 19 p3382 N68-32051

Vibrational mode studies of lithium defect com-lexes in gallium arsenide and phosphorus-boron pairs in silicon (USCEE-282) 19 p3356 N68-32070

Prediction of vibration frequencies and modes for free-free truncated conical shells, using Rayleigh-Ritz INASA-TN-D-4772 20 p3603 N68-33057

Stiffness and mass matrices for finite cylindrical shell element to be used in predicting vibration modes of curved fan blade (NRC-10198) 21 p3787 N68-33842

Localized vibration defect pairs in silicon (NASA-CR-97309) 24 p4331 N68-37728

Vibration analysis for circular and unnular plates ander axisymmetric leads for several boundary and shape conditions [FTD-HT-23-794-67] 24 p4350 N68-38169

U TRANSDUCERS

A-1374

EX

19

479

286

lla 536

of

954

dio

324

177

des

186 of

122

lar

149

35

60

fer

88

64

of

09

oic

31

ur-ith

35 2

74

00

40

tic

45

57

m-irs

70

or

57

ell

42

28

es nd

VIBRATION SIMULATORS

Mathematical models of bearing analysis machine [REPT.-2486] 06 p0851 N68-15648

Computerized simulation of high speed tension test [UCRL-13226] 11 p1794 N68-20934

Design, construction, and performance of manned sace center acoustic laboratory for ground tests of Apollo spacecraft (NASA-TM-X-58017)

12 p1854 N68-21874

Requirements for vibroacoustic environmental simu-tion test facilities for aerospace vehicles 16 p2638 N68-27990

Concept, design, and performance of spacecraft acoustic aboratory used in vibratory testing of Apollo spacecraft

16 p2639 N68-27992 Flight vibration test equipment developed to deter-mine aeroelastic behavior of Concorde aircraft [RAE-LIB-TRANS-1309]

23 p3990 N68-36505

VIBRATION TESTS

Techniques for full-scale dynamic testing of large solid or fiquid fueled booster vehicles [NASA-CR-940] 02 p0273 N68-11054

Vibration and shock testing for spin motors for sterilizable wide angle gas bearing gyro [NASA-CR-90335] 02 p0210 N68-11175

Ground vibration test procedures, and automechanical properties of aircrafts and space [AVA-FB-6706] 03 p0300 N68-12274

Equations of motions obtained for thickness twist overtones of thickness shear and flexural vibrations of rectangular, AT-cut quartz plate [ONR-TR-5]

03 p0407 N68-12359

Mariner 5 forced vibration test program [NASA-CR-91220] 03 p0423 N68-12617 Bellows configurations design, pressure loss, and vibration tests to minimize pressure drop and improve gas and liquid flow in spacecraft high velocity duct

[NASA-CR-91525] 04 p0565 N68-13484 Ground vibration test techniques and equipment for determining frequency, deformation, and absorptivity characteristics of aircraft and missile structures

osile structures 05 p0749 N68-14563

Absolute pressure switch design and fabrication, and temperature and vibration test data [NASA-CR-61479] 06 p0815 N68-15551 Random and sinusoidal vibration effects on heat pipe

LA-3798) 07 p1095 N68-16650 Resonant frequencies of elastic structures obtained om calculation of harmonic excitation from vibration

[ONERA-NT-119] 08 p1246 N68-17425

Flight vibration test equipment for SST Concorde [ONERA-NT-120] 08 p1246 N68-17434 Elastic suspension apparatus for determining mo-ents of inertia by ground vibration tests 08 p1112 N68-17462

Subjective reaction to dual frequency body resonant vibration under varying background vibration condi-

[D3-7562] 09 p1286 N68-18294 Transverse vibrations of circular cylinder on linear springs in steady fluid stream

10 p1602 N68-19694 Vibration tests conducted on ESRO I satellite proto-

WGLR/DGRR-PAPER-51]

10 p1609 N68-20490 Longitudinal vibration of full scale representative unch vehicle by means of force controlled vibration

INASA-TN-D-45021 12 p1973 N68-21869 Wrap drum, adhesis watts per pound rollup i [NASA-CR-94245] and vibration tests for 30

es, and solar array 12 pt 818 N68-21998 Vibration, shock, and acceptance test data for C-1 cket engine propellant valve qualification rocket engine propel 12 p1962 N68-22818

Improved bipropellant valve for C-1 engine - design concepts and test program [NASA-CR-61731] 12 p1883 N68-22981

Qualification testing of pulse modulated and sechanically linked hipropellant valve for C-1 rocket INASA-CR-61734) 12 p1962 N68-23028

es /conference/ 14 p2362 N68-25498 Shock and vibration at [AD-667228] merical methods and

14 p2362 N68-25499

Internal vibration of electron equipment resulting from acoustic and shaker induced excitation 14 p2362 N68-25500

Random vibration test level control using input and

test item response spectra 14 p2363 N68-25502

Random force vibration tes 14 p2363 N68-25503

Control point averaging for large specimen vibration 14 p2363 N68-25504

Vibration methods for m random excitation 14 p2363 N68-25505

Dynamic testing of full scale Saturn launch vehicles 14 p2364 N68-25506

High force vibration testing Saturn S-4B stage 14 p2364 N68-25508

Control stabilization for m ple shaker tests 14 p2364 N68-25510

S-1C reliability progra vibrations occurring du-firings using short duration form vibration test am - simulation of transi-ring engine phase of sta-on, high intensity shaped ri 14 p2365 N68-25529

Design of frequency modulated data acquisition system for multichannel recording of wideband infor-mation from Saturn S-4ft vibration test

14 p2368 N68-25574 and tungsten subjected to vibration tests [NIC-TRANS-2582]

16 p2675 N68-27180 ensuring technique Noncontacting displand applications to vibra [NASA-TM-X-59115] 16 p2662 N68-27649

open-loop equalization ibration testing 16 p2783 N68-27891 Analog computer to performultishaker environmen [NASA-CR-95095]

cristics of inflatable Air-16 p2786 N68-27938

Test facilities requirements for vibroacoustic testing of aerospace vehicles, and summary information on environmental, vibration, and acoustic testing of Apollo spacecraft [AD-668246]

16 p2787 N68-27989 ic environmental simu-e vehicles 16 p2638 N68-27990 Requirements for vibroacou tion test facilities for aerospa

Concept, design, and perfection to laboratory used in vib ormance of spacecraft ratory testing of Apollo

16 p2639 N68-27992 Development and verification of vibration test equirements for Apollo command and service

16 p2787 N68-27995 Development and verification of Apollo Lunar odule vibration and acoustic test requirements

16 p2788 N68-27996

Saturn S-2, S-4B, and instrument unit subancemble assembly vibration and accountic evaluation pro 16 p2788 N68-27997

Acoustic test conditions to verify structural and com-ponent integrity of Apollo lunar module 16 p2788 N68-27998

Vibroacoustic test method tion of Apollo flight hardware for vibration qualifica-16 p2788 N68-27999

acoustic qualification testing used on S-1C stage of Saturn 5 v 16 p2789 N68-28001 Principles of global vibrati vibratory behavior of structure [ARL/SM-26] tests for investigating 16 p2790 N68-28274

Experimental procedures for aerospace structures [ARL-SM-TRANS-27] global vibration tests of 16 p2790 N68-28363

Vibration tests of concent port structure for Tungsten W NASA-TM-X-1608] tube fuel element sup-er Moderated Reactor 16 p2791 N68-28330 oust vibration and tem-n aircraft 17 p2807 N68-28929 Reciprocating engine and perature levels in general av [FAA-NA-68-27]

Analysis of the dynamic structure during vibration to (ARL/SM-28) sec of a mech

17 p2982 N68-29059 Iterative solution for excraft ground vibration test [ONERA-NT-129] on appropriation in air-

18 p3180 N68-30494 Low cost complex wave machine developed for uality control vibration tests of electric and electronic (AD-671450) 20 p3489 N68-33068 ical vibration and X ray marrow cells in mice 20 p3408 N68-33288

of thin cylindrical shells (NASA-TN-D-4705) Teners 21 p3782 N68-33738

of shock spectra with da [NASA-TM-X-61198] 21 p3789 N68-34346

Equations of motion for from resonance vibration ([NASA-TM-X-61205] 21 p3790 N68-34443 es of vibration effects on

Electrocardiographic at human cardiovascular syst [NASA-CR-96882] 22 p3810 N68-34931

Flight vibration test equipment developed to deter-nine aerostastic behavior of Concorde aircraft [RAE-LIB-TRANS-1309] 23 p3990 N68-36505

VIBRATIONAL FREEZING

Freezing of energy transfer in organic mixed crystals (NRC-TT-1268) 07 p0960 N68-17149

VIBRATIONAL RELAXATION

U MOLECULAR RELAXATION

VIBRATIONAL SPECTRA

Vibrational spectrum CEA-R-32351 01 p0018 N68-10041

Uncoupled flexural vibrat [AE-1595] 01 p0144 N68-10768

Polarized vibration sper rarate in terms of selecti symmetry in Brillouin son [AROD-2099-30-P] of cesium hexachiorou-les for points of special 03 p0404 N68-12112

flight data in spacecraft Computer program to det ectra for analysis of transie

04 p0572 N68-12955 INASA-CR-913561 Analytical method and stermining coupled for nerical computations for d-horizontal vibration of

05 p0751 N68-14769 termining behavior of magnetic field - mts ibration spectrum 5 p0886 N68-15953

Tables of molecular vib (NSRDS-NRS-11, PT, 21

06 p0795 N68-15992

First order frequency flutter of finite cylindrical (AS-67-16) 07 p1091 N68-16694 mal modes and

acoustic and infra actric field on vibra eraction in ECVOH 10 p1579 Nes-20

11 p1751 N68-20841

Vibrational spectra of be 14 p2215 N68-24905

14 p2252 N68-25383

mal spectra for I (JINR-P2-3704) 14 p2318 N68-25405 i energy in excited elec let of vib

15 p2408 N68-26079

Infrared and Raman v benavne, normal propyll stituted analogs [AFML-TR-67-292] ional spectra of ethyletic and terminal such 15 p2427 N68-26367 br carbon dioxide and

Band and total grater 15 p2420 N68-26743

and spectral reso 17 p2835 1968-28352

AE-1905) 17 p2979 N68-28410

try racini with m 7 p2929 Nes-20709

18 p3184 Nes-29799

Birefringence and viscosity used to determine dependence of optical anisotropy of macromolecules on properties of polyvinyl solvents [FTD-MT-24-212-67] 22 p3823 N68-35286

22 p3823 N68-35286

SU

VI

VE

VI

nal spectra of isotropic thin, flat, and elastic Operating and maintenance instructions for experimental nonmagnetic flight mass spectrometer [NASA-CR-61962] 22 p3875 N68-35230 Method and equipment for recording ultrasonic test ata on magnetic video tape data on magnetic [NOLTR-68-13] 18 p3179 N68-30292 15 p2468 N68-26497 Reception of automatic transmitted pecuates su-weather satellites using cathode ray tube 17 p2854 N68-29420 Frequency and analysis of vibration of cylindrical shell in three dimensional flow of ideal fluid [FTD-HT-67-218] 18 p3180 N68-30438 VIHRATORS **ELECTRIC CHOPPERS** VIBRATORY LOADS Vibrational analysis of infrared spectra of fused silica VIDICONS Impeller induced vibratory pressures and per-rmance of hydrojet ducted propulsion system R6613] 09 p1413 N68-18320 Vidicon system for bubble counting and track meaformance [R6613] 19 p3225 N68-31294 Analytical method for determining vibratory loading rates of structural parts from extremum values of frequency distributions ORO-2504-110) Tabulated data on vibrational and rotational energy levels for lower energy levels of water vapor in at-07 p0997 N68-16544 Photodiode and vidicon read-in devices for convert-g graphic data on paper tape or in pulse form on mag-tic tapes into binary digital form for digital compu-19 p3316 N68-31421 10 p1606 N68-20057 Vibrational spectra of ethyl alcohol and its deuterine symmetric loadir ng of ring stiffened cylindrical [FTD-MT-24-286-67] 11 p1670 N68-21554 (NRC-TT-1307) 19 p3229 N68-31786 Theory, construction, and circuits of converters of graphical functions into electrical signals [FTD-MT-65-391] 16 p2629 N68-27347 14 p2356 N68-24850 Approximate method for electronic state of doped lattice or disordered lattice vibration spectra [RIFP-71] 20 p3563 N68-32412 on nonlinear flexural ar cylinders 16 p2776 N68-27211 vibrations of thin wa [AFOSR-68-0516] camera tube with sear Photoconducting televisio ultraviolet image amplification Vibrational assignment of iodine fluoride-6 positive Shock and vibration dam tural vibrations and aerody matical models for prediction and vibration isolators uping in helicopters - struc-namic shock loads, mathe-m and control of vibrations, 19 p3253 N68-31539 (TR-1/6/) 20 n3429 N68-32997 Pulse height analyzer, photometer, and secondary vidicon for space application imaging astronomical electron conduction Vibration-rotation lines of carbon monacide emitted by acetylene-oxygen flame (AD-668328) 16 p2779 N68-27704 21 p3648 N68-33785 23 p4066 N68-37413 and aerodynamical ted data of vibra nal frequencies for compu-amic properties tation of ideal gas thermo (NSRDS-NBS-17, PT. 3) 16 p2780 N68-27705 Guidelines for selecting viewing points for three-imensional maps Prediction and control of helicopter vibrations in-baced by blade loads 21 p3654 N68-34705 [TR-3] 02 p0206 N68-11427 16 p2780 N68-27706 Electron phonon interaction calculations applied to intice vibration spectra VINTI THEORY Canonical transformations, variation of parameters and Vinti intermediate orbit used to develop satellite drag theory dynamic analysis for 22 p3946 N68-34847 rations 16 p2780 N68-27707 Far infrared spectra and stru-latinum 2 complexes and viber ganophosphorus compounds ture of palladium 2 ational spectra of s 10 p1592 N68-20007 Aeroelastic analysis of she vibrating rotor blade models [SER-50419] ear stress measurements on VINYL COPOLYMERS 22 p3821 N68-35015 21 p3621 N68-33649 Copolymerization of fluorocar [NASA-CR-93072] Force constant FORTRAN adjuster program to ob-tin least squares fit to observed vibrational frequen-Launch vehicle vibration levels predicted by mathe-natical models derived through regression analysis of revious launches rbon vinyl ethers 07 p0957 N68-16568 nt squares fit to obser-nolecules and crystals Gamma ray effect on synthesis of organo-tin stabil-izers and catalysts for vinyl chloride plastics and (IN-1148) 23 p4109 N68-36812 22 p3965 N68-35514 Two and four quasi-particle Tamm-Dancoff theories vibrational states applied to even tin isotopes with alistic nucleon-nucleon potential U PHONOCARDIOGRAPHY 07 p0959 N68-16791 realistic mcl Polymerization of vinyl n tion at low temperatures mers by gamma radia-VIBROMETERS
U VIBRATION METERS 23 p4128 N68-37029 14 p2275 N68-24431 Vibrational and rotational spectra of four particle Reactions of hydrogen atoms with vinyl chloride 15 p2411 N68-26095 VICKERS SCIMITAR AIRCRAFT U SCIMITAR AIRCRAFT (TF-68-14) 23 p4134 N68-37230 VICKERS VC-10 AIRCRAFT U VC-10 AIRCRAFT Polymeric and plastic materials used to prevent cor-Zeeman effect and polarized vibrational spectrum of crystallized cesium uranium halides des 24 p4329 N68-37544 (FTD-HT-66-540) 18 p3097 N68-29631 U VC-10 AIRCRAFT Compatibility of vinyl paints for lining heavy water nic oscillators inding multiple qua steel storage tai 24 p4215 N68-37785 eria for graphic display systems 05 p0662 N68-14416 - 18 p3100 N68-30763 VINYL CYANIDE
U ACRYLONITRILES Chemical charact excited condition cs and structure of uranyl ion Mathematical model for Apollo video signal 24 p4219 N68-38322 INVL ETHYLENE U BUTADIENE processing in low signal to so [NASA-CR-93149] ratio environmenta 07 p0962 N68-16508 (AD-674264) VINYL POLYMERS 24 p4221 N68-38490 Video data moduli [NASA-CR-93568] 09 p1305 N68-19149 Irradiated and heat treated poly/vinyl acetate/ semiconducting polymer development and flare warn-ing system based on monitoring of solar X rays for en-suring astronaut safety VIRRATIONAL STRESS ormation analysis recies in multiple pipe to determine vibration data modulation study 09 p1305 N68-19150 [NASA-CR-93472] 02 p0279 N68-11881 tion system for identify-dec data 02 p0292 N68-11449 k for free vibration unul-strached weight 04 p0587 N68-13157 Computer program pain of pathraned cylin NASA-CR-91282) Semiconducting polymer development - irradiated and heat treated poly/vinyl acetate/ 09 p1320 N68-19229 Design and development of the common cathode ray tube d 02 p0225 N68-11450 t of data converter for simul-display of sferics and radar Membrane shell theory gram for determining impo-conical shells under axial ex [NASA-CR-92999] ory and digital computer pro-Infrared spectra of plastics and elastomers after weather echoe [ML-48023] 10 p1495 N68-19775 nuclear irradiati (ORO-2418-3) 03 p0356 N68-12247 07 p1089 N68-16339 Chemical reactions in polyethylenes and vinyl hic display language 13 p2033 N68-23283 [COO-1469-0068] d workpiece rotation for by controlled vibration 10 p1533 M68-19611 Spacecraft image pr for biomedical applicati [NASA-CR-96931] techniques evaluated [COO-1614-1] 12 p1894 N68-22541 22 p3874 N68-35067 k on vibration as culations in helicopte Surface photopo monomers by ultrav (REPT.-67-C-290) m of vinyl and diene aracteristics, error control, and for Mars television mapping ion 13 p2089 N68-23704 NASA-TT-F-519] 13 p1991 N66-23456 Viscosity and nuclear n vinyl aromatic polymer so [NASA-CR-94786] gnetic resonance studies of [NASA-CR-86095] 22 p3838 N68-35745 d mechanisms of injury of sinusoidal motion 14 µ2200 N68-24888 VIDEO EQUIPMENT 14 p2277 N68-25010 High duty cycle high perforn nce log video amplifi-Separation of uranium ions in polymerization-type sulfo-cation exchangers with diviny benzene ring charact es of steel rod with cross sec-14 p2219 N68-25614 (DSD-TM-181) [TR-4] 01 p0039 N68-10717 15 p2572 N66-26916 Get effect, chain transfer reaction, and other studies related to bulk polymerization of vinyl monomers at high degrees of conversion [RTS-4462] 20 a3510 NAR-32640 Solid state broadbo and video amplifier for television or cylinder of instrugic in of couple stress. 16 p2779 N68-27631 AMRL-TR-67-611 03 p0319 N68-11941 2.0 Fog chamber test results of renway videometer and TV display acreen compared with data obtained in air Thermal degradation of polyvinylidene fluoride and polyvinyl fluoride by oven pyrolysis [C&OM-50] 21 p3708 N68-34374 Fricti ne and from NASA-TN D-4630 FAA-RD-67-321 06 p0847 N68-15999

Complex interacting sampled data control systems of madruplex color video tape recorder versus control

14 p2233 N66-25083

17 p2893 N&8-28871

tropic cylindrical 21 p3781 N44-33630 NDEX

-26497

es from

-29420

k mea

-16544

onvert-n mag-compu-

21554

ters of

27347

h near

31539

37413

three

11427

0007

6568

tabil-and

6791

4431

5095

cor-

631

ater

763

149

ted

150

47

nyi

41

64

of

10

pe

14

es 81

10

4

tic fluids in instru

19 p3262 N68-31013

19 p3377 N68-31455

20 p3599 N68-32252

0 p3308 N68-32342

polyurethines and

20 p3509 N68-32576

allicone rubber and

20 p3512 N68-33324

rsc vibration in rectan-iscoelastic material 21 p3781 368-33621

ating gravitational insta

21 p3680 N68-33993

21 p3708 N68-34247

22 p.3969 N68-34958

22 p3970 N68-35030

pagation and attenu

as for viscos

dy dynamic res

iscoelastic properties of

with viscoelastic

VINYL RADICAL m ions for prolongation of Vinyl guanidini polymethine chains 23 p4016 N68-37359 VINYLIDENE Thermal degradation of polyvinylidene fluoride and polyvinyl fluoride by oven pyrolysis [C&ON-50] 21 p3708 N68-34374 VIRIAL THEOREM Virial and viscosity effects on mass flow rate mea-terments using sonic throat, and virial effect on nozzle thrust IONERA-TP-528) 03 p0335 N68-12037 Relative stiffness of macromolecules in polymer hains evaluated by rate of change of polymer coils ith changing second virial coefficient 10 p1488 N68-20095 m for viscosity and Viscometer design and operation virial coefficient data on monatomic mic gases 15 p2466 N68-25941 Fifth virial coefficient of hard sphere gas and hard disk gas 20 n3462 N68-32737 nd virial coefficients for rature and high pressure 23 p4047 N68-36357 VIRTUAL PROPERTIES Properties and magraphite materials [FTD-MT-65-132] ing technology of carbon-07 p1012 N68-16912 VIRTUAL WORK U EQUILIBRIUM VIRUSES NT BACTERUOPHAGES Detection and identification of m gas chromatography 13 p2001 N68-23933 Effect of solvent on inactivation of transforming deoxyribonucleic acid, tobacco mosaic virus, and its nucleic acid by ultraviolet radiation 20 p3408 N68-33479 VISCERA
U ADRENAL GLAND
U BLADDER INTESTINES KIDNEYS LIVER LUNGS ORGANS SPLEEN STOMACH THYROID GLAND VISCOELASTIC CYLINDERS Analytical solution of acceleratic hollow cylinder thermal stresses for [R-372] 10 p1608 N68-20269 erical solution of abla-lastic cylinder 16 p2793 N68-27243 hematical model and a d thermal effects in vis (TR-2) Right circular cylindrical and viscoelastic specimen specied to forced, sinusoidal, and torsional oscilla-on - complex shear modulus of LX-04-1 explosive (UCRL-50357) 16 p2672 N68-28139 ock wave propagation elastic and viscoelastic 24 p4347 N68-37585 VISCOELASTIC DAMPING U ELASTIC DAMPING U VISCOUS DAMPING

VISCOELASTIC FLOW U VISCOELASTICITY VISCOELASTICITY NT THERMOVISCOELASTICITY tational vibration damping of beams embedded in viscoelastic material [AFML-TR-67-233] 01 p0143 N68-10601 Finite deformations of ible viscoela AM-67-6 01 p0144 N68-10691 Modified electromagne ad mechanical measurem cer for acoustic n viscoelastic selids 02 s0257 N68-11123 media with contin 02 p0278 N68-11673 ure criteria for via lastic materials, crack propagation mean degradation [NASA-CR-91285] 04 p0525 N68-12914 Stress waves in temperatur half space subjected to in re dependent viscoelattic apulaive electromagnetic [AFOSR-67-2453] 04 p0586 N68-13043

Dynamic strains on surface of opaque bodies using perfringent string ion moduli of anisot Fracture behavio biaxial stress fields [NASA-CR-88595] Secondary flow about iid inside coaxially rot Propagation of pe viscoplastic rod [NASA-TT-F-11722] Turbulent heat to NASA-CR-95261)

Linear viscoelastic yais of solid propella INASA-CR-953721

Shock wave propaged in anisotropic v

Theory and loading

AAABS

Fracture mechanics in viscoelastic media [NASA-CR-91286] 05 p0746 N68-14187 NonNewtonian and vis 06 p0920 N68-15336 [DA-358/7] medium under internal pro (TM-646.3361-04) Kinetic energy of body fracture, and loading functions of fracture theory for linear viscoelastic bodies.
[NASA-CR-92512] 06 p0923 N66-15835 Mathematical model for polymer molecules in which segments are torsional oscillators consisting of backbone links and damping is due to hindered internal IONR-TR-RLT-1011 08 p1142 N68-17922 is, strain, and displacement and plastic solids under dif. Time dependence of st stributions in viscoelast ferent loads [NASA-CR-93354] 08 p1254 N68-18129 ethylene propy near equations for stress relaxation at wave 09 p1440 N68-18626 etry for measuring 10 p1558 N68-19848 rafe b Third degree functional polynomial representation f constitutive equation of nonlinear viscoelastic Relaxation spectra is materials and Proney or D [NASA-CR-88252] 11 p1791 N68-20626 Characterization and stress of viscoelastic materials analyses of compo 11 p1717 N68-20639 Review of elastic-plastic equilibrium equations and naracteristic energy functionals related to initially entituous bodies 11 p1795 N68-21115 REPT.-67SD2261 ials as extended clastic Fracture in viscos fracture [NPS-57L17111A] 11 p1798 N68-21395 Approximate soluti r viscoelasticity 12 p1976 N68-22218 Axial loading of unisotropic filaments, an indirectional composites [U-4324] 13 p2159 N68-23430 tive equations for 13 n2054 N68-24113 Theory of nonlinear ph 14 p2355 N68-24689

15 p2570 N68-26334

tic circular arch an sic linear viscoelast

15 p2571 N68-26626

16 p2775 N68-26972

viscoelastic liquida stru-atrain law 16 p2641 N68-27041

rotating in viscoelastic herical container 16 p2648 N68-27821

non-Newto

d melts 16 p2691 N68-27828

16 p2789 N68-28115

16 p2797 N68-28237

16 p2751 N68-28261

16 p2790 N68-28313

vave front velocity and hedice 17 p2900 N68-28675

inearity of viacostastic durced photic 18 p3097 Nos-29701

mearbone at high pres-illating quarte rod 18 p.000 Nea-29907

al compensor of con-

18 p3178 N68-30103

em in strem anal

scoolastic layered

tic materials under

vibration damping met 23 p4082 N68-36533 c absorption tests for 23 p4012 N68-36903 cts on stress wave propagati 24 p4348 N68-37696 Transient pulse propagation through linearly 24 p4349 N68-39067 (AROD-4547-39-E) Ownger reciprocity stic solids 24 p4350 Nee-38108 . 0 AFML-TR-67-424) VISCOMETERS

arbons at high

20 a3483 N40-33334

NPL-MC-I) 21 p3600 1000-34

-13 p2854 168-24113

BCOPLASTIC PLOW U VISCOPLASTICITY BCOPLASTICITY

for dynamic w 01 p0142 NAB-10 2 p2276 Non-11675

General numerical procedure for sonu-omgressible flows with shock waves 24 p4243 Nex-37501

SU

Viscoplastic properties of metals, viscoplasticity odel, and equations for compression and relaxation Turbulent, nonisothermal, viscous, compressible flow in inlet sections of axisymmetric flat channels 02 p0289 N68-11741 Viscosity and velocity of two dimensional quasi-parallel turbulent shear flow 19 p3262 N68-31030 03 p0351 N68-12352 Study of viscous effects in separated compressible Convective heat transfer in unsteady laminar thermal boundary layer on semi-infinite plate in viscous liquid Flow stability of viscop tic medium between planes Flow stability of viscoplastic with slots in extrusion of metals 19 p3263 N68-31224 06 p0919 N68-15282 02 p0291 N68-11750 Viscosity of low molecular weight polymer solutions outliple-bulb glass viscometer for measuring flux is of liquid at consecutive shear rates [696] 04 p0506 N68-12883 ns in viscoelastic and Propagation of perturbation of various concentrate (ONR-TR-RLT-108) 19 p3226 N68-31365 viscoplastic rod [NASA-TT-F-11722] 16 p2789 N68-28115 tidomain particles of ferromagnetic mi [RTS-4476] Thermal activation magnetic viscosity of mul-NT GAS VISCOSITY Inviscid and viscous models used to compute vortex tic matter 20 p3563 N68-32420 breakdown phenomenon (AS-67-141) 04 p0496 N68-13641 Cytoplasm viscosity che mental stages of frog eggs [NASA-TT-F-11272] nges during first develop-Alkali effect on viscosimetric titration of methacrylic Flow stability of viscoplastic medium between planes with slots in extrusion of metals acid copolymers [RTS-4378] 01 p0006 N68-10056 20 p3418 N68-32492 Electrolyte preparation, nuclear magnetic resona nonagueous electrolytes 06 p0919 N68-15282 nd physical property ar Birefringence and viscosity used to determine dependence of optical anisotropy of macromolecules on properties of polyvinyl solvents

[FTD-MT-24-212-67] 22 p3823 N68-35286 Shock wave and viscous layer structure in rarefied ypersonic flow near leading edge of sharp flut plate hypersonic flow near leadin [ISAS-418, V. 32, NO. 11] [NASA-CR-72324] 01 p0018 N68-10095 22 p3823 N68-35286 Grooved-shaft viscos 07 p0985 N68-16549 eals designed for laminar and Variable viscosity of lubricating oil considered in calculating bearing temperatures [NEL-TT-1991] Methods for analyzing stability of parallel viscous 02 p0214 N68-11025 22 p3883 N68-35458 Packing density and viscosity limitations in achieving high solids contents in castable rucket propellants [CARDE-TR-568/66] 02 p0260 N68-11766 10 p1515 N68-19764 Viscosity measurements on molten aluminum halites enclosed in hollow glass pendulums Continuous stratification effects on stability of viscous flow between parallel inclined plates at nondif-23 p4016 N68-37352 Virial and viscosity effects on mass flow rate mea-arements using sonic throat, and virial effect on nozzle VISCOUNT AIRCRAFT 12 p1981 N68-22086 Ultrasonic tests of wing spar joint of Viscount air-raft to observe crack development and growth Oscillating viscous flow of incompressible isothermal Newtonian liquid in annulus between two long concen-tric tubes [ONERA-TP-528] 03 p0335 N68-12037 ent and growth 22 p3884 N68-35660 craft to observe cr [TR-6806.328-B] Fortran 4 computer program for calculation of su-ersonic flow fields with viscous effects VISCOUS DAMPING 12 p1862 N68-22356 GDC-DBE67-003] 04 p0491 N68-12814 Design of viscoelastic damped structures for reso-ant vibration control Asymptotic investigation of viscous compressible gas ow around blunt body Effects of viscosity on wave resistance using pressure of viscouity on wave-n and inviscid flow theory 04 p0492 N68-12994 01 p0142 N68-10451 12 p1811 N68-22429 [REPT-1236] Damping of turbulent flow by long chain molecules [C7-2535/020] 03 p0337 N68-12650 Continuum approach to anomalous effects of ultrasonic wave propagation based on theory for viscous heat conducting, homogeneous, isotropic fluids
13 p2052 N68-23380 Data sheets for surface tension, vapor pressure, vapor density, and viscosity of liquid metals used in Fourier spectrum for base-excited, viscous damped single degree-of-freedom oscillator produced by spec-tral computer program - programmers manual IEUR 3653.E) 05 p0757 N68-14750 [NASA-CR-9[380] are distribution calculations on thick cambered nmers manual 04 p0482 N68-13162 Stability of shear flow with density gradient and Quantitative analysis of torsional vibration viscous damping in fluid coupling [82] il at emb aerofoil at subsonic speeds [NPL-AERO-1238] 13 p1989 N68-24027 INASA-CR-958] Axisymmetric viscous interaction with small surface slip and transverse curvature effects for Prandtl 0.723 and for helium on unwaved core. 06 p0827 N68-15530 Viscosity of concentrated solutions of calcium in liquid animonia in temperature interval of minus 40 deg C to minus 70 deg C [UCRL-17858] 07 p0953 N68-16192 Contact chatter characteristics of linear viscous m on unyawed cone 14 p2239 N68-24396 damped system 10 p1605 N68-19890 Laminar flow in conduit expan Electrofluid dynamic energy conversion processes sing viscous coupling between neutral molecules and Conference on spacecraft with relative rotation between two structural members for attitude stabiliza-tion and control - theory and design of nutation dam-14 p2242 N68-24941 Boundary layer characteristics for hypersonic flow 08 p1123 N68-17815 it mass addition with and without [ARL-68-0002] 15 p2451 N68-26000 ulent intensities of Local similarity techniques for improving linearized olutions to problems of viscosity and compressibility dary layer 11 p1682 N68-20752 viscous region of turb (CER67-68HWT21) 20 p3595 N68-33527 Viscous fluid filled ring as nutation damper for spin in curved flows [NASA-CR-88604] ner viscosity in terms of shear rate [04] 11 p1793 N68-20779 15 p2456 N68-26787 20 p3596 N68-33533 Drag resistance in viscous plastic flow around blunt Effects of viscosity, surface tent actric field on charged colloidal tension, emission, and sidal particle beam for Dynamic analysis and design for ball-in-tube satellite 16 p2645 N68-27593 20 p3596 N68-33534 CPRL-1-681 Boundary layer and velocity equations for variable viscosity liquid flow around flat plate 16 p2645 N68-27594 13 p2143 N68-23427 Viscous nutation damper with cantilevered mass for dual-spin spacecraft stabilization er viscosity as function of shear rate (RLT-195) 13 p2090 N68-24246 20 p3596 N68-33535 Homogeneous gaseous injection into high speed iminar viscous flows at large Reynolds numbers using Viscosity and nuclear Static and dynamic elasticity, and viscous damping of laminated and sandwich plates, shells, and beams [NASA-CR-96738] 21 p3789 N68-34285 vinyl aromatic polymer solu [NASA-CR-94786] 14 p2277 N68-25010 idealized Couette shear flow [DOUGLAS PAPER-4362] Viscosity model for shock wave propagation in stress 17 p2874 N68-29399 Behavior of sloshing liquid column during accelera-[NASA-CR-95707] hron operation theory 17 p2827 N68-29475 14 p2360 N68-25393 (NASA-TM-X-53755) 22 p3863 N68-35825 Viscous structure of shock wave reflected from fishetic and isothermal walls Leading edges and approximation to Navier-Stokes quation for hypersonic viscous flow over flat plates Forces on oscillating circular cylinders in viscous flow over flat plates 18 p3057 N68-29563 15 p2453 N68-26327 ICR-1569-1] 23 p4051 N68-37207 Steady separated flow past bluff b Asymptotic expansions for stream functions of in-compressible viacous vorticity flow over infinite wedge 17 p2871 N68-28599 VISCOUS DRAG Solvents for electrolyte batteries screened by con-citivity, viscosity, and density and studied by gas romatography, Karl Fischer titration, X ray diffrac-us, and vollammetry. ow over infinite wedge 19 p3261 N68-30980 Viscous drag of hydrodynamic forces acting on cylinders in oscillating flow 21 p3679 N68-33770 Hypersonic viscous flow over slender bodies with sharp leading edges 20 p3458 N68-32278 17 p2816 N68-29462 (SC-CR-67-2855) NT BOUNDARY LAYER FLOW NT BOUNDARY LAYER SEPARATION NT COUETTE FLOW ological study of viscosities and pipeline flow of strated slurries Viscous flow of hypersonic vehicles moving through earth atmosphere 20 p3463 N68-33053 REATTACHED FLOW 18 p3059 N68-29804 Theoretical and experimental study of steady state two dimensional flow of viscous, heat conducting fluids across finite size horizontal plate SECONDARY FLOW cous effects on pre er on blant cones at al flow ediations pressure distribution and heat es at hypersonic speeds and using 20 p3612 N68-33462 Viscous flow in circular cylindrical tube containing finite line of spherical particles IR-1] 02 p0197 N68-11188 18 p2995 N68-29945 Similarity solutions for two dimensional, steady viscous magnetohydrodynamic boundary layer flow [5R-56] 22 p3942 N68-35268 ints studied for effects [TR-1] Viscous fluid flow induced by sinusoidal traveling wave motion of tube walls at moderate amplitudes of motion in two distensional cases (APOSR-07-2255) 02 p0198 N68-11332 im ware transmission in blood results [NASA-CR-95802] 18 p3008 N48-30029 Fluids with convected elasticity and viscous flows with incompressible fluids [NPL-MA-71] 23 p4051 N68-37146 rogen and mistures of (NAIA-TT-F-) (SIP) 18 p3027 N68-30429

resistance in inlet section of viscous flow

us flow 02 p0289 N68-11740

Heat transfer and flow resin flut channel during laminar vis

ed atomization from con-

18 p3158 Nas-30483

(FTD-HT-47-235)

DEX

96

41

00

ed ity

87

nt

93

le

14

ed Ng

Q

28

3

Wave conditions of thin layer viscous fluid flow under gravitational effects [FTD-MT-24-243-67] 24 p4247 N68-38262 1741 VISCOUS FLUIDS 1750 flux 2883 ortex Magnetohydrodynamic flow viscous electrically conducting flu [NASA-CR-989] 1641 282 fied 549 [ARC-29142] 764 of 086 356 gas viscous oil [D1-82-0661] 120 ul-180 red 127 ing cones [TR-3] tion theory [AROD-4284-8-E]

Flow resistance and convective heat transfer for minar flow of viscous incompressible liquids 02 p0289 N68-11734 Methods for solution of Navier-Stokes equations for flow of viscous incompressible fluid around body ex-tending indefinitely downstream [ONERA-TP-505] 02 p0202 N68-11890 flow of incompressible luid over rotating disk 05 p0724 N68-14078 Motion of solid plane in viscous liquid from state of rest under action of longitudinal elastic force 06 p0827 N68-15604 Hyperbolic flow equations for two dimensional viscous supersonic flow isobars in boundary layer flow over curved surface 06 p0828 N68-15664 Navier-Stokes equation for dynamics of viacous fluid transmission lines in closed conduits [NASA-CR-61622] 09 p1328 N68-18778 High mode propagation and dynamics of viscous 10 p1516 N68-19974 Integration of trajectory equations for charged parti-cle in Poisueille flow between charged plates to assess electric field potential for precipitating particles from 10 p1517 N68-20206 Ferrofluids prepared by grinding techniques and stu-died for viscosity and stability after fatty acid addition and magnetic field application [NASA-CR-94540] 13 p2012 N68-23349 charge time for unsteady flow or mountain the from conical reservoir
16 p2646 N68-27620 Chapman-Enakog theory for approximate solution of elativistic Boltzmann equation on viscous fluid motion 16 p2648 N68-27765 Free boundary flows of viscous liquid around rotat-16 p2586 N68-28316 Energy spectra of streamwise fluctuating velocity and mean velocity in study of viscous sublayer along wall in turbulent pipe flow 18 p3061 N68-29977 Development of magnetic fluid viscous oscillation damper for scientific satellites [NASA-CR-94173] 18 p3180 N68-30485 Derivation of equations of motion, constitutive equa-ons, and boundary conditions for micropolar fluids ith stretch capability 20 n3462 N68-32808 20 p3462 N68-32808 Magnetohydrodynamic turbulence in ionized gas and particle motion in viscous fluids by singular perturba-21 p3750 N68-34409 Volume integrals of spherical harmonics products, with applications to vincous dissipation in fluids [D1-82-0733] 22 p3858 N68-35220 Conservation equations of viscous heat conducting fluid in curvilinear orthogonal coordinates [NASA-CR-96991] 22 p3978 N68-35266 Forces on oscillating circular cylinders in viscous 23 p4051 N68-37207 Integral representation for viscous surface waves enerated by steady disturbances 24 p4244 N68-37584 ngle sphere migration pheno acous liquid Couette systems mena for suspensions 24 p4245 N68-37740 Spectrum of final decay of localized disturbances in acous fluid 24 p4245 N68-37882 (NSRDC-2785) -VISIBILITY NT LOW VISIBILITY Scale model test conducted on apray alleviation device for pilot visibility from VTOL air/sea craft nea ocean surface [TAR-TR-9704] 03 p0300 N68-1224 03 p0300 N68-12243 Visibility forecasting for Pittsburgh, Pennsylvania sirports [AD-661279] 03 p0364 N68-12248 treat and visibility of runway lighting in dense fog 06 p0822 N68-15788

Fog chamber test results of runway videometer an TV display screen compared with data obtained in all port operations [FAA-RD-67-32] 06 p0847 N68-1599

Binocular photographic criteria for VTOL aircraft [AFFDL-TR-67-27] 07 p0935 N68-16516 Mechanical fog dispersal hod for airport natways using rotating sieve [RAE-LIB-TRANS-1257] 09 p1323 N68-19059 Visibility, wind conditions, humidity, and other cli-atological data for Schiphol airport of Amsterdam (LEPT.-87) 10 p1351 N68-19772 REPT.-871 Predicting satellite visibility using graphs to show RAE-TR-671731 10 p1593 N68-20285 visual display system ading brightness 11 p1640 N68-21251 Quantilative analysis of degradation due to high surros [AMRL-TR-67-102] Test program and data sat techniques for evaluating systems at five different airports [RD-67-72] mpling and acquisition 12 p1872 N68-22228 Objective method for visibility at Selfridge AFB [AD-667215] od for forecasting instrument flight 13 p2101 N68-23952 Spectrophotometric analysis of visibility through tinted aircraft windshields [USAARU-68-7] 15 p2387 N68-26445 Factors affecting the range of light visibility in fog nd range estimation at airports by visual observation IRAE-LIB-TRANS-12951 17 p2834 N68-29461 Equal angle method of meaning aircraft landing [M-7364] oring slant visibility dur-20 p3470 N68-32765 Statical model and computer techniques for weather forecasts of conditional and persistance probabilities [AWS-TR-208] 20 p3524 N68-33311 Calibration techniques development for runway visi-bility tranmissometer systems [RD-68-7] 21 p3692 N68-34311 Technique for visibility calculations of aerial ob-server sighting and target recognition ranges [SIO-REF-68-13] 21 p3693 N68-34523 Automatic technique for forecasting ceilings and visibility below VFR conditions [AD-672270] 22 p3903 N68-35077 Visibility at civilian airports with high intensity M-73931 22 p3909 N68-35511 Statistical analysis of surface wind velocity, cloud cover, and visibility at White Sands Missile Range from 1951-1967 [ECOM-5202] 23 p4092 N68-36188 Atmospheric optical data recorded in Oregon during aircraft descent over lake [SIO-REF.-68-19] 23 p4055 N68-36445 U LIGHT [VISIBLE RADIATION] VISIBLE SPECTRUM

U LIGHT [VISIBLE RADIATION]

U SPECTRA ISION

NT BINOCULAR VISION

NT COLOR VISION

NT NIGHT VISION

NT STEREOSCOPIC VISION Vision research in military and government labors [AD-661870] 04 p0451 N68-12983 Review of visual problems during space flight [TR-4] OR p1134 N68-18248 Cockpit lighting systemilist visual expabilities us for optimum utilization of 17 p2833 N68-29251 Recovery time to adaptation levels after exposure to red and white light

VISIOPLASTICITY

U FLOW VISUALIZATION

U PLASTIC FLOW

VISOR INASA-CR-92133]

Thermal emittance from quarter-mil aluminized apton space suit material and from sun and protective

06 p0847 N68-15999

a on external visibility

17 p2834 N68-29255

14 p2207 N68-25365

VISUAL AIDS VISUAL ACCOMMODATION Optimum color and light intensity for aircraft instru-tent and cockpit illumination for pilot visual scuity 17 p2832 N68-29239 Effect of red and white light night cockpit huminance on central and peripheral visual performance 17 p2833 N68-29247 Psychophysiological effects of long overwater flights on crews due to lack of visual orientation, and need for physical fitness and rescue operations training [FTD-MT-24-124-67] 18 p3013 N68-29983 VISUAL ACTITY Pilot visual acuity at low level flight LAGARDOGRAPH-107] 04 p0462 N68-13496 Visual work capacity, visual activity, and culor per-ception during space flight NASA-TT-F-11404] 07 p0950 N68-16911 Review of visual problems du [TR-4] ring space flight 08 p1134 F668-18248 Visual factors affecting pre ion of coordinate mea-Human depth per stereo, and nonstereo [NASA-CR-61630] of television displays in OP p1289 N68-19145 thed used for distance d space environment 10 p1474 N68-19705 Successive compared NASA-CR-73205) 10 p1478 N68-20560 email sleep and effects lertness 14 p2198 R68-24865 es on quality of sleep sychophysiological per convenual acuity tests. 14 p.2198 1068-24866 cts of hypnotic set lures for studying factors affect 15 p2467 N68-26241 neity for aircraft instru for pilot visual acuit 17 p2832 N68-29239 Astion recovery time of of adaptation to al-17 p2832 N68-29243 resolve objects illo-17 p2832 N68-29245 Side to side head vibration effects on visual acuity [NASA-CR-96466] 20 p3411 N68-33093 experiment for testing lict visual acuity of a 21 p3642 N68-34534 cling officer on visual VESTIAL AIDS Pliot program for selecting and transmitting recent spineering and scientific data through monographs NASA-CR-91044] 03 p0429 N68-12229 Field tests of airfle scaled asphalt R-556] g point flexibility on shor-08 pl191 N68-17779

NASA-SP-159 12 p1848 N68-22302 12 p1848 Nes-22303 red requirem 12 p1849 1668-22304 rated display devices on 12 p1873 N68-22305

d pircraft 12 p1650 NAS-22317 u of en

Computer pro (CAMD-1342) 13 p2032 Nan-23100

SUL

fla

E (N

(F

in (F

4

VIS

.

.

Safety problem in bad weather landing, and flight test data on head-up display combining visual and in-Visual information display systems that are computer assected or updated with computer generated infor-Echo 1 satellite synchrono accurate orbit determination ous visual observations for 19 p3369 N68-32007 [NASA-SP-5049] 19 p3251 N68-32159 [RAE-TR-66195] 04 p0438 N68-12865 Formulas for determining atmospheric density from synchronous visual satellite observations Visual rendezvous, rendezvous docking, and visual docking simulaturs Summary of requirements for for visual airborne collision avoid rements for pilot warning device rvations 19 p3274 N68-32009 21 p3641 N68-34529 08 p1117 N68-18238 imposium on unidentified flying objects presented re House Committee on Science and Astronautics 20 p3614 N68-33382 expansion and aim point by visual cues
[NASA-TM-X-61077] Electrical training device for testing flight crews in cloud recognition and identification
23 p4094 N68-36430 Guidelines for observing structural demonstration f naval aircraft VESUAL CONTROL VISUAL PLIGHT RULES of naval airs [TM-1-68] Two and three color, low cost, visual approach slope indicators for glide path determination [NA-67-13] 07 p1021 N68-16437 21 n3620 N68-33643 aal flight rules pilot, and ting topographic data 03 p0689 N68-14842 Prototype chart for visu aphic elements for delinest Electronic visualization technique for studying dynamic behavior of gas journal bearing [NASA-TM-X-1609] 22 p3874 N68-35105 Analytical and simulation study of guidance chaigues /visual displays/ for pilot control of tasks tamned for Apollo mission Infrared detection for aircraft tracking under visual ight rules, and zenon discharge light with diffused silflight rules, and xenon dischar-icon detector as simple pilot w ISUAL PERCEPTION NT AUTOKINESIS NT CRITICAL FLICKER FUSION 21 p3642 N68-34530 08 p1116 N68-18233 Geographical orientation /pilot awareness of naviga-tional position/ during low altitude flight under visual flight rules VISUAL CUES NT SPACE PERCEPTION Detection and scaling of statistical differences VISUAL DISCRIMINATION [NASA-CR-90033] 21 p3644 N68-34541 01 p0033 N68-10127 Conditioning to large-scale displays in extraction of Automatic technique for forecasting ceilings and sibility below VFR conditions Detection of anomalies in binocular vision by means f screening devices which use Pulfrich pendulums AMRL-728] 01 p0007 N68-10149 visibility below [AD-672270] of screening devices which use P [AMRL-728] [RADC-TR-67-411] 02 p0168 N68-11164 22 p3903 N68-35077 Isolation, sensory deprivation, and sensory rear-rangement effects on visual, auditory, and somesthetic Obstruction hurards to low level aircraft under visual flight roles [NA-68-45] 01 p0013 N68-10834 sensation, perception [NASA-CR-90498] 02 p0167 N68-11837 23 p4097 N68-36253 Neurophysiological studies dealing with visual responses by cats and other animals [AFOSR-67-2354] 02 p0165 N68-11177 Distance and size perception in b [NASA-CR-91702] 05 VISUAL OBSERVATION n human beings 05 p0613 N68-14166 02 p0165 N68-11177 Effect of observer distance and posture on size per-Visual detection of radar pip visibility thresholds on lan position indicator Conditioned suppression technique for measuring flicker thresholds and critical fusion frequency in [FTD-HT-67-162] 02 p0171 N68-11423 TM-750-1] 11 p1642 N68-21738 Optical properties and visual effects of smoke stack (ARL-TR-67-22) 03 p0306 N68-12429 Color discrimination a tested with static displays [RM-5303-ARPA] on ability of untrained observers PUB-999-AP-30] Binocular perception and electies of suppression and fusion in st 02 p0241 N68-11895 n and electrophysiological stu-13 p2006 N68-23785 Pilot performance in depth perception between stereopsis 04 p0451 N68-12977 dies of suppression [SRRC-CR-67-36] Stimulus duration and inter-stimulus interval varia-tion effect on motion perception familiar objects [AM-67-20] 07 p0951 N68-17066 Scaling analyses on display-observer interfaces in visual information displays time based on physiological tests patterned on as-tronomic observations of star transients.

[NASA-TT-5-11360] 15 p2400 N68-26041 04 p0460 N68-13024 Perceived changes in size and shape of highly lu-inous target and relation to associated stimuli (ASA-TM-X-59064) 16 p2606 N68-28157 Techniques and equipment for performance under altered environ in visual perception tests [NASA-CR-9[444]] 04 minous target and relati [NASA-TM-X-59064] ent for measuring human environments and stresses 08 p1133 N68-18009 [NASA-T1-F-11306]
Psychophysiological effects of solitude exposure dur-ing prolonged human sensory deprivation tests 09 p1283 N68-18923 uman performance High intensity noise effe 04 p0461 N68-13149 and dexterity 19 p3215 N68-31190 in visual discrimination [AMRL-TR-67-119] Contour descriptor properties of visual shape [SRRC-CR-67-43] 04 p0461 N68-13200 Nonlinear preprocessing and cascading to improve scrimination capability of linear single gain learning External visual inspection criteria for semiconductor Hidden line problem and visual perception of com-uter-drawn polyhedron edges using algorithms NASA-CR-91339] 04 p0331 N68-13830 [NASA-TM-X-60946] 10 p1505 N68-19589 [REPT.-9500-920089] 19 p3215 N68-31363 NASA-CR-91359] Visual observations to d ine orbital elements of Ability of human visual system to analyze line lengths Phase shifts in perception of sinusoidally modulated light studied as function of average luminance, Cosmos 97 satellite during lifetime [RAE-TR-67188] 16 10 p1593 N68-20173 of average 21 p3639 N68-33975 Arrangement and operation of optical equipment for remote macroscopic observation of radioactive samples in reactor chamber [IBJ-870/XIV/PS] 12 p1903 N68-21999 wavelength, and frequency IIZF-1967-201 06 p0776 N68-15115 Visual discrim ution and use of interference separatory reflectors in fluorescent microscopy [TRANS-518] 21 p3732 N68-34427 Sensory signal brightness evaluation during night flight by acoustic intensity matching as function of flash luminance, and duration Predicting visual search times for target identifica-Visual detection range graphs for target recognition [AM-67-16] 06 p0777 N68-15346 against night horizon sky [R67ELS-24] Coriolis vestibular stimulation and influence of dif-ferent visual surroundings on adaptation to vestibular disorientation [AR-3] 21 p3640 N68-34515 13 p2005 N68-23471 rminations of visual fitness criteria ards for space travel /static and Denmark 15 p2459 N68-25840 Exa Visual aurora observati (R-2) (AM-67-19) 07 p0950 N68-16799 21 p3641 N68-34527 indicated by luminosity Optimal conversion of visual to auditory patterns by omputer code ting using different test stimulus patterns between human visual perception latency sinance during high velocity flight 21 p3642 N68-34531 16 p2760 N68-27491 07 p0967 N68-16995 nd densitometric analyses of Digital computer simul processing in human brain [GA/EE/67-1] n of visual information 16 p2760 N68-27492 08 p1136 N68-17839 sess ability of Gemini as-d features on earth sur-Observation of noctifucent clouds from earth surface Human performance in estir ating distances in simu-[NASA-TT-F-11519] 21 p3642 N68-34533 16 p2701 N68-28099 lated space environment (NASA-CR-73206) 10 p1473 N68-19593 ction during image per-Specifications for christable for entellite obse eters with high accuracy Adult age differences in perception of visual Illusions [AFOSR-48-1622] 23 p4002 N68-36400 17 p2883 N68-28757 10 p1474 N68-19696 VISUAL DESPLAYS

U DESPLAY DEVICES Visual observations to find flow distribution and pefficients through radial bladed centrifugal pump im-Effect of attention and awar mess on visual percep-VISUAL PRIDA Peller [NASA-TN-D-4282] 10 p1474 N68-19813 17 p2872 N68-28842 Electrophysiological correlates of perceptual mask-ing in monkeys Functional organiza (NASA-TT-F-11408) ual fields 12 p1830 N68-22815 Visual observations and X ray analysis of plastic 10 p1468 N68-20258 (SU-DMS-68-T-74) rized si d visual projection of 17 p2902 N68-29377 oom training program on visual recognition of tr/attack aircraft configurations 1) 11 p1641 N68-21649 Factors affecting the range of light visibility in fog ad range estimation at airports by visual observation 21 p3670 N64-34651 Dark field its ictron microscope for (RAE-LIB-TRANS-1295) Maximum perception range of fast aircraft with and without binoculars [RRE-TRANS-171] 12 p1817 N68-23016 TRANG 4401 21 p3638 N68-34711 17 p2834 N68-29461 VRIEAL PLIGHT Flight crew sighting reprish over North Atlantic [RAE-TR-67122] for evaluating collision Visual best phenomena and reason to characteristics of visual perception 13 p1999 N68-23251 [TR-4-67]

18 p3000 N68-29599

19 p3237 N68-31228

Attention in identificati sual displays

on of stimuli in complex

13 p2004 N68-23325

USAARU4821

02 p0194 N68-11428

03 p0301 N64-12368

In-Right study of main rator blade point schemes to success believester safety through increased compical-

Stopwatch abservation Ashloy, ftaly, and Edini March 1968 [ROE-873-75]

DEX

es for

2007

from

2009

ities 3382

3643

lying

5105

1127

140

634

sua!

ring

429

du-

377

in

124

40

00

30

œ.

15

16

15

Annotated bibliography of 407 works on visual de-ction, identification, and localization at low light levels [HUMRRO-TR-68-2] 13 p2007 N68-24057 Statistical analysis of a kinesis and felt eye move-[NAVTRADEVCEN-IH-142] 15 p2401 N68-26312 lue, and green stimulus ic eye movements 16 p2601 N68-28137 Human perception of red, bi flashes during voluntary saccadi Perceived changes in size and shape of highly luminous target and relation to associated stimuli [NASA-TM-X-59064] 16 p2606 N68-28157 [AMRL-TR-68-12] 18 p3010 N68-30332 Visual perception in signalitions nulated space environment [AFOSR-68-1212] 18 p3015 N68-30611 Visual perception and retinal adaptation must reshold human physiological responses 18 p3012 N68-30634 (TR-5) erception and human pattern recognition 18 p3016 N68-30796 Visual perception and image identification by read-[FTD-MT-66-158] 19 p3216 N68-31496 Information loss in visual preperceptual system 20 n3409 N68-32309 trradiation phenomenon related to manual naviga-[NASA-TM-X-61190] 21 p3722 N68-34780 Visual display developm formation and analysis res by human engineering [HEIAS-107] 22 p3817 N68-35219 ction during image per-[AFOSR-68-1622] 23 p4002 N68-36400 Human performance meason time required to discrin red as function of reac-inate change in beacon in NASA-CR-12201 24 p4207 N68-37819 VISUAL PHOTOMETRY Visual and ultraviolet photometry of six Sb type spiral galaxies 17 p2965 N68-28350 Scene polarization measurements by photographic 20 p3410 N68-32573 VISUAL SIGNALS

Perceived brightness of flashing point sources near and above threshold (AD-660207) 02 p0239 N68-11350

02 p0239 N68-11350 Pilot reaction time as function of flash luminance on from ground signals 07 p0951 N68-17038 and duration (AM-67-24)

Visual and auditory signal responses, including chroatic adaptation, binaural and monaural phenomena. and other psychophysiological da [NASA-CR-93854] 10 p1477 N68-20369

Reproduction of set rhythm of eye movements from (RAE-LIB-TRANS-1288)

14 p2203 N68-24515 Relation between stimulus oriented changes in heart rate and detection of visual signals efficiency in vigilance tasks [AMRL-TR-67-233] 16 p2596 N68-27184

VISUAL STIMULI Accuracy of verbal decisions on distance perception in simulated space environment

11 p1641 N68-21615 Visual beat phenomena and relation to temporal characteristics of visual perception 13 p1999 N68-23251

Attention in identification of stimuli in complex visual displays 13 p2004 N68-23325

Role of attention in Pavlovian of auditory and visual stimuli to co [NASA-CR-94558] conditioning, and use condition rats 13 p2002 N68-24293 . .

Quantitative description of voluntary eye movements in monkey 14 p2206 N68-25022

Stimulus duration and inter-stimution effect on motion perception ulus interval varia-15 p2400 N68-26041

an response to light and noise stimuli 24 p4208 N68-38374 Human [RM-427] Psychon or responses to light, color, and geometric 24 p4208 N68-38440

High intensity intermittent audio and visual stimuli effect on human behavior and physiology [AD-673970] 24 p4205 N68-38486 VISUAL TASKS

ions of task sets in depth and flight conditions 06 p0777 N68-15196 Cue enhance perception tes [AM-67-18]

nformation processing rate crete tracking tasks 06 p0781 N68-15911

ng systems - opt

06 p0781 N68-15915 arning behavior in

06 p0784 N68-15927 Criterion for placement of determination of maximum distance for pilot [TN-2-68] of aircraft instruments and m allowable eye-to- panel 10 p1458 N68-19815

Photometric and electrical re-external lighting environment is ments in F4B aircraft [NADC-AC-6803] 11 p1641 N68-21541

Determination of o geometry for visual ev module landing point

[NASA-CR-92077] 12 p1967 N68-22466 lance in bim 13 p2004 N68-23385

Equipment of ters and visual [ARL/HE-20] riment 18 p3015 N68-30294 digital altimeters by air-

18 p3076 N68-30381 vision and intersemory Compensation for disple onflict as factor in adapts

20 p3409 N68-32259 Vision research - flying and space travel /conference/

21 p3640 N68-34525 [AD-669266] Flash distribution and illuminance level effects on uman search and detection of low intensity, dynamic

21 p3641 N68-34528 mulator for identifying soman operator during

21 p3642 N68-34532 tection and recognition Dynamic visual target de om low altitude aircraft

21 p3644 N68-34542 erational aspects of se of low flying, hig and interdiction type visual problems associates speed aircraft in close-sup-sissions into enemy territor

lated task loading effects on side looking radar [AMRL-TR-67-141] 22 p3817 N68-35942 ation display on side looking radar target re [AMRL-TR-67-134] 22 p3818 N68-35945

AL TRACKING OPTICAL TRACKING VISUALIZATION OF FLOW

VITAMIN B 02 U RIBOFLAVIN VITAMIN C U ASCORBIC ACID VITAMIN G U RIBOFLAVIN

VITAMINS

NT ASCORBIC ACID

NT NICOTINAMIDE

NT RIBOFLAVIN

10 p1462 Ne8-19382 VITON

of viton and analysis of vulci agents to increase ele (D-MAT-150) VITREOUS MATERIALS

prescent vitreous garn sex for h 01 p0081 N68-10380 Structural relation studied to improve a [REPT,-7518-10-P] ships in vitroous infrared materials echanical properties 03 p0356 N68-12209

licate ginnes 11 p1717 N68-20788 bon and var

11 p1719 N68-21305 in disordered vitreous

15 a2338 N68-26320

sis for crystal structure of d polywolframates 18 p3026 N68-30347 ction of vitreous ger-

infrared a manium die [TR-2] 19 n3228 N68-31678

Strength structure materials [REPT.-7518-13-F] 21 p3710 N68-34677

Actinide election, and funior tion heating [CEA-N-856] 22 p3829 N68-35739

VLASOV EQUATIONS

(LGI-67/27) 08 p1218 N68-17638

ional Vlasov-Poisson equa-desendence and external 09 m1400 N68-18407

[NASA-CR-94137] 11 p1765 N68-21832

13 p2163 N68-24122

nieu plasma 15 p2528 N68-26015

16 p2734 N68-27080

time-dependent h charged particle in [LA-3831, ADD.] 16 p2729 Nee-28071

e theory and Visa scitation of longit

17 p2948 N68-28463

lity. Visual equation. 20 p.3555 No.E-32661 -68-13231

21 p3748 Nee-33973

21 p3769 N68-34221

spheres formulated by Flow of rarefled ple 22 p3940 Not-35037

ESD-18-47-1821 04 p0476 1688-13706 4 p0477 N68-13214

on the sale

04 p0477 N68-13215 ch si

NASA-TT-F-112521 15 p2421 Net-25768

13 p1997 No.8-230

NT RADIOTELEPHON TELEP

NASA on-line automatic data switching system for

18 p3143 N68-30116

18 p3146 N68-30707

21 p3671 N68-33700

23 p3995 N68-37031

23 p4158 N68-37307

23 p4158 N68-37312

01 p0039 N68-10717

09 p1315 N68-18598

09 p1320 N68-19202

22 p3874 N68-35134

03 p0343 N68-12319

05 p0698 N68-14007

10 p1507 N68-20441

nces of etric fil

cteristics of low-voltage arc

SU

10

(1)

ne, data, and teletype communications 430561 04 p0483 N68-13425 INASA-TM-X-630561 Voice operated switching circuit for thin film personal communications and telemetry system (NASA-CR-65938) 07 p0963 N68-16583 Improved intelligibility of helium speech at simulated nderwater depth of 400 feet - assessment of high delity recording and frequency shifting mathods IEPT - 68-1] fidelity recordi (REPT.-68-1) Satellites for independent surveillance of ship and aircraft positions and undelayed voice and digital com-REPT.-67-C-316] 14 p2220 N68-24501 Voice communication warning system for army air-(G0131-#U11 15 p2386 N68-26368 Underwater speech communications - bibliographies ICSL/ONR-201 15 n2429 N68-26734 Hearing Ion, sound localization, and speech recogni-tion for underwater voice communications [CSL/ONR-12] To p2618 N68-27011 Voice and telemetry data communication with Apol-lo and other spacecraft on very high, ultrahigh, and S hand framescare. band frequencies (DEV-3796) 16 p2620 N68-27224 Systems feasibility analysis of voice broadcasting to home radio receivers from communication satellites [NASA-CR-95491] 17 p2850 N68-28877 Design and soluti ns of transe itter filter for improved analyg voice com AFCRL-68-02271 20 p3436 N68-32489 Experimental study of channel spacing and trammission speed in voice frequency radio telegraphy systems [TRANS-2383] 22 p3834 N68-35238 VOICE DATA PROCESSING Channel vocoder as speech processor for satellite ommunication terminal 04 p0477 N68-13215 Electric filters for analyzing spectral speech characcx for voice data proce 09 p1304 N68-18803 Muthematical analysis of human ear structure and action as basis for buffer stage device between function as basis for buffer speech signals and computer 09 p1304 N68-18806 Speech signal voice coders in computer control [NASA-TT-F-11252] 15 p2421 N68-25768 History, characteristics, and development of flight ata, cockpit voice, and maintenance recorders in U.S.A. civil aircraft 17 p2887 N68-29195 Digital voice data processor for improved intelligibility of speech generated in helium
[HRB-4007-F-2] 18 p3014 N68-30118 18 p3014 N68-30118 VOID BATIO Critical experiments analysis of uranyl fluoride solu-tion reactors containing large-diameter voided tubes [NASA-TN-D-4270] 06 p0872 N68-15197 Criteria on compactness of imbedd bedding operator 09 p1362 N68-18651 In-core electronic void meter development [AEC-TR-6929] 12 p1876 N68-22656 Ring electrode void meter for measuring void fractions in boiling water reactor [AEC-TR-4930] 15 p2468 N68-26567 Measurement of void fraction in two phase sodium potassium and argon flow by gamma ray attenuation [EUR-3935.F] 18 p3063 N68-30431 Holes in two dimensional space 21 p3711 N68-33692 Sintering uranium trioxide to dense uranium dioxide DP-10851 22 p3884 N68-35679 Electrical is rements of void fraction of two phase flow (KR-1 | 8) 23 p4063 N68-36826 Void fraction, pressure drop, and heat transfer coefficients in two phase flow [NYO-3679-3] 23 p4188 N68-36856 Local void ratio me ent in air-water flow with [CEA-R-3465] 23 p4650 N68-36921

Mathematical model for void collapse in quenched face centered cubic metals as function of time and tem-

01 p0077 N68-10756

VOLATILITY VOLATILIZATION VOLCANICS VOLCANOLOGY (RAE-TR-67087)

Initiation and early development of subcooled void profiles of low pressure boiling water including design of loop and test sections [NYO-3679-1] 02 p0281 N68-11339 Multiple operating points, voltage regulator, and volt-ampere characteristics for photovoltaic power system for Nimbus B astellites [NASA-TM-X-63251] 17 p2810 N68-28709 Volt-ampère curves, efficiency, and photovoltaic properties of electron irradiated solar cells [NASA-TM-X-63272] 17 p2816 N68-29436 Metallographic study of microstructure in void for-sation in deformation of nichrome or steel D6-19772] 18 p3086 N68-29594 Space charge, electrophoresis, and volt-ampere saracteristics in transport of plasma sheath using gas Gas-liquid chromatographic analyses of volatile inor-anic fluorides and thermodynamics of solution of elected metal halides discharge tube [AFCRL-68-0149] Volt-ampere chara 11 p1645 N68-20682 Vaporization rate measurements for volutinty amay-sis on hydrocarbon fuels at low pressures 16 p2748 N68-27857 Stability theory for superconductor carrying transport current in resistive mode [RR-290] 20 p3576 N68-33513 U VAPORIZING Current voltage characteristics of space charge cur-rent in gas diodes U VOLCANOLOGY Solar cell testing, and procedures and apparatus for determining silicon solar cell output [ESRO-TM-133/ESTEC/] Lunar volcanism model based on high temperature radiative thermal conductivity of minerals and rocks [NASA-CR-916] 01 p0055 N68-10283 Investigation of nonlinear negative resis semiconductor thyratrons based on dielectric Geology of Bougainville and Baka Islands, New 02 p0206 N68-11446 Volt-ampere characteristics determ p-silicon pressure contact Bibliography on chemical products of volcanism on earth and moon [NASA-CR-91073] 03 p0337 N68-11943 Calculation of volt-ampere characteristics of metal-semiconductor point contact with allowance for gap and two types of charge carriers 23 p4158 N68-37313 Rocket propellants manufactur fluids associated with lunar volcan ofactured from geothermal 08 p1229 N68-17362 Preferred classification of calderm and volcano- tec-tonic depressions based on relative amounts of lava and proclastic ejecta [NASA-CR-93188] 08 p1166 N68-17373 U ELECTRIC POTENTIAL VOLTAGE AMPLIFIERS Soviet-bloc research on terrestrial geophysics, vol-canology, seismology, and gravimetry 10 p1526 N68-20533 High duty cycle high performance log video amplifi-[DSD-TM-181] Inolation amplifier circuits and signal voltage coupling between two differing common-mode poten-Modified heat flow model for magma extrusion and NASA-CR-62060] 12 p1866 N68-22109 [EP-RR-13] Organic geochemistry of terrestrial samples, setsorites, and volcanic materials in preparation for Two-amplifier method for network synthesis of ra-tional voltage transfer function 12 p1869 N68-22773 Networks with unity gain voltage amplifiers [AFCRL-67-0553] 11 p1674 N68-21462 Classification scheme for eruptive processes based on physico-chemical principles [NASA-TT-F-11589] 14 p2248 N68-24944 Common mode voltage rejection in low level data acquisition system Paleomagnetism of volcanic rock, and remanent and hermoremanent magnetization VOLTAGE BREAKDOWN
U ELECTRICAL FAULTS 16 p2652 N68-27239 VOLT-AMPERE CHARACTERISTICS VOLTAGE GENERATORS

NT PHOTOVOLTAIC CELLS Nondimensional forms of voltage-current characteristics correlated for wall-stabilized, free burning, and Circuit design, fabrication, and packaging work on analog voltage to duty cycle generator [NASA-CR-90334] 02 p0188 N68-11299 03 p0428 N68-12803 Device for measurement of small deviations from Digital technique to generate single valued functions of voltage versus time ohmic law by recording second derivative of passive electric bipole current-voltage characteristics [AFOSR-67-2785] 06 p0880 N68-15634 Current-voltage characteristics of tunneling p-n junctions in semiconductors [NASA-TN-D-4403] 09 p1315 N68-19062 Direct current inductor variation for X ray generator Sawtooth waveform voltage generators using silicon Current-voltage characteristics of collisionless cylindrical diode with thermionically emitted electrom [NASA-TN-D-4516] 11 p1677 N68-21122 [CM-R17-4.5] Pressure temperature and ma electrical arc confined in cylin agnetic field distribution indrical tube 12 p1915 N68-22127 JUL-507-PCI Electrical characteristics of gallium arsenide p-n junctions used as solar cells [RAE-LIB-TRANS-1287] 14 p2190 N68-24366 Structure in dc current-voltage curves of tunnel junc-tions due to interaction between Josephson ac current and electromagnetic field 14 p2331 N68-25004 Transient thermodynamic analysis for development of mathematical model that predicts transient tempera-ture and voltage-response characteristics of fuel cell [NASA-TN-D-4601] 14 p2193 N68-25304 Voltage-ampere characteristics and electrical break-down from ion impact in bulk silicon

16 p2744 N68-27621

etrode polarography 17 p2837 N68-28445

Analog differential readout methods for improving curacy of data on voltametric behavior of systems

curacy of data on voltame ad applications to stationary

Construction and operation of blanking generator for Bendix multiplier in time of flight mass spectrome-11 p1630 N68-21371 High voltage generator for wire spork chamber pulsing using hydrogen tetrode thyratrons [CERN-68-26] 20 p3456 N68-32809 VOLTAGE MEASUREMENT U ELECTRICAL MEASUREMENT VOLTAGE REGULATORS Busic building blocks di scussed for formation of power conditioning systems for satellites [TR-1001/2307/-6] 03 p0303 N68-12046 Short circuit current switching device with explosive triggering for high voltage network

Ob p0813 N68-15045 Satellite power supply control systems analysis of solar cell array battery [ESRO-TM-54/ESTEC/] 09 p1273 N68-18466 Pulse width modulated switching voltage regulators pplied to Maximum Power Point Tracking /MPPT/ 09 p1274 N68-18503

ORO-3198-29]

VOIDS

NDEX SUBJECT INDEX Electrical and mechanical design concepts, and per-ormance specifications for expanded scale ac voltage 90 8-28709 [NASA-CR-65982] 09 p1340 N68-18517 ovoltaic EMSE123 phase sensitive demodulator development 8-29436 [NASA-CR-65984] 09 p1314 N68-18518 ampere sing gas Trammitter audio amplifier module module, summing network modules, amplifier for thin film personal comm er module, low pass filter modules, and operational -30116 telemetry system INASA-CR-659291 09 pl302 N68-18543 ge arc Voltage controlled oscillator stability specifications for phase locked communication systems
[ESD-TR-68-81] 15 p2429 N68-26668 -30707 trans-Experimental evaluation of ferroresonant and feed-back alternating current line voltage regulators in 15 kilowatt auxiliary power system (NASA-TN-D-4627) 16 p.2595 N68-28101 -33513 ge cur-Multiple operating points, voltage regulator, and volt-ampere characteristics for photovoltaic power system for Nimbus B satellites [NASA-TM-X-63251] 17 p2810 N68-28709 33700 tus for 37031 Breadboard model of Brayton cycle alternator and voltage regulator-exciter [NASA-TN-D-4697] 18 p3004 N68-29960 ces of 18 37307 Transfer functions, digital computer program, and equations of state in studying dynamic stability of voltage regulated synchronous machine etal to 18 p3051 N68-30034 37312 Circuit development for improving low input voltage conversion regulation from primary /radioisotopic fueled thermoelectric generators/ and secondary /butmetal-r gap 37313 tery/sources [NASA-TM-X-63118] 18 p3005 N68-30197 Design and testing of 1200-Hz alternator and voltage and frequency controls for Brayton space power [NASA-TM-X-52453] plifi-19 p3202 N68-31042 Direct current to direct current inverter circuit with constant output voltage [NRL-6714] 19 p3203 N68-31290 0717 dtage oten-Electronic device for adjustment and control of samma radiation monitor [RISO-M-678] 19 p3280 N68-31904 8598 f ra-Automatic system of voltage regulation with an electrolyte and mercury cathode regulator [RTS-4193] 20 p3477 N68-32430 9202 Synchrocyclotron frequency and amplitude control through grid pulse biasing of high frequency oscillator [JINR-P9-3805] 22 p.3918 N68-35773 1462 data Error analysis on recovery data of voltage to frequency data acquisition system of sinusoidal, step, and ramp inputs 1134 and ramp inputs [AEDC-TR-68-143] 23 p4019 N68-36395 Digital generation of acceleration voltage for mass pectrometer, and development of low power, non-estructive readout, plated-wire memory 23 p4066 N68-37414 OB. Design analysis and operating characteristics of voltage step-down dc-to-dc regulated converter with hysteretic bistable trigger 299 ons 24 p4199 N68-37510 319 16-channel FM telemetry system with voltage con-Hor 24 p4222 N68-37559 INASA-CR-923401 907 VOLTAGE VARIATION INDICATORS
U VOLTMETERS nos

141

tor ne-

71

00

of

15

nf

VOLTERRA EQUATIONS Topological dynamics theory applied to nonlinear [NASA-CR-94107] 11 p1731 N68-21400 Volterra functional analysis of nonlinear systems ith deterministic and stochastic inputs stic inputs 18 p3050 N68-29923 Instabilities in numerical solutions to Fredholm and Volterra integral equations of first kind - solution by Chebyshey polynomials (CEA.R.3427] 18 p.3103 N68-29981 18 p3103 N68-29981 Volterra solutions for impact forces in dynamic response of elastic bodies 24 p4346 N68-37554 Transient pulse propagation through linearly iscoelastic medium formulated as Volterra integral [AROD-4547-39-E] 24 p4349 N68-38067 VOLTMETERS OLTMETERS
Small voltages measured by quantum interference
device with Josephson tunneling junctions
device with Josephson tunneling junctions
D5 p0635 N68-14451

Calibration procedures for electronic voltmeter true root mean square models 910A and 910R [NAVAIR-17-20AE-52] 09 p1346 N68-19467

nce and voltage control for 12 p1820 N68-22371 NT BODY VOLUME (BIOLOGY) Table of factors for calculating volume of helium in cylindrical steel containers
[BM-9C-8367] 08 p1140 N68-17562 Instability in pre rotodynamic pumps [SP-914] sure volume characteristics of 20 p3489 N68-33111 Statical method of minimal design for nonlinear olume functionals extended by variational calculus 21 p3711 N68-33702 **VOLUMETRIC ANALYSIS** Method for calculating partial volumes of com-NASA-TN-D-41991 02 p0178 N68-11621 Design and volumetric analysis of pressurized tanks for use in liquid-methane fueled supersonic transport aircraft [NASA-TN-D-4293] 03 p0422 N68-12370 Density and molar volume measurements on sulfide lead melts and copper lead melts 13 p2083 N68-23825 Modified stirred reactor method for kinetic studies of free radical reactions using time of flight mass spec-15 n2409 N68-26082 Electronic counter for analysis of bacterial cultures in liquids (ISS-67/43) 16 p2605 N68-27700 Design and performance of laboratory instrument for measuring dissolved gas quantity in liquid 16 p2749 N68-27861 metric analysis of fission ranium oxide rods 16 p2709 N68-28172 Spectrographic and volumet ases released within spent uran WCAP-6087 Bibliographic review of experimental data on ther-modynamic properties, compressibility, isotherms, and PT relations for belium [BM-C-338] 18 p3024 N68-30195 Thermodynamic, volumetric, and entropy data for design of high pressure synthesis technique for new compound phases [APCRL-68-0109] 19 p3223 N68-31143 VORTICES orption measurements of a solid surfaces 21 p3649 N68-33946 Volumetric physical adsorpt relative energy distribution on so VON KARMAN EQUATION Unsymmetrical large deflection 14 p2356 N68-24937 Temperature effect, stress analysis, and aerodynamics of Von Karman radome 15 p2570 N68-26353 ITG-9821 Karman-type integral methods for studying isother-al, turbulest, plane, axisymmetric jet TD-MT-24-173-67] 23 p4047 N68-36379 (FTD-MT-24-173-67) VON MISES THEORY
U STRESS FUNCTIONS VON ZEIPEL METHOD ry for artificial satellites with using Von Zeipel method 16 p2770 N68-28251 Perturbation theory for Elimination of short period terms of first order general planetary theory through Von Zeipel method and Hori canonical variables (NASA-TM-X-63257) 17 p2968 N68-28687 VOR SYSTEMS

U. VHF OMNIRANGE NAVIGATION VORTEX BREAKDOWN Inviscid and viscous me breakdown phenomenon [AS-67-14] iels used to compute vortex 04 p0496 N68-13641 tics of radial inflow gases in vortex tubes [NASA-CR-1029] 12 p1860 N68-22200 VORTEX COLUMNS
U VORTICES U VORTICES U VORTICES **VORTEX GENERATORS** RTEX Germanion and decomposition or communicate with laminar boundary layer 08 pl 165 Non-18168

Analysis of turbulent wa sonic shear layers [NASA-CR-888]

ulent wall pressure field under super-

12 p1859 N68-22087

VORTICES Performance of vortex generators installed aft of inlet throat on centerbody evaluated at Mach numbers 2.0 to 3.0 [NASA-TN-D-4675] 17 p2802 N68-28795 Low pressure swirl chamber studies of water and air [ARL-68-0072] 20 p3461 N68-32662 Flow behavior in an electromagnetically driven con-ned vortex with high positive radial Reynolds num INASA-TM-X-60512] 21 p3749 N68-34202 **VORTEX INJECTORS** Wall injection area and axial bypass effects on flow pattern of stagnation surface in radial inflow vortexes [NASA-CR-1028] 12 p1904 N68-22088 Performance of vortex valve controlled secondary injection thrust vector system for solid propellant rocket motor control [NASA-CR-66692] 23 p4161 N68-36624 23 p4161 N68-36624 ORTEX RINGS Size measurements and charged beam interactions of vortex rings in helium 2 14 p2324 N68-25001 Design of toroidal stream flowmeter and vortex axis USAAVLABS-TR-68-111 19 p3276 N68-31317 Mathematical model for predicting behavior of vor-tex rings formed by free falling drops impinging on free 22 p3856 N68-35050 Computer calculated rotation symmetrical intake contour analysis by singularity method [REPT.-62-A-12] 23 p4162 N68-37334 VORTEX STREETS Shock wave-vortex sheet interaction concept for ef-cts of winds and inhomogeneous atmosphere on sonic [NASA-CR-92676] 07 p0936 N68-16916 hind cylindrical bodies ng fluids 22 p3862 N68-35521 Vortex street formatio placed in stratified stable (D1-82-0736) VORTEX TUBES

U HILSCH TUBES

U VORTICES dary vortex flows in pipes detected by electrostatic probes [AROD-4942-7-E] 01 p0052 N68-10820 Macrovortices and transient stability in hard superconductors (MIT-3700-5) 01 p0126 N68-10883 ipating oddies and inertial Kolmogoroff scaling of dis shrange in turbulent flow subrange in turbulen [NPL-XERO-1220] 03 p0334 N68-11925 Concentration mechani wake rollup behind airfoil [ASRL-TR-143-1] n of vorticity, and vortex 03 p0296 N68-12161 Tip vortex effect on helic or posts N68-13150 Flow and sound field calculations of two dimensional spinning vortices using method of matched arymptotic expansions 04 p0544 N68-13205 of jet driven vortex flow IORNL-TM-1896) 04 p0553 N68-13370 Analytical model and wind tunnel tests to study vor tex separation on slender bodies of elliptic cross section [MIT-TR-138] 06 p0763 N68-15685 flow vertices using Flow distributions in rotating peripheral wall w [NASA-CR-991] 07 p1028 N68-16478 Flow visualization and or wall-jet vortex tabe with re-sperimposed axial flows [NASA-CR-992] 07 p1033 N68-17131 es with radial outflow in low vortex tube 08 p1207 N68-18243 al density distribution Optical means in high speed cor [ARL-67-0234] 11 p1685 N68-21303 hais of kinematic motion of IMM-364 11 p1092 NGS-21540 of hydro-thermodyramic 12 m1995 No.8-21992

SUB.

E

Syste durit [NA

Cr

Sia Voya [NA:

DSN NAS

Lo

paylor NAS

Ult

Vo

Vo

NAS

INAS

Los

INAS

Sun electro {NAS.

U FI

U VI

VTOL A

VULCAL

VULCA

Ana ductivi mecha

Vuk INAS/

Tear vulcan lizing e

VULCAN

Vulc

D-MA

Vulc. fur diox [TRAN

Rubb (CEA-

VZ-12 AL

Effect of external vortex on boundary layer at as-isymmetric stagnation point determined by rhenelectri-cal technique [ONERA-TP-507] 12 p1860 N68-22149 Correlation between acoustical signature and analytical predictions of vortex interactions in tip vor-tices of helicopter rotors 12 p1816 N68-22506 Numerical analysis of velocity distributions of confined vortex [K-1732] 12 p1863 N68-22813 Dispersion equations for nucleon-de 13 p2121 N68-24059 Similitude requirements for mo odels of vortex tube 14 p2236 N68-25020 Characteristics method for computing two dimen-onal equilibrium and perfect gas vortex flows sional equilibrium and perfect gas vortex flows [NASA-TT-F-11694] 15 p2430 N68-25795 Vortex effects on stagnation temperature for flow of viscous gas in turb [FTD-MT-67-47] 15 p2381 N68-26301 Turbulent wake structure behind body of revolution at various angles of attack [TG-230-T546] 15 p2455 N68-26470 Aeolian tones from circular cylinders and sheddin vortices at natural frequency, and flow velocity, sour intensity, and cross correlation technique (REPT.-76028-2) 15 p.2455 N68-2661 15 p2455 N68-26696 Index for power consumpt in geometry of vortex valve [NASA-TM-X-59869] mption resulting from changes 16 p2593 N68-27471 Experimental survey of vortex flows generated by straight wings and delta wing, and bibliography on vortex flows tex flows (D1-82-0683) 16 p2649 N68-27887 Comervation of utions to describe behavior of convective elements in rotating medi [ARL-1524-3] 16 p2796 N68-27971 Vortex valve for hot gas flow modulation in secondary injection thrust vector control system [NASA-CR-1091] 16 p2751 N68-28112 n shear flow 17 p2870 N68-28441 sional vortices in she Vertical vortices and influence of electric field on free-convective heat transfer coefficients from flat plate heated in air 17 p2986 N68-28678 Bibliography on vortex flows for fluid dynamic containment of gaseous nuclear rocket fuel [NASA-CR-95629] 17 p2915 N68-28813 Subsonic wind tunnel studies of vortices on slender rotating bodies and effects on aerodynamic coefficients [ISL-10/66] 17 p2804 N68-29391 Axial flow in directed wall jet vortex tubes studied for application to gaseous nuclear rocket technology [NASA-CR-95730] 17 p2918 N68-29503 Atmospheric scattering of sonic booms by turbulent vortices along boundary layers [NPL-AERO-1260] 18 p3001 N68-29892 Hodograph equations for inviscid rotational com-pressible flows and supersonic blust body problem 19 p3264 N68-31242 nd vortex amplifier optimization 20 p3401 N68-32409 Hydraulic compou [NASA-CR-96226] Fluidic control of high hydraulic pressure by means of hydrodynamic vortex phenon (NASA-CR-96234) 20 p3403 N68-33112 Wind cosmel study of unsteady lift forces generated by vortex shedding about large, stationary, and oscillat-ing cylinder at high Reysolds numbers (NASA-TM-X-6)214) 21 p3682 N68-34326 21 p3682 N68-34326 Driving mechanism of strongly developed Taylor 23 p4046 N68-36263 dy of rotational relaxation in low density hypersonic free jet using impact press 23 p4046 N68-36328 Predicting flow patterns of vortex tubes at high NASA-CR-97113] 23 p4048 N68-36412

scribing potential vortex

23 p4157 N68-37261

mary surface 23 p4051 H68-37043

VORTICITY [SF/TN/2] [NYO-3317-3] with severe weather of [ERLTM-NSSL-38] VORTICITY EQUATIONS [ARC-R&M-3467] VOSTOK 3 SPACECRAFT VOYAGER PROJECT schedules, and costs [NASA-CR-89998] Voyager project stu powered by radioisoto planetary quarantine, r ment and control [NASA-CR-89994] Voyager project imp [NASA-CR-89999] veyor projects [NASA-CR-90544] Critique of possible experiments for 1973 Voyager

Finite difference numerical solution of elliptic dif-rential equations for transport of matter, vorticity, ad heat in two dimensional flows 01 p0148 N68-10130 Vortex shedding behind flat plate to study vortex motions in wake flows 09 p1329 N68-19196 Inviscid supersonic flow over slightly yawed conical 11 p1683 N68-20926 Transport and diffusion of stratospheric radioactivity used on synoptic hemispheric analysis of potential 15 p2497 N68-26704 Index for power consumption resulting from changes in geometry of vortex valve [NASA-TM-X-59869] 16 p2593 N68-27471 16 p2593 N68-27471 Thunderstorm rotation about vertical axis caused by vertical shear in low level wind inflow and correlation 17 p2908 N68-29061 Numerical method for calculating steady axially sym-setric spiraling motions of incompressible fluid at age Reynolds numbers abers 06 p0829 N68-15762 Effect of synoptic analysis errors on predictions made with barotropic vorticity equation written in spectral form 14 p2284 N68-25077 Solution to equations describing potential vortex flow adjacent to stationary surface [ORNL-TM-2262] 23 p4051 N68-37043 Stability and convergence of finite difference scheme or solution of barotropic vorticity equation EMM-66-134] 24 p4290 N68-38447 VOSKHOD MANNED SPACECRAFT Equatorial coordinate observations during October 1964 for Soviet artificial satellites in Elektron, Cosmos, Polyot, and Voskhod series 05 p0736 N68-14170 Physiological reactions of pilots during simulated egress from Voskhod spacecraft [JPRS-44209] 06 p0773 N68-15339 Programmed physiological effects of astronaut per-formance during Voskhod space missions [SAM-TT-R-946-0468] 22 p3812 N68-35465 Vostok 3 and 4 biotelemetry systems [NASA-TT-F-11528] 08 p1134 N68-18193 Performance assessment of attitude control system during coast flight, and of thrust vector control system during powered flight of Voyager spacecraft [NASA-CR-89996] 01 p0137 N68-10066 Voyager spacecraft 01 p0137 N68-10066 Spacecraft configurations and propulsion system module design for Voyager project, based on lunar module descent stage applications [NASA-CR-89997] 01 pol 38 N68-10239 01 p0138 N68-10239 Implementation definitions forcepts covering spacecraft deschedules, and costs s for Voyager project con-development, operations, 01 p0138 N68-10259 mmaries on spacecraft ermoelectric generators, ancy, and data manage-01 p0139 N68-10370 Design and implementation of radioisotope ther-moelectric generators providing electric power to Voyager spacecraft bus (NASA-CR-89995) 01 p0139 N68-10371 ion definition 01 p0139 N68-10385 Voyager spacecraft thermal insulation system (evelopment and testing [NASA-CR-90337] 02 p0274 N68-11264 Engineering and scientific work on Mariner 4, Mariner Venus, Mariner Mars 1969, Voyager, and Sur-02 p0272 N68-11643 Martian surface characteristics by ren critique of 1973 Voyager experiments, liq intence on Mars, and atmospheric proper ments on Mars {DAC-60841} 04 p0380 tics by remote sensing iments, liquid water ex

04 p0580 N68-13882

04 p0581 N68-13884

Muriner, and Voyager planetary-interplanetary flight projects, and Serveyor lunar program [NASA-CR-91775] 05 p0745 N68-15004

Applicability of Saturn/Apollo checkout system and support equipment to Voyager project [NASA-CR-93563] 09 p1323 N68-19091 Comparative evaluation of centralized versus decen-ralized computer system for digital data processing on 09 p1311 N68-19092 Chemical kinetics analysis of Mars atmosphere com-position and physical properties [NASA-CR-93537] 09 p1424 N68-19093 Alternate methods of performing photoimaging ex-periments of Martian surface from orbiting Voyager [NASA-CR-93551] 09 p1344 N68-19094 Summary of Voyager spacecraft systems analysis and engineering tasks [NASA-CR-61660] 09 p1433 N68-19095 Systems analysis and engineering, operational sup-port and mission-dependent equipment, and spacecraft definition for Voyager Mars project [NASA-CR-93564] 09 p1433 N68-19096 Standard trajectories and parameters for design of Voyager spacecraft, and performance prediction, inter-faces, and reliability of spacecraft subsystems [NASA-CR-93559] 09 p1433 N68-19097 Systems analysis and engineering, science payload, science data automation equipment, contamination control, and photoimaging concepts for Voyager Mars spacecraft [NASA-CR-93561] 09 p1433 N68-19098 Effect of radioisotope thermal generators in flight capsule on Voyager spacecraft configuration [NASA-CR-93563] 09 p1433 N68-19099 [NASA-CR-9303]
Systems engineering update of preliminary spacecraft configuration for Voyager 1973 mission [NASA-CR-61061]
Op p1434 N68-19100
Voyager spacecraft configuration, systems and trajectory analyses, and system integration interfaces [NASA-CR-93550]
Op p1434 N68-19101 Functional descriptions, interfaces, performance, nd physical characteristics of Voyager 1973 flight pacecraft telecommunication system NASA-CR-93552] 09 p1434 N68-19102 spacecraft telecomm [NASA-CR-93552] Baseline design and functional requirements of Voyager spacecraft guidance and control, computer and sequencer, and power subsystems, and electrical [NASA-CR-93539] 09 p1434 N68-19103 Structural design and engineering mechanics of baseline Voyager spacecraft, propulsion support, and planetary scan platform
[NASA-CR-95962] 09 p1434 N68-19104 Voyager spacecraft design standards, and opera-onal support and mission-dependent equipment requirements [NASA-CR-93558] 09 p1435 N68-19105 Systems engineering data and recommended Voyager spacecraft configuration for Martian launch opportunities 1973-1979 [NASA-CR-61642] 09 p1435 N68-19151 Systems engineering, structural design, and per-rmance data on recommended Voyager spacecraft [NASA-CR-93534] 09 p1435 N68-19152 Trajectory analysis, reliability of spacecraft equipment, performance prediction, and functional requirements of Voyager Mars spacecraft [NASA-CR-93554] 09 p1435 N68-19153 Structural design and systems engineering data on echanical subsystems of recommended Voyager accoraft configuration spacecraft configura [NASA-CR-93533] 09 p1436 N68-19154 Systems engineering and performance data on electrical subsystems for recommended Voyager spacecraft configuration [NASA-CR-93549] 09 p1436 N68-19155 Systems analysis and tradeoff data on electrical absystems for recommended Voyager spacecraft con-NASA-CR-93528] 09 p1436 N68-19156 Science experiments, photoimaging equipment, and Voyager spacecraft configurations for studying Mars atmosphere and surface temperature [NASA-CR-93538] Op p1436 N68-19157 Design alternatives and growth potential of recom-ended and upgraded Voyager spacecraft configura-NASA-CR-93560) 09 p1436 N68-19158 Systems analysis and prelimission dependent and operat for Voyager Mars spacecraft [NASA-CR-93536] ninary requirements for ional support equipment 09 p1305 N68-19159 requirements for Voyager e-Freen 12 gas as biocidal agent 09 p1437 N68-19160

WAFERS Magn [QR-4] Feasil memory [NASA-Diffu altering in wafer [NASA-

WAGONS

W WINGS

Solution to equation flow adjacent to station [ORNL-TM-2262]

Theory of vortices in type II sen

Linearized analysis of mass transfer effects on con-fined luminar vertex axial axisymmetric flow [ARL-68-0071] 24 p4246 M68-38013

X

191

18

93

ex-

94

ind

96

197

98

ght

вгу

00

and

01

02

of ter cal

03 of

04

105

ied ich

151

er-

152

153

on

154 lec-ruft

155 ical on-

156

157

188

for

159

ring analysis of shroud, temperature control, e heating in recommended Voyager configuration 1,035751 Engineers and plume craft co IS
AIRCRAFT WAKES
HELICOPTER WAKES
HELICOPTER WAKES
HYPERSONC WAKES
LAMINAR WAKES
PROPELLER SLIPSTREAMS
SLIPSTREAMS
SLIPSTREAMS
STURBULENT WAKES NASA-CR-93525] 09 p1437 N68-19161 Systems engineering analysis of photoimaging systems for optimum photographic coverage of Mars during 1973 Voyager mission [NASA-CR-94669] 09 p1344 N68-19162 Critical time integrated heating loads and critical ressure loads and heating rates for Voyager entry cap-Similarity, and corresponding similar solutions in compressible, laminar, two dimensional, linearized wakes and jets subjected to streamwise pressure sule trajectories (NASA-CR-66580) 11 p1789 N68-21743 Single versus multiple engi Voyager capsule bus propulsion [NASA-CR-94539] AE-270A, PT. 1] 02 p0200 N68-11488 13 p2142 N68-23181 on in plumes and building Variation of concents Surveyor project, Mariner program, and Voyager roject research activities and Deep Space Network [BNWL-SA-1400] 02 p0232 N68-11506 project research act /DSN/ operations [NASA-CR-94683] Concentration mechan wate rollup behind airfoil [ASRL-TR-143-1] n of vorticity, and vortex 14 p2352 N68-25649 Load relief study for control system to improve nunch probability of Saturn 5 booster with Voyager 03 p0296 N68-12161 NASA-CR-61867] 17 p2976 N68-28895 Ultrasonic energy assaying of microorganisms comminating Voyager project planetary probes 17 p2826 N68-29345 Ion and electron measurem-biting Gemini 10 spacecraft Voyager spacecraft terminal guidance system analy-[NASA-CR-61909] 19 p3372 N68-31201 Voyager and Mars Excursion Module baseline mis-sion and stage analyses - spacecraft propulsion [NASA-CR-96988] 22 p3953 N68-35592 Load relief control system to improve launch proba-bility of Saturn 5 booster with Voyager payload [NASA-CR-61956] 22 p3966 N68-35622 Of recently wa [TM-6/331] NASA-CR-61956]
Sammary of Mars probe mission planning to provide ectron density profiles of ionosphere
NASA-CR-98001]
23 p4167 N68-36468 electron density profile [NASA-CR-98001] VTO FIGHTER AIRCRAFT
U FIGHTER AIRCRAFT
U VERTICAL TAKEOFF AIRCRAFT U VERTICAL LANDING U VERTICAL TAKEOFF [NASA-TM-X-63150] VTOL AIRCRAFT
U VERTICAL TAKEOFF AIRCRAFT Boundary layer equation wakes in tailored pressure gra [D1-82-071] VULCANIZATES
U VULCANIZED ELASTOMERS VULCANIZED ELASTOMERS Wind tunnel wall effe [NASA-TM-X-59742] Analytical and experimental study of electrical con-ductivity of rubber - carbon black vulcanizates under mechanical and thermal stress 06 p0857 N68-15148 Vulcanizable elastomers for use with figuid oxygen [NASA-CR-61530] 07 p1011 N68-16438 Tear resistance of carbon black-filled and unfilled vulcanizates of amorphous elastomer and strain crystal-lizing elastomer 20 p3509 N68-32530 fields [PIBAL-68-9] Growth rates of single cracks for vulcanizates of butyl rubber in ozonized oxygen atmosphere 21 p3707 N68-33901 Wake flow properties behind two dimens slender bodies at Mach 6 Vulcanization of viton and analysis of vulcanizing agents to increase elastomers thermal stability [D-MAT-150] 18 p3098 N68-29746 Vulcanization of butadiene-nitrile rubbers with sulfur dioxide and hydrogen sulfide introduced on zeolite [TRANS-1528] 22 p3896 N68-35675 Rubber latex vulcanization by irradiation [CEA-R-3345] 23 p4085 N68-37026 VZ-12 AIRCRAFT U P-1127 AIRCRAFT Ocher reten W

W WINGS U VARIABLE SWEEP WINGS WAFERS Magnesium wafer cells tested for thermal stability [QR-4] 04 p0449 N68-13228 Feasibility study of random access laminated ferrite memory system for spacecraft use [NASA-CR-6e63e] IS p3040 Nell-30088 Diffusion welding of large area silicon waters without tering electrical properties of semiconductor devices m wafers [NASA-CR-96283] 20 p3487 N68-32663 WAGONS U TRAILERS

Downwash angles of flow behind rectangular wings of low aspect ratio at subsonic velocities calculated ac-cording to nonlinear equations [RAE-LIB-TRANS-1247] 03 p0299 N68-12792 ents in wake structure of 05 p0736 N68-14162 Theory for upstream wakes in compressible, incompressible and plasma flows
[REPT.-67-25] 07 p1056 N68-16285 Peak average and average peak radar cross sections freentry wakes or chaff 08 p1148 N68-17928 Model test determinations of wake, and thrust ynamics for fishing trawler, and bulk carrier 09 p1415 N68-19074 Steady state simulation of flow induced in wake of in-ternally propelled supersonic vehicle in infinite tube [TR-AE-6704] 10 p1455 N68-19538 Variations in magnetic field in lunar wake deter-ined by solving Maxwell equations for steady state 10 p1593 N68-20085 ns representing jets and dient 12 p1859 N68-22124 all effects for highly deflected wakes 742] 14 p2182 N68-25433 Acolian tones from circular cylinders and shedding vortices at natural frequency, and flow velocity, sound intensity, and cross correlation technique [REPT-76028-2] 15 p2455 N68-26696 lechnique 15 p2455 N68-26696 Predictions of response characteristics of aircraft panel exposed to pseudo-sound fields of jet wake [D6-9944, V. 4] 17 p2804 N68-29231 Behavior of three dimensional wake and jet flow 19 p3265 N68-31398 20 p3391 N68-32333 Integral theory for turbulent base flows at subsonic and supersonic speeds 20 p3463 N68-32960 Two dimensional flow induced by body moving at onstant speed through linearly stratified fluid 21 p3677 N68-33622 Effect of wake persmeter on characteristics of an axisymmetric turbulent jet in wake flow
[FTD-HT-67-311] 23 p4049 N68-36614 Drag of small body in wake of large satellite derived from density and momentum flux calculations for free molecular flow at high speed ratio 23 p4173 N68-37333 Effect of wake flow on variation of concentration in lumes and building wakes 24 p4255 N68-38383 WALKING Metabolic cost of walking on treadmills of various ope before and after loading of principal body seg-INASA-CR-1042] 12 p1826 N68-21859 WALKING MACHINES omatic control system for a leg operated locus (USCEE-273) 19 p3258 N68-32067 WALL PLOW eady state flow of anisotropically conductive ds between parallel porous walls

WALL JETS netrochemical method for stress distribution of flow area Reynolds number range 60-340 [REPT.-2] d for measuring wall shoar around circular cylinder at 05 p0648 N68-14626 Wall section effects on turbulent flow in porous 05 p0649 N68-14997 (ISL-T-4/67) 06 p0918 N68-15224 quations of motion m for flow geometry in channels FTD-HT-66-518] on of wall effects in open and closed wind 12 p1817 N68-22508 Wall heat transfer to circulating boiling mercury and agreeium amalgams NL-TR-176) 12 p1983 N68-22513 New two parameter family of mean velocity profiles for incompressible turbulent boundary layers on smooth walls [ARC-R&M-3463] 12 p1863 N68-22654 12 p1863 N68-22654 tions in turbulent wall Friction and pressure fi flow with polymer additive [USL-881] 13 p2051 N68-23256 Selected hand cross correlating pressures under turbulent bo [NASA-CR-1066] on analysis of fluctuat-sundary layer flow 13 p2052 N68-23482 nterference induced by ar-on steady and oscillating [AEDC-TR-68-42] 13 p1988 N68-23874 lighly deflected wakes 14 p2182 N68-23433 Wind tunnel wall offe [NASA-TM-X-59742] Energy spectra of streamwise fluctuating velocity and mean velocity in study of viscous sublayer along all in turbulent pape flow 18 p3061 N68-29977 cts on adiabatic wall film ind tunnel flow 18 p3064 N68-30609 Gas density gradient effecting in two dimensional w [ARC-29928] Particle transport in to ent flow to channel or WAPD-TM-765) 18 p3064 N68-30634 Flow and velocity distrit-tion near amouth wall in to ero pressure gradient MD-20) in in turbulence produc-lent boundary layer with 18 p3064 N68-30641 d gas discharge confined by asymptotic methods 19 p3338 N68-31138 y as substitude to to fluidics 20 p3466 N68-33284 re and streamline disturbance supersonic flow past ablating (DAC-62375) 23 p4044 N68-36108 Magnetic field effects on insubility of boundary layer flow over concave wall [ORNL-P-3297] 23 p4141 N68-36427 a of wall present under BN-1557] 24 p4245 N68-37745 plution for flow of non-ty layers with variable 24 p4245 N68-37786 Hypersonic serodynami repnes at high incidence 24 p4196 N68-38483 WALL JETS Improved method for predicting adiabatic wall effectivemen of uniform-density, two-dimension just flow [TWF/TN/30] 01 p0030 3468-10330 Mean properties of terbulent three dimensional incompressible jets insing into quiescent ambient in [PIBAL-1022] 06 p1164 1468-18024 Influence of mass injection, through mouth and rough nurfaces, on turbulent boundary layer and wall jet development [TWF/R/3] 10 p.1516 [Mad. 19987 DLR-FR-49-251

tial flow in di

(AD-673200)

02 p0256 N68-11683

22 p3886 N48-33705

08 p1115 N68-18224

08 p1116 N68-18225

08 p1116 N68-18228

08 pl116 N68-18229

08 p1116 N68-18230

08 p1116 N68-18231

08 p1116 N68-18232

SUB

WAR

pro N

WASI

WAS

rac

WAS

T

Transient behavior of switching jet in model wall reattachment type of bistable fluid element 23 p4043 N68-36051 Shapes and stresses calculated for ascending bal-INCAR-TN-251 03 p0419 N68-11950 Asymptotic nonequilibrium behavior of macroscopic arameters of particle flow generated at wall at high 06 p0827 N68-15610 Measurements of wave number/phase velocity spec-trum of wall pressure beneath turbulent boundary layer INPL-AERO-12241 06 p0829 N68-15776 Wall pressure distribution in supersonic wind tunnels 06 p0823 N68-16034 Role of diffuser in spurious pressure fluctuations in (NPL-AERO-1237) 10 p1518 N68-20398 Statistical analysis of local wall pressure fluctuations in gas fluidized columns 12 p1858 N68-21905 Analysis of turbulent wall pressure field under super-INASA-CR-8881 12 p1859 N68-22087 Low wavenumber specurbulent boundary layer er spectrum of wall pressure under 24 p4245 N68-37745 WALL TEMPERATURE Heat tramfer within and across nearly circular cavi-es - variable wall temperature and mass bleed effects on cavity flow [NASA-CR-90233] 01 p0053 N68-10985 Hydrodynamics and heat transfer of heated air flow-ing in tube with turbilizers on heat transfer surface 02 p0290 N68-11744 Wall temperature effects on boundary layer subsonic gas flow 04 p0496 N68-13808 (AD-661335) Radial temperature distribution effect on neutron kinetics of two dimensional circulating fuel nuclear 04 p0541 N68-13822 Resistance heating measurements on tube wall of heat exchanger [NEL-272] 05 p0757 N68-14715 05 p0757 N68-14715 Thermal fields and heat fluxes - graphical methods for variable conditions and linear thermal and unidirectional heat flow through wall 07 p1095 N68-16407 Germanium resistance thermometer, lead wire heat sink, and high thermal conducting epoxy fastening techniques to measure wall temperature in cryogenically cooled space simula [NASA-TM-X-52386] 07 p1099 N68-17044 Feasibility of supporting liquid fuel on solid wall in radiating liquid core nuclear rocket concept [NASA-TN-D-4413] 07 p1072 N68-17093 Thermal neutron propagation in cylindrical duct 10 p1562 N68-19596 Wall temperatures and heat transfer coefficients for solid-vapor mixtures of para hydrogen and nitrogen [NASA-CR-93744] 10 p1612 N68-19799 Time modulation of wall temperatures studies for ef-ect on thermal convection onset 13 p2172 N68-23994 Convective heat transfer coefficients on adiabatic alls determined by sinusoidally forced fluid tempera-[NASA-TM-X-1594] 14 p2370 N68-24618 Wall temperature and Prandtl number effects on absonic laminar and turbulent boundary layer thicke-14 p2372 N68-25126 Viscous structure of shock wave reflected from adiabatic and isothermal walls 15 n2453 N68-26327 Solution for free convection of fluid enclosed between two heated control cylinders 16 p2794 N68-27582 Analytical investigation of flow and wall temperature mitivity in heated passages for large inlet to exit den-ty ratios in subsonic flow of nuclear rocket sity ratios in subsonic (NASA-TN-D-4649) mar rocket 17 p2983 N68-28371

Nonuniform wall temperature effects on skin friction and host transfer in luminar compressible boundary

18 p3063 N68-30561

Conference on pilot warning instruments necessary for aircraft safety and accident prevention 08 p1115 N68-18222 Wall temperature control of inertial navigation [LRBA-E-430-01/L1] 19 p3384 N68-31358 Heat transfer characteristics of cylindrical ejector for turbojet engine and shroud material temperature pre-diction Collision warning and terrain/obstacle avoidance system for United States Army aircraft [NASA-TM-X-1641] 20 p3610 N68-32988 High density as well as training mission and basic in-strument instruction as major causes of U. S. Army mid-air collisions Single-thermocouple method for measuring heat flux in thermally thick walls [NASA-TN-D-4737] 20 p3611 N68-33208 U. S. Navy experiences with mid-air aircraft colli-sions and stationkeeping warning devices 08 p1116 N68-18226 Heat transfer in turbojet combustion chambers, film cooling experiments on wall temperatures, and air [FTD-HT-23-958-67] 20 p3580 N68-33575 ght of warning instrumentation for collision nce by U. S. Air Force aircraft 08 p1116 N68-18227 Heat transfer in turbojet engine combustion coam-bers and film cooling of wall temperatures 20 p3613 N69-33576 Time delay cockpit television for pilot warning Radiative heat transfer in emitting, absorbing, and scattering boundary layer 22 p3976 N68-34843 Airborne collision avoidance systems with pilot WALL TEMPERATURE DISTRIBUTION warning instruments Pilot warning device needed aboard all aircraft as collision avoidance system WALLOPS ISLAND Wind velocity profiles measured by smoke trail method at Wallops Island, Va., in 1963 and 1964 [NASA-TN-D-4365] 07 p1020 N68-17024 Infrared detectors for proximity/pilot warning in-dicators for aircraft collision avoidance by civilian air-Tabulated data on velocity distribution of upper air winds at Wallops Islan [NASA-TN-D-4570] 13 p2101 N68-24028 Fluorescent paint and other pilot warning indicators for aircraft collision avoidance NASA fact sheet on Wallops Station rocket sunching site and research facilities launching site and research fa [NASA FACTS 0-11/12-67] Infrared detection for aircraft tracking under visual flight rules, and zenon discharge light with diffused al-icon detector as simple pilot warning indicator 08 p1116 N68-18233 14 p2235 N68-24723 NOZZLE WALLS POROUS WALLS THICK WALLS Continuous wave Doppler technique as collision hazard warning device THIN WALLS WIND TUNNEL WALLS 08 pl 117 N68-18234 Applicability of calorimetric transducers in measur-ig nonstationary heat exchange in reflection of shock ave from solid wall Frequency selection for airborne pilot warning 08 p1117 N68-18235 Rho/theta pilot warning instrument as aid for air-borne collision prevention 07 p1098 N68-16863 Film cooling of heat insulated flat wall during injection of foreign material at turbulent boundary layer [NASA-TT-F-11695] 15 p25/3 N68-25726 08 p1117 N68-18236 ques for infrared detectors as pilot Optical techn warning devices of approaching aircraft
08 p1117 N68-18237 Graphical-analytical method of determining steady state heat transfer through wall with longitudinal rectangular fins and variable coefficient of thermal conductivity. Summary of requirements for pilot warning device for visual airborne collision avoidance 08 pl117 N68-18238 (FTD-HT-67-178) 21 p3796 N68-34609 Pilot warning instruments that will aid in avoiding mid-air collisions Open-air ionization chambers with walls of soft-tis-ue equivalent material for measuring photon doses CEA-R-3540] 23 p4041 N68-37039 sue equivalent s (CEA-R-3540) 08 p1117 N68-18239 Bibliography of studies dealing with pilot warning devices, visual collision avoidance, infrared techniques for detection, and pilot judgments in accident preven-Incidence angle and layer thickness effects on water and carbon dioxide cryodeposit reflection from space [AEDC-TR-68-144] 24 p4242 N68-38174 08 pl117 N68-18240 Pilot warning indicators, aircraft collision avoidance, and conspicuity enhancement ANTISUBMARINE WARFARE CHEMICAL WARFARE 08 pl117 N68-18241 COMBAT Simulation and analysis of over ocean separation assurance procedures and displays
[NA-68-14] 09 p1373 N68-19372 U NUCLEAR WARFARE WARMING U HEATING Lightning effects on nuclear explosion detection and WARNING SYSTEMS (LA-3755) Radiation detectors, air samplers, fire and smoke de-tectors, and respirators for hazard control [UCRL-50007-67-1] 02 p0209 N68-11061 10 p1558 N68-19816 m on low cost warning systems for aircraft 11 p1625 N68-21682 [AD-666122] Military weather warning center analysis and severe forecasting procedures Oil leak detection warning system to detect small ervoir capacity 02 p0231 N68-11340 12 p1877 N68-22724 frradiated and heat treated poly/vinyl acetate/ semiconducting polymer development and flare warn-ing system based on monitoring of solar X rays for en-suring astrustant safety Feasibility of cooperative radio frequency method for collision-hazard warning [NASA-TM-X-59606] 14 p2287 N68-25637 Digital simulation for operational analysis of time-equency collision avoidance system for aircraft D6-19535] 15 p2385 N68-26058 02 p0292 N68-11449 D6-19535] Flare warning system based on monitoring of solar X rays for ensuring astronaut safety 02 p0263 N68-11451 Voice communication warning system for army air-Miniature oxygen deficiency alarm system using lectrochemical cell as sensor 15 p2386 N68-26368 (G0131-8U11 Commercial pilot reaction to warning system for failure in instrument landing systems [SRDS-RD-68-9] 16 p2588 N68-27567 04 p0462 N68-13257 Integrated fire and overheat detection system for air-Miniuture portable bilevel alarm for oxygen deficient [AFAPL-TR-67-129] 07 p0939 N68-16720 Continuous wave Doppler technique for collision hazard warning in general aviation aircraft [NASA-TM-X-60874] 08 p1114 N68-17481 (BM-RI-7165) 17 p2889 N68-29376 Ceramic electrolyte electrochemical cell operating as temperature sensor for aircraft overheat detection Rapid cutoff system for cyclotron heam (UCRL-17728) 08 p1157 N68-17930 18 p3071 N68-29668

[ARC-29509]

22 p3805 N68-35308

18 p3087 N68-29852

nce studies of Wasp

07 p1087 N68-17094

07 p1028 N68-16465

11 p1689 N68-21274

17 p2830 N68-28968

17 p2918 N68-29509

NDEX Pilot warning indicators and lowering risk of mid-air [NASA-TM-X-61248] 8-18222 WARPAGE Techniques for controlling warpage and residual resses in welded aluminum alloy structures for Saturn 8-18224 basic inproject NASA-CR-612351 WASHOUT [RADIOACTIVITY] 8-18225 ift colli-WASP SOUNDING ROCKET Design and flight perform sounding rocket [NASA-TM-X-1518] 8-18226 collision WASTE DISPOSAL 3-18227 mical technology research - fuel recovery ses, waste calcination, and reactor technology Chemical techn warning support [IN-1087] -18228 h pilot Soil burial tests of full scale, electrically heated, simulated SNAP-27 fuel capsules [SC-DR-67-716] 09 p1379 N68-19269 -18229 craft as Characterization of Trombay soils for disposal of -18230 Radioactive waste storage facilities within European Atomic Energy Community
[EUR-3664.F]

13 p2050 N48-24235 ing in-18231 Astronaut life support requirements of oxygen, food, water, waste disposal, temperature control, and atmosphere control for survival in manned spacecraft enicators 18232 [NASA FACTS, V. 3, NO. 5] visual sed sil-Design, operation, and costs of evaporators for dioactive waste removal 18233 radioact llision Low temperature asking of human feces for solid waste management onboard spacecraft [NASA-CR-73249] 23 p4003 N68-36748 18234 arning 18235 e air-18236 pikst 8237 levice

8238

iding

8239 rning iques even-

8240

ince.

8241

n us-

372

and

E16

uft 682

mail

724

hod

637

058

air-

168

for

167

176

Cultivation of Hydrogenomonas for waste management in closed cycle life support system [NASA-CR-90111] 01 p0014 N68-10855 Methane, methanol, glycerol, and hydrocarbons for microbial life support systems on extended space missions, animal links in closed system, use of wastes, and chemical synthesis of food [NASA-CR-73158]

02 p0168 N68-11178 Use of metabolic wastes in closed life support systems for manned orbital research laboratory, lunar base, and interplanetary spacecraft [NASA-CR-73159] 02 p0170 N68-11283

Mass and energy sources for space propellant synthesis from spacecraft waste material 08 p1229 N68-17358 Fluoride volatility processes for chemical separation of purification of plutonium from waste materials RFP-1048] 09 p1298 N68-19265 and purificat [RFP-1048] Biowaste utilization analysis for defining resistojet control system for Manned Orbital Research Laborato-[NASA-CR-66602] 14 p2194 N68-25448 Survey and critical evaluation of existing methods for synthesis of fatty acids and lipids from metabolic wastes under conditions of space flight [NASA-CR-1103] 16 p2602 N68-28278

Catalytic oxidation and mineralization

Catalytic oxidation and mineralization

Catalytic oxidation and mineralization

21 p3633 N68-33914 WASTES
U HUMAN WASTES
U METABOLIC WASTES
U RADIOACTIVE WASTES
U URINE

WATCHES CLOCKS

NT COLD WATER
NT HEAVY WATER
NT POTABLE WATER
NT SEA WATER

Vapor pressure determined and isotherm-isoburs lotted for water and hydrochloric acid at 25 degrees (PA-TT-60) 01 p0019 N68-10262 Firefly bioluminescent assay for detection of microorganisms in spacecraft water supplies [AMRL-TR-67-71] 01 p0011 N68-10551 Initial stage of electric discharge column spreading in water with small spreading rates and zero magnetic 02 p0256 N68-11680

Zircaloy 2 and 4 correction in high temperature and high pressure water and steam [WAPD-TRANS-73] 03 p0350 N68-12152 Spectral index measurement on thermal neutron nergy equilibria in boron contaminated water, and 03 p0378 N68-12613

Chemical, biological, and physical properties of uspended, colloidal, and dissolved particles in natural 03 p0318 N68-12719 Energy buildup factors in water for very deep penetrations for 6 MeV plane isotropic gamma source [WAPD-T-1932] 03 p0398 N68-12740

Spatial, energy, and angular distribution measure-ents of neutron spectra in water near absorbent 04 p0536 N68-12838

Spatial energy distribution of thermal neutrons in two-temperature graphite-water system system 04 p0536 N68-12841

Neutron thermalization in water at different times 04 p0537 N68-12844 Correlation between alkali metal cation exclusions and viscosity coefficients in aqueous solution solid in-

terface [TR-32] 04 p0465 N68-12941 Condensation and sublimation of carbon dioxide and water mixtures studied in relation to possibility of ex-istence of carbonic acid on Mars [D1-82-0633] 04 p0467 N68-13416

Yield variation of radiolytic products with higher ranges of concentration analyzed in terms of structural and radiation chemistry of water [NASA-TT-F-11366] 04 pQ472 N68-13551

Martian surface characteristics by remote sensing critique of 1973 Voyager experiments, liquid water ex intence on Mars, and atmospheric property measure ments on Mars [DAC-60841] 04 p0580 N68-1388. 04 p0580 N68-13882

Possible existence of liquid water on Mars and feasi-lity of aluminum oxide hygrometer for detection of

04 p0581 N68-13886 Measurements on quality factor depth distribution for high energy protons in water tank
[JINK-P9-3369] 05 p0712 N68-14427

Intensity fluctuations in axial ray, and edge ray ackscattering from water droplet SC-CR-67-2724] 05 p0700 N68-14437 backscattering from (SC-CR-67-2724)

Hydrodynamics of steam and water mixtures in verti-cal heated and unheated pipes at low superficial veloci-

[AERE-TRANS-1076] 05 p0648 N68-14759 Hydrodynamic equations solved for flow behind out of weak shock wave in water - Landau damping 06 p0828 N68-15612

Radioactive electrode techniques for determ fects of added electrolytes on water surface pot [NRL-6583] 06 p0792 N6 of p0792 N68-15814

Oxidizing potential of trivalent and tetravalent ceri-um in solvent nitric acid, water, and tributyl phosphate 06 p0794 N68-15961

de water in leakage eactor 06 p0877 N68-16073 in high temperature gas co [EUR-2762.E, ANNEX]

Vapor diffusion, energy balance, and variations of evaporation over water, ice, and snow for evaporation rate determinations 07 p1017 N68-16552

um-water lattice of accelerator source neutrons [WAPD-T-2015] 07 p1045 N68-16569 Early react ons of alkaline-earth orthosilicates with

(PB-176174) 07 p0958 N68-16745 Polarization effects in microwave backscattering om sinusoidal capillary waves on water 07 p1037 N68-16937

Development of water tank random channel simu tor for directional antennas 07 p0966 N68-16980

Boiling heat transfer coefficients, interface behavior, and vapor quality in heated wall rotating boilers with continuous fibrough-flow of water as test flaid [NASA-TN-D-4136] 08 p1255 N68-17566

Equation of state of water for predicting motions and pressures following underwater nuclear explosion [RM-5050-PR] 08 p116[N68-17655

Measurement of decay of thermal neutrons in water poisoned with non-1/v neutron absorber cadmium [AE-309] 08 pt 205 N68-17675

cts of perforated sheet structure on heavy com-tremoval in bubbling water mercury system 08 p1161 N68-17728

Water absorption characteristics of hydraulic brake (CCL-231) 08 pil61 N68-17740

Laniner flow of stable stratified salt water with uniform upstream velocity and density gradient, and with flat plate towed horizontally in water tank (D1-82-0488) 08 p1163 N66-17943

Japan Research Reactor-2 irre ated feel storage (JAERI-1153) 08 p1158 N68-18034

water-uranium dioxide uranium 235 08 p1144 N68-18143 Subcritical experiments of system enriched with 5 perce (EURAEC-1882)

Feasibility demons hydrogen diffusion cati for aerospace application [AMRL-TR-67-65] tion of palladium-silver le in water-electrolysis cells 09 p1287 N68-18428

Mathematical model for optimal placement of wells groundwater horizon 09 p1360 N68-18584

Dielectric relexation sp ctrs of water, ice, and sque-(TR-3) 11 p1643 N68-20604

Condensation of steam in wa [FPL-TRANS-441] ater filled reservoir 11 p1686 N68-21455

[TR-33] 11 p1656 N68-21565 rials for wear applica-WAPD T. 1977 12 p1882 N68-22618

Falling capillary equiporous medium under a tions at atmospheric pre [ORO-3411-10] m heights of water in c and evaporative condi-13 p2166 N68-23099

PH effect on wear ch cteristics of ten metal combinations in water [AECL-2784] 13 p2083 N68-23728

Stored water in stratus and stratocumulus clouds over Ukraine during cold half of year [T-R-555] 13 p2100 Non-23896

Tabulated state variables for isentropic discharge pho es and thermodynamic values thencomena of water, starting (DLR-FB-68-11) 13 p2172 N68-24136

Automatic sample collector for measuring liquid water content of fug [T-R-567] 13 p2070 N68-24139

Heat and mass transfer in liq d-liquid spray towers 13 p2173 N68-24145 of water in jet origins fucls

studies to improve reme [NRL-6669] 13 p2142 N68-24152 Soviet reports on Antarctic ing stations, ground and surfa artificial lunar satellites

14 p2246 N68-24536 X ray diffraction data on water-ammonia system at 4

deg C IORNL-42211 15 p2403 N68-25638 Anomalities in water and aq perature effects on membranes [NASA-CR-87776] ous systems, and tem

15 p2397 N68-26562 pump impeller in room (NASA-TN-D-4613)

15 p2455 Ne2-26651 nivities for carbon dioxide and Band and total emi 15 p2420 N68-26743

Effect of water proposal activity [NASA-CR-95220] es in thisotropic clay systems 16 p2597 N68-27438

carbon diuxide water. 16 p2397 N68-27463 Conversion of human w and urea into food for spac [NASA-TM-X-59839] Static dielectric cons

16 p2717 N68-27845

(SNE-38) 16 p2706 N68-28080

m in pool bei 17 p2985 N68-28561

ement, dehydration ef-udy of analyste family of

17 p2839 N68-28762 17 a2932 NASE-28939

18 p3078 N68-30630

SU

to

dr

Liquid water, heavy water, and solid water dynamics from inelastic scattering measurements of epithermal 17 p2940 N68-29312 Heat transfer crisis with steam-water mixtures in cir-cular tubes of water cooled reactors (EUR-3920.E) 18 p3188 N68-30200 Single particle parameter distributions in interaction energies, volumes, and enthalpies of water 19 p3225 N68-31322 Properties and density of anomalous water, resilien-cy of water, memory of liquids, and use of water as [JPRS-45989] 19 p3316 N68-31510 ic equilibrium relations Calculation of thermodyna rate-water system
19 p3227 N68-31561 Muss transfer of water from single thoria sol droplets uidized in 2-ethyl-1-hexanol 19 p3231 N68-31908 [ORNL-TM-2163] odynamic properties of water 19 p3387 N68-32156 Alcohol content, heat of mixing, and contraction in-formation of water-ethyl alcohol solutions [RTS-4291] 20 p3417 N68-32442 vironmental parameters influence on freezing and tentation of suspended water drops 20 p3472 N68-33044 tehavior of single component, two phase flow of um and water droplets through nozzles 20 p3464 N68-33072 Tests to determine feasibility of using water filled frangible rail top plastic trays for braking monorail nucket vehicles [MDC-TR-68-59] 20 p3457 N68-33312 Wind slick generation flow near water surface on attributed to turbulent shear 21 p3678 N68-33703 Water electrolysis unit design and development for integrated life support system oxygen production [NASA-CR-66654] 21 p3639 N68-34044 Experimental study of molecular diffusion in liquids 21 p3650 N68-34143 Sound velocity in distilled water measured through temperature range [CNAEM-58] 22 p3913 N68-34854 Investigation of petroleum fuel and water contact in-teraction effects [CCL-250] 22 p3953 N68-35371 Cavitation damage of stainless steel, nickel, and aluminum alloy in water [NASA-TM-X-1670] 23 p4074 N68-36076 Effect of adsorbed water on critical surface tension of wetting of metal surfaces [NRL-6727] 23 p4008 N68-36437 Thermal neutron di [DOC.-86] ution in water at 24 deg C 23 p4135 N68-37262 ns of acid and water effect on Low concern ion in orga 23 p4017 N68-37367 Elastic and charge rearranging differential cross sec-tions for collisions of hydrogen ions with water solecules 24 p4310 N68-37631 Annular flow air-water mixing tests [WAPD-TM-727] 24 p4246 N68-37883 Melting relationships in m aluminum silicate sodium chloride water system at 1 Kb pressure [NASA-TM-X-63372] 24 p4272 N68-37945 Frog eggs and larvae behavior in di [NASA-TT-F-11962] 24 p in distilled water 24 p4204 N68-38164 Aqueous electrolytic solutions studied to determine structure and transport properties
[AD-674407] 24 p4219 N68-38240 Cavitation conditi om and hydrodynamics of vapor-[FTD-HT-23-586-67] 24 p4247 N68-38271 Airborne surveying of radioactive contamination of atmosphere, soils, and water in gamma ray spectrum [ONI-TRANS-2634] 24 p4205 N68-38290 WATER BALANCE Effect of various drinking patterns on diuresis under the temperature air and physical stress conditions ASA-TT-F-11605] 10 p1462 N68-19802 high temperature air at (NASA-TT-F-11605) Physical and chemical properties of human sweat and factors affecting water balance in confined spaces [NASA-CR-95492] 17 p2827 N68-29518 WATER CONTENT U MOISTURE CONTENT

NT EXPERIMENTAL BOILING WATER REAC-TORS
HALDEN BOILING WATER REACTOR
HEAVY WATER COMPONENTS TEST
REACTORS
HEAVY WATER REACTORS PLUM BROOK REACTOR NT NT PLUTONIUM RECYCLE TEST REACTOR
NT PRESSURIZED WATER REACTORS
NT ZERO POWER REACTOR 3 Kinetic studies of heterogeneous water reactions in water cooled reactors [STL-372-50] 01 p0093 N68-10688 Computer program /CONTEMPT/ for predicting containment pressure-temperature response to loss of coolant by accident in water cooled reaction [IDO-1720] 01 p0097 N88-10973 Oxygen content of aluminum alloys by comparing ual sample irradiation with dual axis rotation AI-CE-74 02 p0172 N68-11026 Differential scanning calorimetry for melting, transi-tion energies and specific heat of polyphenyls [AI-CE-58] 02 p0173 N68-11032 Low temperature, water cooled and moderated, en-riched uranium metal fueled reactors for desalting ORNL-TM-1152, REV.] 03 p0379 N68-12690 Physical properties of Zircaloy 4 and uranium dioxide determined for analysis of loss of coolant reactor accident [IN-1093] 05 p0752 N68-13967 (SNE-401 Radioisotopes in sealed form to locate obstruction oints in hot water pipes with particular regard to radio [EUR-3646.1] 05 p0757 N68-14793 Irradiation behavior of Zircaloy 2 clad thorium uranium zirconium fuel elements under water cooled power reactor conditions [BNWL-479] 07 p1810 N68 14400 Critical experiment and characteristic tests of Japan esearch Reactor-4 [JAERI-1139] 08 p1204 N68-17436 Data availability on mechanical properties and frac-ire mechanics of irradiated materials for water cooled reactor pressure vessels [NRL-6625] 08 p1206 N68-17942 Coolant conductivity in water cooled research reac-[AFIT-TR-67-8] 08 p1206 N68-18037 Shock spectrum analysis program for IBM 7094 [TID-24137] 09 p1322 N68-18456 Water-chemistry effects on oxidation and reduction zirconium alloys under reactor radiation or radiation 09 p1294 N68-18762 IAECL-27971 Design, materials, fabrication, inspection, and testing of steel pressure vessels for water cooled nuclear reac-IORNL-NSIC-211 09 p1375 N68-18873 Mathematical simulation of river temperature fluc-tuations below power reactor cooling system outflow [BNWL-628] 09 p1378 N68-19076 Steam cooling system parameter effects on dynamic behavior, and stability of fast breeder reactor [KFK-637] 09 p1379 N68-19480 Structural behavior of thick steel plate pressure vessels for water cooled reactors [ORNL-4176] 11 p1742 N68-21385 Fast fission effect measurements in graphite soderated uranium lattices of water cooled test reac-12 p1909 N68-22727 Physical constants testing reactor measurement of infinite medium neutron multiplication factor for uranium lithium supercell [BNWL-622] 13 p2108 N68-23871 Irradiation loop effects on flux density and reactivity natural water cooled reactors CEA-R-3173] 14 p2374 N68-25305 Design of water moderated, water cooled reactor 14 p2296 N68-25403 Mathematical model for determination of pressure nd temperature transients inside containment building slowing rupturing of water cooled reactor EUR 2027 F1 1 led reactor 18 p3014 N68-30186 following ruptur [EUR-3927.E] Heat transfer crisis with steam-wa cular tubes of water cooled reactors [EUR-3920.E] 18 18 p3188 N68-30200 Research studies on steel embrittlement in water cooled reactor technology [EUR-3784.E] 18 p3091 N68-30255

Radiation detection system for continuous monitor-ing of beta radioactivity in cooling water of nuclear Abundance and sources of radioactive isotopes in water cooled reactors [IFA-FR-59] 19 p3309 N68-31248 Literature search and experimental studies on jet thrust forces caused by reactor cooling pipe fracture [AGRR-TB-14] 19 p33(1 N68-31527 alloys used for fuel rod cladding in water cooled reac-[GEAP-5530] ments of pluto (BNWL-774) cooled reactor [BNWL-676] WATER DEPRIVATION WATER EROSION sonic aircraft structures

20 p3501 N68-32945 Physical constants test reactor integral measuretonium 239 alpha in fast spectra 4] 20 p3534 N68-33428 Theory for corrosion product transport in water 20 p3534 N68-33433 Freon loop for reliable prediction of burnout heat flux in water cooled reactor systems
[AAEC/FM-441] 22 p3910 N68-35576 Digital program for reactor blowdown and power ex-22 p3911 N68-35727 Supercritical water cooled inpile fuel testing, collapsed clad fuel elements in reactor environment, fuel design, and loop performance operating data analysis [WCAP-3374-8] 24 p4295 N68-37821 Aqueous solutions as emergency coolants for reactor 24 p4295 N68-37858 Potential metal-water reactions in power reactors with light-water cooling systems
[ORNL-NSIC-23] 24 p4295 N68-37884 Metabolic activities of osmophilic yeast in limited water environment and pyrolysis-infrared analysis of soils and natural materials 03 p0306 N68-12322 Water flow rate effects on cavitation er [FTD-HT-23-581-67] 06 p082 06 p0824 N68-15110 State of the art review for erosion of steam turbine 07 p0939 N68-16759 Radioactive tracer analysis on erosion-corrosion resistance of cobalt alloys exposed to sea water [USNRDL-TR-67-142] 08 p1188 N68-18200 Rain impact damage, and water erosion effects on structural materials - aircraft structures, supersonic speeds, metals, plastics, ceramics, steels, and protective coatings 09 p1337 N68-19401 Rain impact damage tests on polymers, ceramics, and metals 09 p1337 N68-19403 Wind tunnel tests of rain erosion effects on aircraft flying at transonic speed 09 p1337 N68-19404 Environmental hydrometeor standards for super-09 p1272 N68-19405 Effects of impact velocity, impingement angle, and drop size on rain erosion rate of solids 09 p1338 N68-19408 Structural analyses on solids eroded by repeated 09 p1445 N68-19409 Development of single impact laboratory device for rain erosion damage studies on solids 09 p1324 N68-19410 Polyurethane coatings for subsonic rain erosion pro-tection of metallic, and plastic laminutes 09 p1356 N68-19411 Single impact gun for rain erosion studies, and analysis of experimental rain impact damage data 09 p1324 N68-19412 Water jet erosion behavior, and mechanical proper-ties of stainless martensitic steel 09 p1354 N68-19414 Rain erosion effects on dielectric materials, coatings, impenites, and ductile metals at supersonic speeds 09 p1356 Non-19415 Nickel electroplated nonconductive coatings for rain erosion protection of aircraft structures 09 p1354 N68-19416 Water drop impact, and cavitation damage tests on metals, glasses, ceramics, and plastics 09 p1445 N68-19417

NATER COOLED REACTORS NT BOILING WATER REACTORS

58-30630

otopes in

8-31248

s on jet

8-31527

less steel led reac-

8-32945

neasure-

8-33428

n water

8-33433 out heat

8-35576 wer ex-

3-35727

alysis 1-37821

reactor

-37858

eactors

-37884

limited lysis of

-12322

15110

urbine

16759

ion re-

18200

cts on

ective

19401

amics,

19403

ircraft

9404

super-

9405

, and

9408

cated

94119

e for

9410

pro-

9411

naly-

9412

per-

9414

ings.

1415

rain

416

417

Liquid shock impact effects on polymethyl methacrylate, and aluminum copper alloys 09 p1446 N68-19419 Theoretical calculations, and rain erosion test program for fused silica 09 p1356 N68-19420 Rain erosion behavior of galvanic surface layers on steel structures 09 p1354 N68-19421 Effect of surface topography on erosive action of flowing liquid 09 p1338 N68-19423 Drop erosion resistance of iron, and annealed steel turbine blades 09 p1354 N68-19424 Test parameter effects on material erosion by rain-09 p1446 N68-19425 Water drop size, and erosion resistance of impinged solid materials 09 p1446 N68-19426 Damage mechanism of single droplet impacting on solid materials 09 p1446 N68-19427 WATER FLOW Deterioration conditions of heat transfer in steam and water mixtures flowing in heated pipes [NP-TR-1522] 01 p0 52 N68-10903 Statistical analysis of adjustment theory for river 02 p0207 N68-11572 Computer program for two dimensional analysis of thermodynamic behavior of boiling liquid [CEA-R-3141] 03 p0425 N68-12167 Dam, reservoir, levee, and river constriction effects on model river basin and reservoir system - flood control and forecasting | 03 p0340 N68-12483 Techniques and instruments for measurement of water level fluctuations, current direction and current velocity in rivers and canals [NOO-IR-67-50] 04 p0497 N68-12808 04 p0497 N68-12808 Heat transfer dynamics of two phase flow in heat exchanger {SGAE-RT-13/1967} 04 m0596 N68-13559 Current flow and effect on water temperature in Sea 06 p0841 N68-15862 Air and water flow in converging-diverging annular venturi tube with critical and near critical conditions at 07 p0989 N68-17105 Interception drainpipes in porous media and influence on behavior of underground water level [REPT-438] 07 p0993 N68-17201 Mathematical simulation of river temperature fluctuations below power reactor cooling system outflow [BNWL-628] 09 p1378 N68-19076 Mean velocity distribution measurements on surbu-lent water flow in straight pipe 10 p1515 N68-19865 Two phase flow through apertures 10 p1512 N68-20049 Gas absorption into smooth and wavy thin laminar liquid films falling down inclined planes

1 p1682 N68-20700 Thermodynamics and fluid dynamics of saturated water flow discharge from ducts
[AEC-TR-6928] 12 p1863 N68-22790 Doppler shift flowmeter for measuring ocean currents IMPL-U-48/671 13 p2072 N68-24275 Analysis of sea current velocity and direction off Tokai-mura [JAERI-4044] 14 p2251 N68-25371 Turbulent water flow velocity distribution using hot-wire anemometer and photographic techniques [NASA-CR-61837] 15 p2430 N68-25800 Turbulent flow of water over rough inside surfaces of test pipes 16 p2648 N68-27847 Drag reduction caused by high polymer solution in-jected in water flowing around cylindrical bodies 19 p3263 N68-31165 Roundary layers of ships studied with sucking disks, flow visualization applied to wake of ship, and turbulence detection [REPT-1] 19 p.3265 N68-31489

19 p3265 N68-31489

20 p3461 N68-32662

Low pressure swirl chamber studies of water and air

[ARL-68-00721

Heavy water moderated carbon dioxide cooled reactor thermal characteristics
[JAERI-1145] 01 p0097 N68-10960

WATER LOSS (IDO-17263)

Improving climate of arctic regions by transfer of warm water from Atlantic to Arctic basin [M-7397] 22 p3868 N68-35214 Neutron spectra evaluation of experimental data on water moderated plutonium lattices [RT/FI/67/15] 02 p0238 N68-11538 Empirical approach to estimating reactor vessel damage from severe nuclear excursion [GEAP-5163] 03 p0370 N68-12100 Local void ratio measurement in air-water flow with hot-film anemometer [CEA-R-3465] 23 p4050 N68-36921 Computer codes for neutron flux spectra of phitonim-water lattices
[A-7562] 03 p0380 N88-12726 Applicability of water model testing to liquid metal engineering problems (LMEC-MEMO-68-4) 23 p4051 N68-37199 [GA-7562] Effects of temperature and lattice pitch on material buckling and reaction rates in low enrichment unahum dioxide feeted cores moderated by light seator. (AEEW.8-502) 68 g876 Nn8-15780
Thermal photoneutron flux distribution in water shielded reactor. [NSJ-TR-93] 07 p1026 Nn8-16226. WATER HAMMER Method of characteristics solution for equations governing unsteady flow of liquids in closed systems [NASA-CR-89954] 01 p0050 N68-10219 Shock spectrum analysis program for IBM 7094 [TID-24137] Computation of thermal neutron distributions for water moderated reactors [RCN-62] 07 p1030 M68,14407 09 p1322 N68-18456 Analog analysis of flow reversal and water hammer pressure in reactor closed hydraulic rabbit tube facility [ANL-7336] 10 p1554 N68-19506 [RCN-62] 07 p1030 N68-18607 Fast scattering data for aluminum from water moderated lattice experiments [AEEW-R-551] 08 p1201 N68-17244 ANL-7336] Partial differential equations describing water nammer reduced to time difference equations for using smally computers in surge analysis (9-921) 08 p1201 N68-17244 System dynamics and control analysis of tungsten water moderated nuclear rocket [NASA-TM-X-1426] 08 p1207 N68-18252 WATER JETS U HYDRAULIC JETS ASA-1m-A-120)
Heavy water moderated boiling light water cooled utonium self-sustaining power reactor design [AERI-1151]
09 p1376 Res-18879 WATER LANDING NT DITCHING [LANDING] Postshutdown cooling requirements of tangsten water moderated nuclear rocket engines [NASA-TM-X-1568] 11 p1740 N68-21111 Computer program for determining hydroelastic response of command module during impact into water Digital correlation analysis of oscillation measurements of water moderated reactor RT/FI/67/26] 11 p1742 N68-21325 [NASA-CR-65860] 03 p0418 N68-11926 Impact water pressures, accelerations, and landing dynamics of scale model Apollo command module with deployed heat shield impact attenuation system [NASA-TN-D-4275] 09 p1432 N68-18822 Design of water moderated, water cooled reactor with burnable poison [FEI-88] 14 p2296 N68-25403 Mathematical model for Apollo command module Computer program for calculating criticality and burnup of water moderated reactor [BNWL-735] 16 p2707 N68-28124 Vibration tests of concentric tube fuel element aupport structure for Tungsten Water Moderated Reactor [NASA-TM-X-1608] 16 p2791 N68-28330 impact analysis on water [NASA-CR-92019] 10 p1603 N68-19743 Mathematical model for predicting dynamic exponse of thin elastic shells of revolution during NASA-CR-920201 10 p1603 N68-19761 Numerical analysis of static, and dynamic shell response to water impact loads [NASA-CR-92024] 10 p1604 N68-19867 Reactor physics parameter in water lattices of uranium fuel rod [CNAEM-47] 18 p3117 N68-30575 Comparison of theoretical Apollo water impact data with scale model experimental results [NASA-CR-92022] 10 p1605 N68-19994 Proton recoil spectrometer to measure water cooled [IN-1054] 20 p3530 N68-32684 Numerical analysis on vibrational modes and frequencies in Apollo water impact [NASA-CR-92025] 10 p1606 N68-20069 WATER PRESSURE Water slamming pressure on rigid two dimensional circular cylinder in ship loads prediction study [TAR-TR-6701] 01 p0144 N68-10735 Hydroclastic response of spherical shell upon vertical water impact [NASA-CR-92021] 10 p1606 N68-20108 Chemistry of aqueous systems - thermodynamics, camotic coefficients, physical chemistry of polyclectrolyte systems, and water research program 03 p0820 N68-14146 Radiolysis of water for reducing net decomposition by deuterium addition and for ammonia alkalimity con-trol in boiling heavy water reactor [HPR-55] 05 p0627 N68-14686 Long term hydrostatic tests of syntactic fouri sum-les in fresh water under pressures of 3000, 5000, and Portable instrument for measuring evaporative water loss of flying personnel under emotional stress [AM-67-17] 05 p0615 N68-14752 Effects of Freen, water flow sures on incipient venturi cavit [NASA-TN-D-4340] w temperatures, and pres-05 p0648 N68-14641 Effect of various drinking patterns on diuresis under high temperature air and physical stress conditions [NASA-TT-F-11605] 10 p1462 N68-19802 Human water losses by evaporative perspiration in Linear regression analysis of water pressure and criti-cal temperature in plagioclase-silicate liquid equilibri-21 p3634 N68-33926 - 23 p4052 N68-36107 [NASA-CR-97153] Digital program for reactor blowdown and power ex-irsion analysis WATER RECLAMATION 22 p3911 N68-35727 Water recovery and co cal systems for manned u [NASA-TM-X-57247] in in closed ecologi d space flight 09 p1289 N68-18863 WATER MODERATED REACTORS
NT EXPERIMENTAL BOILING WATER REAC-TORS WATER COMPONENTS TEST REACTORS
NT PLUTONIUM RECYCLE TEST REACTOR distillation and chemical recovery of potable water Atmospheric and vacuum oxidation of human urine for in closed ecological systems [SAM-TR-67-[10]] 11 p1637 N68-21419 per pyrolysis water recovery heat sources 13 p2006 Net-23008 itering system for perceptor Comparison of absolute calculated and measured amma and neutron doses in tangeten water-Vacuum distillation, va system using radicisotope [DOC.-67SD8124] moderated critical assembly [NASA-TN-D-4223] 01 p0089 N68-10291 oratory model of f Absorber plate efficiency in two water moderated water rectamation 13 p2006 Nes-23909 [EUR-3615.D, V. 1] 01 p0091 N68-10446 Automatic water recovery system forming closed ecological system for reclaiming potable water from fluid waster in described.
[GARD-1271] 18 p3016 Ne6-30107 Comparison of absorber efficiency experimental cul-culations for water moderated reactor with standard (EUR-3615.D, V. 2) 01 p0091 N68-10453

18 p3016 New-30752

Manned evaluation of zero gravity humidity control system in potable water recovery unit for simulated macrosal column

20 p3476 N68-33571

Molecular absorption of radio waves in atmospheric oxygen and water vapor as determined by radio as-tronomy methods

SI

Design criteria and mathematical model for vapor diffusion water reclamation unit [NASA-CR-66637] 19 p3215 N68-31243 Electrochemical system design to recover water from [NASA-CR-66652] 19 p3233 N68-31991 Life support systems test in spacecraft cabin simula-tor with oxygen and water recovery [NASA-TM-X-61179] 21 p3640 N68-34419 Geological characteristics and location of brecciated ater-bearing rock denotits in lunar contem water-bearing rock deposits in lunar craters [NASA-CR-96879] 22 p3959 N68-35163 ATER TAKEOFF AND LANDING AIRCRAFT NT SEAPLANES Testing ground effect machine, PV-1, for static and wing speeds on water 05 p0606 N68-14886 Quantitative data correlation for seaplane water takeoff and landing design technology [REPT.-7489-2] 21 p3622 N68-33675 21 p3622 N68-33675 Computerized simulation of water takeoff and landing in sea waves [U419-68-001] 23 p3990 N68-36486 WATER TREATMENT Planktonic algae used as agent of self-purification of contaminated waters
[FTD-MT-66-13] 01 p0009 N68-10198 Low temperature, water cooled and moderated, en-riched uranium metal fueled reactors for desalting ORNL-TM-1152, REV.] 03 p0379 N68-12690 Nuclear power systems applied to purification of sea 04 p0466 N68-13062 [TRG-1536/R/] Stress corrosion and hydrogen embrittlement of 17-4 PH in 600 deg F hydrogen ammoniated and aerated [KAPL-M-6580] 05 p0676 N68-14517 ion exchanger for extracting trace elements from sea [USNRDL-TR-67-129] 07 p0958 N68-16693 Filtration of charged particles in electric field 09 p1399 N68-19472 ngle mixed bed ion exchanger to maintain pH value of experimental loop alkaline waters [AERE-M-1829] 12 p1841 N68-22975 Laboratory model of filtering system for aerospace water reclamation [AMRL-TR-67-157] 13 p2006 N68-23909 Water-Extended Polyester /WEP/ resin for rapid repair of damaged rutways 16 p2683 N68-27944 WATER TUNNELS HYDRAULIC TEST TUNNELS WATER VAPOR Perturbation method for inverting radiative heat transfer equation to obtain vertical constituent dis-tribution in planetary atmospheres [NASA-TM-X-63021] 01 p0134 N68-10169 01 p0134 N68-10169 All-sky camera for m apor photometer for ring cloud cover, water telescope site evalua (NASA-CR-90229) 02 p0209 N68-11072 Mathematical models of spectral absorption band of infrared radiation by water vapors [FTD-HT-66-617] 0: 02 p0232 N68-11384 Methods for predicting radiative base heating by hot water vapor in rocket exhaust gases [NASA-CR-90499] 02 p0291 N68-11756 02 p0291 N68-11756 Spectral absorption by water vapor to determine line idehs, line strengths and band strength 03 p0315 N68-12574 orption spectra of self-broadened lines in 6.3 band of water vapor PB-173429 03 p0317 N68-12663 Carbon dioxide dissociation in gas discharge, water vapor and senon effects on dissociation, and electrode material influence on clean-up rate related to nonflowing sealed gas laser [NASA-CR-86015] 04 p0518 N68-13277 Line spectra for 1.9 and 6.3 micron water vapor unde in tabular form 05 p0627 N68-14662 Design criteria for water vapor electrolysis cell modules with integral ducting and fan for operation in ouciceulated spacecraft cabin air [NASA-CR-73170] OS p0608 N68-14784 Measured and calculated transmission comparisons for rotation band of water vapor [PB-176100] On p0788 NAS.15514

water vapor inch temperature grad (DP-391) [P-21]

Bibliographies on chemical act high-temperature ceramic process cal action of water vapor in Kinetics of water evaporation [FTD-HT-23-786-67] from glass capillaries 21 p3682 N68-34379 06 p0790 N68-15674 Molecular absorption of radio microwaves by oxygen Two phase flow structure in nine-rod channel with steam water at 1000 psia flow vertical upward [GEAP-5480] 07 p1027 N68-16316 22 p3868 N68-35157 Isotopic exchange of deuterium between hydrogen and water vapor on alumina promoted nickel [IFA-IS-48] 23 p4012 N68-36857 Vapor diffusion, energy balance, and variations of evaporation over water, ice, and snow for evaporation rate determinations Twilight atm Venus osphere and water vapor variations of 07 p1017 N68-16552 Band models for high temperature water vapor and carbon dioxide 23 p4174 N68-37415 Pyrolytic carbon coated fuel particle exidation using 08 pl 144 N68-18084 helium-low water vapor mixtures [ORNL-TM-2199] 24 p4213 N68-37633 Infrared opacity of hot water vapor based on stratoscope telescope observations of cool stars 08 p1241 N68-18086 Statistical band model for calculating spectral dis-tribution of heat transfer from inhomogeneous volume of high temperature water vapor, carbon dioxide, and carbon monoxide [LA-3916] WATER VEHICLES
NT AIRCRAFT CARRIERS BOATS 08 p1258 N68-18090 CAPTURED AIR BUBBLE VEHICLES Outgassing of water vapor from concrete surfaces in CARGO SHIPS NUCLEAR POWERED SHIPS SATELLITE COMMUNICATIONS SHIPS vacuum environments (NASA-TM-X-1536) 09 p1323 N68-19207 Deterioration of mechanical properties of magnesium oxide by water vapor [TR-0158/3250-10/-4] NT SHIPS NT SUBMARINES NT UNDERWATER VEHICLES 10 p1542 N68-19973 Model test determinations of wake, and thrust ynamics for fishing trawler, and bulk carrier 09 p1415 N68-19074 Vibrational relaxation in apor, helium and hydrogen min carbon dioxide-water 11 p1647 N68-20815 WATER WAVES rison between experie ental and calculated Gravity water waves respons ne to wind excitation 01 p0051 N68-10547 spectra of carbon dioxide at [AFCRL-68-0105] d water vapor 13 p2011 N68-23332 [TR-79] Air velocity profile above progressive waves in-vestigated in wind and wave facility with emphasis on Equilibrium comp of high temperature air containing water v. (RAE-TR-66354) propagating wave in [TR-82] 04 p0493 N68-13049 14 n2372 N68-24950 Kinetics of reduction of cuprous oxide to copper in hydrogen and hydrogen water vapor mixtures and ef-fects of nickel impurities on this process 14 p2218 N68-25300 ents of water sur (TR-84) ated waves 04 p0493 N68-13109 Water waves con [WBTM-TDL-13] asting techniques 04 p0533 N68-13296 Dropwise condensation of water vapor - high speed motion picture determination of heat transfer 14 p2375 N68-25372 Oceanographic studies or irbulent mixing, and waves ies on bottom relief, sediments. Brightness temperature spectra of Venus computed to determine amount of water vapor in lower at-06 p0832 N68-15029 ve simulation for engineering design 06 p0822 N68-15369 INASA-CR-949261 15 p2558 N68-25873 (HEL-9-13) ave meteorology techniques for mea-r densities and cloud water content 3] 15 p2498 N68-26710 Passive microwave mete Spectral ocean wave forecasting using automated suring water vapor de [NASA-CR-87233] IR-67-78] 07 p1017 N68-16487 Wind-sea wave energy transfer, acoustic scattering by ocean bottoms, ocean circulation, and hydrography 08 p1168 N68-17600 Velocity and temperature profiles in boundary layer tove unstable evaporating film of water under in-sence of moving stream of hot gas ot gas 16 p2796 N68-27730 Green function used in analysis of waves and wave sistance due to transom stern ships [R-117-11] 09 p1324 N68-18260 Droplet re-evaporation in helium saturated with water vapor in Wilson cloud chamber, and nucleation theory on submicroscopic drop residues 17 p2872 N68-28924 Frequency tabulations and characteristic wind and wave observations based on data from light vessels in southern North Sea Thermodynamic and transport properties of water vapor and mixtures of water vapor and nonpolar gases or and nonpolar gases 18 p3021 N68-29978 10 p1521 N68-19888 Upwelling in bounded or steady wind-driven currents [RM-5594-NSF] nic basins similar to Carbon dioxide and water vapor effects on induction period kinetics of hydrogen-oxygen reaction [NASA-TN-D-4683] 18 p3186 N68-30041 10 p1522 N68-19988 Soviet-bloc research abstract baroclinic dynamics, and wave m icts on oceanography. Measurement of absorptivity and fine structure arameters of water vapor for use in evaluating radia-(NASA-CR-61233) Water 10 p1526 N68-20532 18 p3157 N68-30042 Directional spectra of wind generated waves mea-sured by linear array of surface elevation detectors levation detectors 11 p1688 N68-20889 n effects of heated air on flow in large supersonic wind tu [NASA-TM-X-1636] Normal pressure distribution and wind velocity profiles above progressive water waves 18 p3056 N68-30598 Sulfonates effect on permeability of oil films to water 12 p1866 N68-22057 Perturbation method for nonlinear water waves past RIA-68-1187] 19 p3296 N68-30956 atical model for vapor Design criteria and math 12 p1859 N68-22098 diffusion water reclamation unit [NASA-CR-66637] Change of waveform for head seas travelling along 19 p3215 N68-31243 orizontal cylinde MRC-TSR-8111 Tabulated data on vibrational and rotational energy levels for lower energy levels of water vapor in at-13 p2050 N68-23045 Structure of turbulent boundary layer developed by air flow over water waves [TR-88] 13 p2063 N68-23959 19 p3316 N68-31421 eric absorption by carbon dioxide, water vapor and oxygen (REPT.-08183-2-F) Experimental measurements of turbulence structure, cut and momentum flux, and vertical temperature dif-19 p3233 N68-31992 ference over ocean w [REPT.-08849-1-P] Propagation of cent waves in earth atmost monomers and dimers of absorption coefficier entimeter and submillimeter radio nosphere, absorption of waves by ers of water vapor, and calculation 13 p2102 N68-24153 Computed and ext and deformations on [URS-670-2] and experimental ions on 45 deg slope 13 p2111 N68-24212 al solitary wave shapes 20 p3476 N68-33570

on rate of graphites by carbon dioxide and or including effects of in-pore diffusion and regradients

06 p0788 N68-15515

13 p2056 N68-24344

NDEX 8-33571 3-34379 oxygen -35157 drogen -36857 tions of -37415 n using -37633 e from -38460 19074 10547 es in-

e

files 13049 er sur-13109 13296 ments, 15029 15369

mated 16487 17600 wave 8260 d and els in

9888 ar to 9988 aphy, 0532 mea-

ocity 2057 past 2098 long

d by 1959 1153

upes

212

trapping in cadmium sulfid (COO-1112-157)

importance of topography opagation of internal waves 14 m2241 N68-24927 Surface waves and electron ocean-air interface nagnetic properties of 14 p2223 N68-25188 Height and period me rement of deep ocean (UCRL-503791 14 p2261 N68-25454 Soviet bloc oceanographic research activities on nermal conductivity of waves, distribution of ocean ediments, and flow models 15 p2458 N68-25825 Potential theory problem monically oscillating cylinde as of water submerged har-15 p2568 N68-26185 gation of long waves over w r wavy bottoms 15 p2462 N68-26489 (TR-I) or theory for heave, pitch, roll, and surge of float supported aircraft on water ical-float supported aircra 15 p2387 N68-26747 19,513,31 Pressure distribution, heave, and pitch, of oscillating cylinder in water as hydrodynamic boundary value problem
[NSRDC-2375] 15 n2456 N68-26773 Annular nozzle ground effect machine operating over water and distribution of jet momentum [AD-668695] 16 p2589 N68-27776 integrals of nonlinear equ tions of evolution and solitary waves [NYO-1480-87] 18 p3106 N68-30532 Air flow mea mediately above ocean [AD-670539] 19 p3303 N68-31076 Sea surface temperatures and served from Nimbus 2 satellite wi [NASA-TM-X-60412] and ocean currents ob-e with infrared detector 21 p3686 N68-34261 Cross correlations of isothermal vertical variations of [M-7378] 22 p3904 N68-35271 Sea water waves and wind stress effects on surface oughness at air sea interface [TR-231-18] 22 p3904 N68-35294 Wind-wave to tunnel experiments to determine ratio of ed shear stress to total shear stress on TR-37 22 p3870 N68-35561 Comp rized simulation of water takeoff and land 23 p3990 N68-36486 Linearized theoretical analysis of internal gravity waves from submerged disturbances [TR-117-13] 24 p4247 N68-38152 number scaling and correlation of wind in-water interface and at all fetches 24 p4253 N68-38245 Froude nun [TR-231-23] Physicochemical properties of modified rutile tita m dioxide after waterproofing with methyl-hydrog (RTS-4636) 20 p3508 N68-32346 NAVE ATTENUATION
NT ACOUSTIC ATTENUATION
NT MANDELSTAM REPRESENTATION
NT RADAR ATTENUATION
NT RADIO ATTENUATION
NT SHOCK WAVE ATTENUATION High frequency radio waves attenuation in iono WRE-TN-CPD/T/-137] 07 p0963 N68-16688 ial dielectrics 07 p0980 N68-17053 H-guide structures with a [NASA-CR-92802] Attenuation and disp viscous partly ionized gr [NASA-TM-X-1458] of longitudinal waves in 09 p1303 N68-18703 Attenuation by earth manti from underground nuclear exp le of compression waves 12 p1867 N68-22238 Very high frequency wave attenuation measure-ments of rocket engine plumes to calculate degree of ionization in exhaust gases [LRBA-E-1311] 17 p2850 N68-28873 techniques for hollow New forms and measuring tube waveguide attenuators 17 p2863 N68-29447 ints studied for effects Viscosity and external cor on wave transmission in bloc (NASA-CR-95802) 18 p3008 N68-30029 rasonic attenuation, and reje crystals 20 p3573 N68-33211

Euler-Lagrange rela Brillouin scatteris lated to wave attems and elastic constant [SRRC-CR-68-32] na and applications re-onic generation theory. [NASA-CR-94679] 21 p3755 N68-34502 pagation and attenua-Linear viscoelastic wave pro on in polymethyl methacrylate 22 p3970 N68-35030 WAVE DIFFRACTION Ray optics for asymptotic bou electromagnetic diffraction pr dary layer expa 07 p1036 N68-16935 Diffraction, and reflection of gaseous shock wave flow past solid body 08 p1252 N68-17719 ermination of stripping ad nuclei 10 p1563 N68-19648 Scattering matrix theory for solving problem of in-cident plane wave diffraction by thick conducting half plane and dielectric-loaded waveguide [AFCRL-68-0015] 1 p1744 N68-20620 11 p1744 N68-20620 wedge solved by Son 12 p1862 N68-22353 Electromagnetic wave propagation and diffraction in NASA-CR-94361] 12 p1948 N68-22366 Random wave diffraction in homogeneous anisotrop ic media 17 p2852 N68-29093 Asymptotic series describing diffraction of plane wave by two dimensional wedge 18 p3121 N68-29628 Polariscopic visualization of wave diffraction in lindrical cavity (T-3/7) 18 p3124 N68-30394 F-3/7]
Electromagnetic wave diffraction by successive according to the control of Similarity rules for ray analysis in nonlinear acoustic wave propagation 22 p3855 N68-34926 Geometrical theory of diffraction used to predict apecular acattering of progressing waves by edges [MTR-497] 23 p4021 N68-36801 Elastic wave diffraction by semi-infinite plane bar-riers at interface of elastic media 24 p4348 N68-37836 Diffraction of P seismic wave by earth core and long period amplitudes near core shadow [AD-674606] 24 p4252 N68-38075 WAVE DISPERSION Steady one dimensional gas flow with thermodynam 01 p0049 N68-10109 Dispersion model for calcund collision frequency of low incharge in microwave region ting electron density ressure argon pissma discharge in micro (DLR-FB-67-62) 02 p0252 N68-11156 waves in blood vessels 02 p0166 N68-11265 P-3703 (NASA-CR-90377) romagnetic propagation cting around rocket ex-04 p0478 N68-13303 n of hydromagnetic and ion cyclotron waves fields [NASA-CR-92583] 06 p0889 N68-15521 ation by conducting media 07 p1037 N68-16936 ngitudinal waves in Viscous partly ionized [NASA-TM-X-1458] 09 p1303 N68-18703 (ADP-42) 09 p1334 N68-18905 10 p1519 N68-19616 iques for geophysical

11 p1694 N68-21749

13 p2109 N68-23855

ADP-461

Rayleigi (TR-3)

Electron cyclot ribution in plasme along magnetic fie [IAE-1244] 14 p2321 N68-24495 ant dispersion of alsimpedance and dis minum oxide plasma (AFAL-TR-67-348) 15 p2438 N68-26953 raios by dense particles 16 p2712 N68-27169 ion at Jicamerce Rador Observatory, Peru [NASA-CR-86708] 16 p2654 N64-27543 he-Salpeter equation 16 p2731 N68-28176 or compressional mag recession below ion (NP-17437) 17 p2948 N68-28805 Phonon d um oxide es [IN-1129] 19 p3356 N68-32112 20 p3568 N68-32855 es in elastic plate sup-RISO-1711 21 p3748 N68-34134 ing hybrid mode in disk intern 21 p3668 N68-34365 Power estimate for deflect loaded waveguide of klystron [CERN-68-30] Geometric theory for acoustic wave propagation 22 p3855 N68-34925 WAVE DRAG NT INTERFERENCE DRAG Wave drag of blust body of revolution with conical tail section in symmetric hypersonic flow 18 p2994 N68-29884 dies of minimum wave NASA-TT-F-118031 AVE EQUATIONS
NT DIRAC EQUATION
NT KLEIN-GORDON EQUATION
NT LAME WAVE EQUATIONS
NT SCHROEDINGER EQUATION a and info ponent wave equi 01 p0102 N68-10138 died to se UCRL-175031 OI p0115 N68-10876 to experimental data by 03 p0359 N68-12226 04 p0531 NeE-13363 NYO-3399-1251 05 p0664 N68-14993 ions problems by MRC-TSR-778 octral and scatt 11 p1744 NSS-20654 ry and dyna Perties of N-mic 11 p1747 N68-21362 12 p1927 1968-22410 THE REAL PROPERTY. 12 p1862 1669-22505 Andread Committee (NASA-CR-94398) 13 p1949 1468-22700

SU

.

1

.

1

900

ic waves by small circu ng equinngular spirals 13 p2109 N68-23550 14 p2298 N68-24980 [AFCRL-67-0644] 16 n2734 N68-27164 Deduction of first order co pled mode equations matrix formalism 16 p2734 N68-27165 ers for longitudinal propaga-16 p2734 N68-27166 nch characteristics of tion in magnetically con-16 p2737 N68-27817 Jacobi-Gasso quadratur ations of Rydberg-solecules, and solu-Klein potential energy tion of wave equation [ORNL-TM-2167] 18 p3025 N68-30232 21 p3729 N68-33654 RESO-1771 22 p3937 N68-35865 rin equations for high 23 p4105 N68-36028 on for elastic pion eory 23 p4116 N68-36450 m field theory quar-elativistically covaria potential method for at wave equations for a JINR-P2-39001 23 p4135 N68-37274 we equations, scattering stiged fields and local in-24 p4307 N68-37535 ic wave propagation and multiple adom continuous, and approximate 24 p4303 N68-38044 WAVE EXCITATION NT ACOUSTIC EXCITATION NT HARMONIC EXCITATION tic wave excitation and spin wave in-03 p0406 N68-12258 Gowth of electro ic wave excitation and modifi-in interaction with collisionless 06 p0889 N68-15516 al wave excitation on ical variation 07 p1063 N68-16931 pelectric slabs due to netic wave 09 p1408 N68-18760 [AFCEL 47-0526] m semiconductor insta-ve and total current in-[AE-5] 15 p2543 N68-26748 sonlinear theory and Vlusov cy grid excitation of longituns for low freque 17 p2946 N68-28391 in waves by transverse 19 y3353 N68-31281 nes excited by energy dis-n cyclotron resonance 23 p4140 N68-36471 COO-1695-16] 24 p4243 N66-37549 [NASA-TT-F-11832] WAVE PRONT DEPORMATION 02 p0285 N64-11564

i solitary wave shapes 13 p2111 N68-24212 et on heat transfer to 14 p2374 N64-25332

Relationship of wave functions of unstable partices and particle decay laws
[JINR-E2-3470] 05 p0711 N68-14356 Test sections for small theoretical wind tunnel boundary interference on V/STOL models [NASA-TR-R-286] 19 p3258 N68-31592 Matrix elements of Han harmonic oscillator wave for [JINR-E4-3445] WAVE FRONT RECONSTRUCTION ston potential for Long range trajectory prediction [CONF-670931-1] 05 p0713 N68-14485 02 p0233 N68-11609 Quantum mechanics and statistical mechanics ap-plied to solution of biological and chemical problems-hemical bonding, resonance, spin, and transport Optical system designs and applications of various in-reprometers - conference 07 p1001 N68-17202 applied to optical NASA-CR-91663] 05 p0626 N68-14582 integral-transform formul monochromatic scalar mulation of diffraction theory ar waves from infinite plane 07 p1001 N68-17204 Capabilities and limitations of wave front reconstrucboundaries with known (TR-0158/3230-25/11 79 values 06 p0879 N68-15176 10 p1558 N68-19853 GBROW program for calculation of inelastic elec-tron inelastic scattering by nucleus - nuclear wave func-Holograms that permit multicolor wave front reconstruction as well formation of three dimensional images [YALE-2726E-49] 06 p0883 N68-15238 11 p1699 N68-21438 [REPT.-67-C-356] Laplace transformation used for constructing wave sections for ground and lowest excited states of ydrogen atom - perturbation theory approximation 06 p0887 N68-15955 Summary informat graphic techniques [RQ66EE15] on on X ray holography and holo-14 p2297 N68-24442 Hologram interferometric measurement of surface deformities in mirrors after wave front reconstruction 16 p2658 N68-27037 Asymptotic behavior of wave function in system of charged particles [NASA-CR-92548] 06 p0887 N68-16075 Transformations of optical information using holog-Three body problems in quantum mechanics, and calculation of wave functions of bound and scattering 20 p3535 N68-32468 [ORNL-TM-2008] 07 p1043 N68-16498 Generalization of two beam holography to inclusai-monochromatic radiation of any degree of spa Method and approximations of computer program for electronic energies and wave functions of oc-tahedral polyatomic molecules (ReSSD3) 08 p1212 N68-17347 21 p3731 N68-34149 Scene motion effect on recorded fringes and image econstruction of holograms Bremstrahlung cross sections formulated with Dirac wave functions for screened and unscreened nuclear electrostatic fields [NASA-CR-61573] 08 p1214 N68.17666 24 p4256 N68-37543 SHOCK FRONTS Hydrodynamic equations solved for flow behis front of weak shock wave in water - Landau damning Electron parametric resonance spectroscopy for etermination of molecular wave functions of organic ser - Landau damping 06 p0828 N68-15612 16 p2619 N68-27122 Prolate apheroidal wave functions and their applica-tion to planar aperture antenna pattern synthesis 10 p1495 N68-19683 [SU-SEL-68-034] Wave front observat on line of sight radio wave propagation path using ph [SU-SEL-68-015] Wave functions for 25 states of helium atom and study of spatial correlation in 15 and 25 states of two-electron atoms 16 p2622 N68-27396 Transient ground wave propagation, electric field, wave fronts, and Green function for Sommerfeld waves 10 p1569 N68-20097 Jastrow-like wave function for re-arrangement of nuclear many body problem [IC-67-14] 10 p1571 N68-20440 16 p2655 N68-27664 Shock wave propagation and wave front velocity and decay in anisotropic viacoelastic bodies 17 p2980 N68-28675 Wave functions for calculating beta transition matrix ements of thulium isotopes Wave front coherence effects on radiation parame-(IC-67-20) 12 p1923 N68-22197 ters of large antennas artitioning method for reducing two-electron Breit ation involving positive energy components of wave 17 p2853 N68-29108 Asymptotic method used to investigate discontinui-si on wave fronts in anisymmetric strain of spherical will of resolution. [NASA-CR-94350] 12 p1924 N68-22214 18 p3174 N68-29663 Sum rules for varia [NASA-CR-94597] 12 p1917 N68-22416 tohydrodynamic shock Partial wave function each to three body scat-(NASA-CR-95956) 19 p3340 N68-31436 tering problem [AFCRL-67-0673] 13 p2121 N68-24035 Wave front stress relata n in one dimensional non-temperature dependence. Quantum mechanical treatment of N and CO molecules, RRR Franck-Condon factors for gamma and bete band systems of NO, and wave functions and energy curves of LiH and BH [NASA-CR-94685] 14 p2301 NASA-CR-94685] 13 p2121 N68-24060 [REPT.-34] 22 p3972 N68-35432 Acoustic holography demonstra apace point, wave front may be syr illuminated by changing wave field [DOUGLAS PAPER-5150] 24 p4257 N68-38000 Deformed nucleus optical model for calculating eutron wave strength functions of heavy even even WAVE PUNCTIONS NT MOLECULAR ORBITALS NT PAULI EXCLUSION PRINCIPLE [NAA-SR-MEMO-12538] 14 p2302 N68-24384 Inelastic scattering form factors using projected Har-G2 p0247 N68-11547 14 p2304 N68-24661 Program for solutions to rad-tion of bound system of two pa-functions and bunding, kinetic, as [AECD/TP-16] ns to radial Schroedinger equa-of two particles, including wave X ray scattering factors or artree-Fock wave functions neuted from numerical Hartree-For orticles, including wave and potential energies 03 p0386 N68-T1994 15 p2512 N68-25681 Invariance amplitudes for in with arbitrary spin considered wave functions [FTEF-538] r interactions of particles red in relativistic particle 03 p0351 N48-12350 15 p2521 N68-26506 Molecular rotation barriers studied with Hartree ap-proximation and AO, MO, and BCF wave functions 16 p2609 N68-27626 Algorithm for computation of functions for two center problem [NP-TR-1584] of eigenvalues and wave 03 p0395 N68-12628 Calculation of separated pair wave functions for lithium and beryllium atomic systems mible effects on solar system of phi 16 p2723 N68-27825 05 p0737 N68-14309

Computed and experiments and described on 45 day day [URS-476-2]

VDEX -14356 tial for -14485 ics ap-blems -ansport -14582 theory -15176 c elec--15238wave des of ion 15955 tem of 16075 s, and 16498 ogram of oc-17347 Dirac 17666 y for rganic 18073 plica-19681 and fwo-10097 at of 0440 natrix 2197 Breit 2214 2416 scat-4035 4060 co and 4370 eting 1384 Har-

1661 rical

681

506

ap-

626

for

(LAL-1191) Wave function (AD-671202)

SUBJECT INDEX Kinetic energy spectra and wave functions to con-nect individual and collective particle features of medei during deformation for two body interactions 17 p.2924 N68-28456 Calculation of atomic energy values using interparti-cle correlation, intrinsic state wave functions, and den 17 p2925 N68-28492 Scattering wave functions and cross sections found in applying Rosstrix theory to potential scattering problems to study nuclear reactions 17 p2929 N68-28672 Wave functions of Regge poles represented as generating algebra [KFKI-4/1968] 17 p2930 N68-28803 Spin-spin and spin-orbit co actions, and Hartree appro-stent fields in zero field splitti

Born approximation and wave functions, and peak-ing approximation for Coulomb Born matrix shown to misrepresent excitation and ionization cross sections in misrepresent excitation a atomic scattering problem (NASA-TM-X-63269) 17 p2931 N68-28894 lium, using wave func-17 p2932 N68-28959 on effects in shell model of nuclear structure [COO-1051-18] 17 p2939 N68-29236 Atomic excitation energy spectra from wave equa-tion found using Euler-Lagrange equation for liquid helium 4 18 p3125 N68-29637 Calculation of Hyllerans type correlated wave func-tions for ground state of beryllium atom 18 p3126 N68-29643 Atomic orbitals, nuclear stru-tions of interacting particle shell [T-R-644] cture, and wave func-18 p3127 N68-29733 Localization in independe structure and wave functions relation energy in Be atom lent pair model of atomic ne applied to electron cor-18 p3128 N68-29736 pling, molecular wave simution for self con-18 p3022 N68-30063 nction tables for astrophysical (ARL-68-0026) 18 p3131 N68-30173 Wave functions and equations for non-forward photoproduction of p/o/ mesons from nuclei [DESY-68/15] 18 p3137 N68-30696 Hartree self consistent field molecular wave func-tions and orbitals, and scattering cross sections for hydrogen 19 p3321 N68-30952 Translationally invariant magnetic field single parti-cle wave functions of electrons in periodic potential, with applications to frequency and wavelength depen-dent transport phenomena 19 p3351 N68-31150 Component wave function of Lorentz type used to describe free particle with rest mass and spin [IS-1815] 19 p3332 N68-31611 Current and density coordinates in nonrelativistic 19 p3333 N68-31699 Quark model - properties, types, structure [PUC-937-324] 21 p3743 N68-34488 tions characterizing al-22 p3947 N68-34904 Elastic and quasifree electron scattering from carbon 12, and projected Hartree-Fock wave functions for carbon 12 and boren 11 [153-69/17] 22 p3928 N68-35306 Single particle wave funct calculations from finite deform [JINR-P2-3857] tion and energy spectrum med potentials 22 p3936 N68-35836 Table of central-force geo Talmi integrals for calculating elements using harmonic osci [NRL-6733] netrical coefficients with nuclear two-body matrix ator wave functions 23 p4119 N68-36693 Hartree-Fock calculations of ment from hydrogen to lawren (LA-3691) mic structure of ele-23 p4123 N68-36879 ons in even and odd tin sucleon potential 23 p4130 N68-37089 One-neutron transfer reacti isotopes and realistic nucleon-(IC-68-33) Validity co (CTO-425) Residual interactions in mass 15 and 17 muclei 24 p4308 NSS-37548 Research progress in pla wave interaction, electron de mal conductivity of argon as Orbital parameters in simple approximate wave func-tions for helium

Crystal field effect ECI, CsF, and MgO [COO-1197-31] riers in crossed field [ECOM-0227-3] 24 p4331 N68-37865 18 p3048 N68-30507 WAVE GENERATION of weak resonant wave ingenerator using avalanche 19 p3320 N68-50876 rave interaction with drifted erromagnetic materials 19 p3349 Nas 30950 02 p0187 N68-11165 Techniques for generation a frequency acoustic waves in a [NASA-CR-91338] nd detection of very high of electromagnetic cuttering of plane own leastly marketed 04 p0557 N68-13261 e of wideband FM genera-Design, and perform 07 p0966 N68-16979 SR-10) 19 p3342 N68-31796 and other means of injecting magnetospiere and produc-14 p2241 N68-24927 Electrical resistance and resistivity, by Ohms law, for agnetohydrodynamic generators 17 p2948 N68-28828 Shock-panel coupling flow drives by impedant (NASA-CR-41984) ear mixed frequency generation in eary of nonli 23 p3983 H68-36038 Theoretical study of a teraction of turbulent or [NASA-CR-61985] 21 p3748 N68-34001 Prediction of wave amplitude generated on interface setween gas and liquid flowing parallel in horizontal 22 p3856 N68-35014 [TR-180] WAVE INTERACTION NT SHOCK WAVE INTERACTION WAVE MOTION U WAVES nlinear interactions of spherical shock waves uting from shaped charge explosions and free sur-n water WAVE OSCILLATORS
U OSCILLATORS 02 p0201 N68-11670 Traveling-wave power verse-wave interaction be wave and circuit wave [ECOM-0226-2] 03 p0328 N68-12005 Magnetoelastic wave ex teraction with laser beams [AROD-4582-5-E] ion and spin wave in-03 p0406 N68-12258 at conduction analysis for ionstationary radiative tracting one podies 08 p1257 N68-17725 Textbook on tree [FTD-MT-65-453] os p1154 N68-18008 c waves with electrons (ECOM-0227-1) 10 p1558 N68-19892 Wave couplings anisotropic media at [AFCRL-68-0067] nic applications 11 p1688 N68-21007 12 p1949 N68-22545 Change of wave horizontal cylinder [MRC-TSR-811] ed seas travelling along 13 p2050 N68-23045 ar air turbulence ob-Wave structure relation (served in U-2 aircraft over S [APCRL-68-0001] (UCRL-17564) 13 p2101 N68-23996 Excited spin wave i um-iron garnet [COO-1488-9] measurements on yttri-Rader scattering or ing Kirchoff-Havgers 14 p2330 N68-24677 NASA-CR-8997 ionic collision effects op interaction in nonisothermal [JINR-P9-3689] Linear ordi 14 p2326 N68-25404 TR-131 ies on parametric 15 p2511 N68-26920 res in waveguide with Waves on rotating election (UTEC-MD-68-011) 16 p2633 N68-27199 Einstic theory for surbulent ememble of [NASA-CR-95384] four-wave processes in 7 p2926 N68-28588 Velocity and other interaction of electronic (NASA-CR-95383) Maria Maria 17 p2948 N68-28688 Transverse wave eams and wave guid between rotating UTEC-MD-47-0351 17 p2862 N68-29279

18 p3130 N68-29937

8 p3144 N68-30267

in transport properties by measurements, ther-witom, heat treasily and

18 p3144 N60-30293

NASA-CE-938741

24 p4212 Non-37617

were generation in in-cart with aleach were 23 p4107 N64-36382 combined two shear 24 p4351 N68-38314 WAVE PROPAGATION

NT ACOUSTIC ATTENUATION

NT AUTOMATIC PICTURE TRANSMISSION

NT DIFFRACTION PROPAGATION

NT ELECTROMAGNETIC WAVE TRANSMISSION ELECTROMAGNETIC WAVE INAMESSION SION WAVE PROPAGATION IONOSPHERIC F-SCATTER PROPAGATION IONOSPHERIC F-SCATTER PROPAGATION LIGHT SCATTERING LIGHT TRANSMISSION MANDELSTAM REPRESENTATION MICROWAVE TRANSMISSION MICROWAVE TRANSMISSION MICROWAVE TRANSMISSION RADAR TRANSMISSION RADAR TRANSMISSION RADAR TRANSMISSION RADIO TRANSMISSION RADIO TRANSMISSION SCATTER PROPAGATION SHOCK WAVE ATTENUATION SHOCK WAVE PROPAGATION TRANSMISSION SOUND TRANSMISSION SOUND TRANSMISSION TELEVISION TRANSMISSION TELEVISION TRANSMISSION TELEVISION TRANSMISSION TELEVISION TRANSMISSION TELEVISION TRANSMISSION TELEVISION TRANSMISSION
TRANSPOLATORIAL PROPAGATION DI p0116 1968-10014 01 p0028 1468-1004 01 p0004 1468-16261 ic leading from wid 91 p0117 P08-10553 01 p0116 NGA-10762 62 p6233 Hep-11794 TEMT 4 A-1393

SUB

Ti

tion

G

of p

(N/

(N

cos net

[8

Newtonian gravity theory in dyadic notation, and wave propagation in stellar system 03 p0384 N68-12323

Statistical characteristics of point source radiator field placed in plane laminar medium with weak random heterogeneity [JPRS-43564] 03 p0384 N68-12381

tion and interaction Detonation wave propagatio between explosive and inert fibers 03 p0427 N68-12455

Simulation device for flat wave propagation over conducting surface [FTD-HT-66-679] 04 p0476 N68-13114

Wave propagation in lami and random inhomogeneities [JPRS-43978] ar medium with regular 05 p0698 N68-14084

Elastic wave propagation in inhomogeneous /honded/ media

05 p0746 N68-14124 Attenuation and phase shift computations of elec-tromagnetic waves in exhaust gas jet of ELDO launch vehicle third stage [ERNO-AB-RTT-1/65/65]

05 p0629 N68-14165 Wave propagation, plasma clotron waves, and beam-pl a probes, pulse techniques, plasma interaction studies [SU-IPR-198] 05 p0725 N68-14420

Sound and ultrasov along quantized magnetic field [NASA-TT-F-11455] agation and absorption 05 p0728 N68-14497

Nontransient, steady state solution for elastic medi-m half space and infinite slab subjected to moving (SC-TM-67-779) 05 p0751 N68-14766

Survey on 24 papers derived from studies applying Maxwell field equations to electromagnetic radiation AFOSR-67-2352] 05 p0632 N68-14853

Noise-power-ratio measurements to obtain propaga-on data for evaluating path role in intermodulation intertion of tropospheric scatter test circuit distortion of tropospheric scal (ESSA-TR-IER-41-ITSA-41)

06 p0797 N68-15300 Surface wave propagation over viscoelastic materials

[DA-358/7] 06 m0920 N68-15336 Very long wave propagation determined from field strength [REPT.-23/1965] n independent variables measured on ground 06 p0798 N68-15343

Tabulations of VHF propagation data over mountainous terrain at 20, 30, and 100 MHz [IER-38-ITSA-38-2] 06 p0798 N68-15345

velocity measurements Seismic wave amplitude and to determine geological section

06 p0835 N68-15380

Propagation and dispersion of hydromagnetic and in cyclotron waves in plasmas immersed in magnetic [NASA-CR-92583] 06 p0889 N68-15521

Plasma wave propagram for calculating pl [AFOSR-67-1478] in cylinders - ALGOL pro-

07 p1056 N68-16230 Radar lturricane research, and tropical storm effects

ML-672911 07 p1017 N68-16540

Microwave research electromagnetic wave ropagation, electronic equipment, field theory, laser pice, plasma physics, semiconducting film, information theory, and computer control plants R-452.32-67)

07 p0978 N68-16927 gation by conducting ictromagnetic wave prop-guides in moving dispersive

media 07 p1037 N68-16936 Seismic wave propagation used in prospecting for oil fields and minerals

08 p1169 N68-17607

Surface wave propaga agnetic field 08 at 209 N68-17711 on energy for shock wave detona-

n in elastic half space in

08 p1256 N68-17721 n of very low frequency mul-

Field strength pot timode radio wave ([NRL-6663] 08 p1147 N68-17871

08 pl.173 N68-17981

propagation between conjugate reflection levels stu-died from Explorer 20 and Alouette 2 data ette I data 08 pl173 N68-17982

Wavefront statistics in 3.2mm line of sight transmis-[TR-0158/3230-46/-2]

Nonlinear inversion method for formulating wave propagation theory of radiative heat transfer 08 p1259 N68-18095

Propagation of microwave magnetoelastic and mag-etostatic waves in ferromagnet subjected to pulsed magnetic fields [AFCRL-67-0681] 09 p1405 N68-18315

Wave propagation in collisionless beams of single charge carriers in finite magnetic fields [ECOM-2891] 09 p1317 N68-18358 Modal solution for cylindrical waveguide of arbitrary ross section filled with longitudinally magnetized fer-

[AFCRL-68-0023] 09 p1381 N68-18566

Elastoplastic load wave propagation in rod of finite 69 p1441 N68-18642

Low energy /d,p/ reactions on light nuclei studied by plane, distorted, and Coulomb wave Born approxima-tions [CEA-R-3305] 09 p1393 N68-19031

High power radio frequency plasma heating and wave propagation near fundamental and harmonic ion cyclotron frequencies 09 p1403 N68-19121

Predictions for attenuation, dispersion, and charac-teristic impedance for long wavelength, small am-plitude waves in turbulent flow in cylindrical lines or tunnels. [DSR-76107-2] 10 p1513 N68-19524

Electrostatic wave propagation in warm plasmas cal-culated from radar Thomson ionospheric scatter [MATT-555] 10 p1572 N68-19555

Approximate solutions for transition in dispersive, or conductive me ient wave propaga-10 p1519 N68-19616

Wave propagation in waveguide partially filled with plasma in infinite axial magnetic field [TR-0158/9220-02/-2]

10 p1573 N68-19942 Finite difference methods and two dimensional Lagrangian code for determining wave propagation in elastic-plastic media - TEDDY program [NASA-CR-92034] 10 p1605 N68-20013

Tensor analysis of elastic wave propagation in anisotropic media [TR-18] 10 p1606 N68-20028

Phase velocities for ELF and VLF wave propagation ellow anisotropic ionosphere below ania 10 p1498 N68-20063

Friction induced one dimen onal wave propagation in rods [NASA-TM-X-53714] 10 p1608 N68-20359 Eulerian model for apherical wave propagation in ompressible media

(PB-177297) 10 p1560 N68-20420 Moment approximation for determining combined effects of thermal conduction and radiation on one

NSRDC-2525] 10 p1615 N68-20458 Solar flure effects and very low frequency radio wave

[RAE-TR-67201] 10 p1588 N68-20487 More exact theory of flexural wave propagation in elastic beams

11 p1792 N68-20680

Propagation and amplification of surface elastic waves on hexagonal piezoelectric crystals 11 p1767 N68-20702 Spectral characteristics and wave propagation in magnetosphere of hydromagnetic emissions [AD-663775] 11 p1687 N68-20717

Computer solutions for propagation constants in beam-plasma systems [RASA-CR-93962] 11 p1760 N68-20825

Analog computers applied to problems of elastic are propagation in thickwalled hollow cylinders IC-CR-67-2627] 11 p1740 N68-21150 save propagation i ion plasma frequency in plasma [IPPJ-63] gation near and above 11 n1763 N68-21286

Plasma instability of long across magnetic field [IPPJ-65] dinul waves propagating 11 p1763 N68-21287

Multipolar cyclotron modes in cylindrically, axially, magnetized, cold, collisionless plasma [TR-0158/9220-02/-3] 11 p1763 N68-21484

08 pl149 N68-18052

Propagation and damping of ion acoustic waves excited near and above ion cyclotron frequencies in IPPJ-64) 11 p1748 N68-21675 Quantum oscilla crystals of beta tin ns of helicon wave propagation in

11 p1776 N68-21806

Wave propagation finite length plasma on across static magnetic field in 12 p1944 N68-21970

Mathematical models of light ray propagation in ran-[NASA-CR-94306] 12 p1915 N68-22225 Slightly nonlinear wave propagation in collisionless asma permeated by uniform background magnetic

12 p1947 N68-22245 Continuum approach to theory of elastic waves in eterogeneous materials heterogeneous mai (DOC.-67SD276) 12 p1978 N68-22432

Propagation of electrostatic disturbances in finite temperature plasmas 13 p2123 N68-23131

Continuum approach to anomalous effects of ultrasonic wave propagation based on theory for viscous heat conducting, homogeneous, isotropic fluids
13 p.2052 No8-23380

Diffraction of electromagnetic waves by smarr circular disk perfectly conducting along equiangular spirals 13 p2109 N68-23530

wave propagation in neutral thermosphere [NASA-TM-X-63198] 13 p2061 N68-23695

Coefficients of reflection and transmission of waves in parallel layers computed by matrix and invariant im-(TR-12) 13 p2029 N68-23954

Small amplitude low frequency plasma wave modes in presence of magnetic and gravitational fields [NASA-CR-94616] 13 p2128 N68-23990

Theoretical approach on structure of nonlinear ionization shock front [AFOSR-68-0749] 13 p2128 N68-24046

Nonlinear wave phenomena, mode coupling of drift waves, closed for hot plasma tensor, plasma dispersion function, plasma waves, ion-acoustic waves, and non-linear stabilization

13 p2129 N68-24125 [R-28] Nonlinear effects in propagation of large amplitude magnetohydrodynamic waves in plasmas [NP-17346] 14 p2323 N68-24747

waves in plasmas 14 p2323 N68-24752 Interference of characterist in generation and

Importance of topograp ropagation of internal waves 14 p2241 N68-24927

Discrete analysis methods in mechanics of deforma-14 p2357 N68-24954

Electromagnetic wave propagation in lithosphere, ice, and water - radio communications, electric properties, electrical measurements, antenna efficiencies, and mathematical models mathematical mod [AGARD-CP-20] 14 p2223 N68-25187

Wave propagation at very low frequencies 14 p2225 N68-25205

on for electromag-Propagation constants de netic waves of earth-ionour here waveguide 14 p2251 N68-25206

Disruption of reciprocity principle during daytime propagation of superlung radio waves around earth [NASA-CR-94794] 14 p2253 N68-25644

Method for solution of general boundary value roblem of propagation of long and ultralong adiowaves around earth radiowaves around e [NASA-CR-94798] 14 p2253 N68-25654

Numerical technique for digital computer to solve elastic stress wave problems [SC-CR-68-3501] 15 p2565 N68-25660

Theoretical and experimental correlation of cyclotron harmonic wave propagation in warm mag-[NASA-CR-89184] 15 p2527 N68-25760

Mathematical models on very low frequency wave propagation, based on waveguide mode, zonal harmonics, eigenfunctions, and wave theory 15 p2421 N68-25780

Theory of steady state wave propagation in periodic 15 p2511 N68-26917

revation of radio wave propagation 16 p2619 N68-27122 Wave front obse (SU-SEL-68-034)

25780

riodic

6917

on 17122

ustic waves quencies in Transformation of wave equations of inhomogene-ous multiwave system to coupled mode form, and in-homogenous wave numbers for longitudinal propaga-N68-21675 [AFCRL-67-0644] 16 p2734 N68-27164 nbers for longitudinal propaga-N68-21806 16 p2734 N68-27166 tic field in Green functions for Rytov eq of plane monochromatic waves in [PSRP-350] quation of propagation n random medium 16 p2714 N68-27311 N68-21970 tion in ran-Theory and models of wave propagation in materials with frequency dependent rheological properties [PSRP-354] 6 p2652 N68-27312 N68-22225 ollisionless magnetic Wave front observations on line of sight radio wave propagation path using phased antenna arrays [SU-SEL-68-015] 16 p2622 N68-27396 N68-22245 Nonsteady solution for surface wave equations of sall finite amplitude waves in 168-22432 16 p2645 N68-27595 s in finite Wave propagation and coupling in two interacting larged particle streams analyzed in terms of Maxwell unitions and Lorentz force 68.23131 16 p2737 N68-27715 cts of ul-Equations for theta pinch characteristics of hydromagnetic wave propagation in magnetically con-fined plasma ds 68-23380 16 p2737 N68-27817 nall circu-Damping of longitudinal waves traveling in ther-moclastic cylindrical rod [NASA-TM-X-53722] 16 p2783 N68-27903 er spirals Propagation of perturba ns in viscoelastic and 68-23695 viscoplastic rod [NASA-TT-F-11722] 16 p2789 N68-28115 of waves red by use of radar an-Refractivity variation tennas at both ends of wave proper INASA-CR-954791 agation path 17 p2849 N68-28656 58-23954 Radio wave attenuation to cle exhaust ionized gases [LRBA-E-1311-NT-1] rough ELDO launch vehive modes 58-23990 17 p2849 N68-28658 Propagation velocity and attompressional and torsional etohydrodynamic waves nonlinear nuation coefficients for propagation of mag-8-24046 [ER-38] 17 p2949 N68-28966 g of drift Radio wave propagation through reentry plasma spersion and non-17 p2852 N68-29100 8-24125 Methods of improving radio wave propagation through plasma sheath mplitude 17 p2852 N68-29102 Tropospheric refraction and effects on coverage or long range air traffic control radar 17 p2853 N68-29107 8-24747 8-24752 Theoretical study of surface wave propagated on temperate plasma column with collisions on and 18 p3141 N68-29629 8-24927 Influence of large planar and er and cylindrical segment 18 p3033 N68-29785 8-24954 Theory and equations for propagating pressure waves in liquid filled cylindrical shells [NASA-CR-61884] 18 p3062 N68-30087 Conformal mapping method for calculating elec-tromagnetic wave propagation in heterogenous wave -25187 18 p3036 N68-30256 -25205 Plasma oscillations in terms of ion wave propagation, cyclotron echoes, collision parameters, and beam plasma interactions romag--25206 SU-IPR-224] 18 p3145 N68-30301 aytime th 25644 Electromagnetic wave propagation /lecture notes/ [SR-321] 18 p3125 N68-30744 on theory and wave Classical approach to que value 18 p3138 N68-30781 25654 Dynamic photoele enpagation in cennes lysis of stress wave solve 19 p3374 N68-30883 Ultrasonic attenuation at low temperature in potassi-um and gold 25660 n of mag-19 p3347 N68-30922 Cross correlation method for measuring neutron wave propagation in heavy water uranium assembly 19 p3322 Nes-30996 25760 har vibration and wave propagation in cyline TM-106.2811-051

Electromagnetic ra-propagation, corrugat notated bibliography (PIBEP-68-011) flow [DSR-74629-2] [JPRS-46311] (CP-21, PT. 2) CN-24/A-6) DASA-2101-1] media IGSF/MC/68-6] on approximating inf AFCRL-68-03331

19 p3375 N68-31129

19 p3325 N68-31131

Metal target foils for low energy ion transmission

Electromagnetic wave propagation in medium numped by traveling sinusoidal wave 19 p3315 N68-31155

(COO-1053-9)

Axisymmetric elastic wave propagation in hollow cylinders with open and flat end caps for impact frac-ture problem studies. Wave propagation in cold plasmas and thermal 19 p3339 N68-31231 Field-aligned propagation waves using Alouette 2 satell [NASA-TN-D-4748] n of high frequency radio onic flowing gare-19 p3241 N68-31639 24 p4352 N68-37496 der conditions of Formulas for wave propagation pro astic, isotropie, homogeneous bodies 20 p3564 N68-32532 24 p4347 N68-37663 Thermal wave struct phenomenon of January 1963 [NASA-TM-X-63376] 20 p3537 N68-32697 24 p4250 N68-37824 itude deflection and ranes and rods 20 p3601 N68-32755 Interaction of finite stretching waves in elastic [CAM-100-2] Radio wave propag ed and no media, and application (AGARD-LS-29) 24 p4224 N68-37825 abatic two phase Pressure wave propaga 20 p3462 N68-32781 24 p4225 N68-37829 Multiple rupture points in textile fabrics 20 p3602 N68-32931 and tropospheric e propagation in elastic pl ate with built in edge 20 p3606 N68-33360 24 p4225 N68-37830 nitesimal and finite amplitude wave motion in or radiating gas mi-infinite plane bar-20 p3466 N68-33478 24 p4348 N68-37836 Theoretical problems of transient electromagnetic 20 p3539 N68-33562 24 p4349 N68-37995 INLR-TR-W.311 n of radio waves in earth propagation and multiple stimum, and approximate 20 p3475 N68-33569 g in ra 24 p4303 N68-38044 Transient pulse propagation through linearly scoelastic medium formulated as Volterra integral 21 p3730 N68-33876 ary wind effects on nd variation of soun c temperature - u s for ranging in air propagation of sound d velocity due to at-iltrasonic propagation (AROD-4547-39-E) 24 p4349 N68-38067 U ELECTROMAGNETIC RADIATION 21 p3732 N68-34187 WAVE REFLECTION Elastic wave propag theory of characteristic [NASA-CR-96768] in two dimensions using Characteristics method used to compute flow pro-crities of reflected waves from open end of conical 21 p3790 N68-34361 perties of rel shock tubes (NWL-21211 Wave propagation of microwave tubes [ECOM-2980] w electron beams in Q3 pQ336 N68-12241 Leaky wave reflection of incident power in phased stenna array resonances 21 p3669 N68-34484 Blood vessel axial wave to determine modulus of et [NASA-CR-96766] 07 p0964 N68-16928 21 p3637 N68-34582 08 p1178 No8-17614 ition in hydrogen (NASA-CR-6) 1891 21 p3751 N68-34616 ion of gaseous abook wave c waves to examine inter-08 p1252 N68-17719 21 p3756 N68-34717 face of micropolar ion measured in lead Plastic stress wave prop 11 p1792 N68-20652 22 p3968 N68-34879 rements on phase shift of ultrasonic tion from interface wave upon reflec Analytical and experimental a study of transient wave 11 p1745 N68-20987 ace 22 p3969 N68-34893 duced by sound wave paid-solid media 11 p1748 NSB-21567 Transient press reflections from m (USL-860) coustic and electromagnetic wave scatter on for solid interfaces in compressible 22 p3940 N68-35063 NASA-CR-66621 2027 No.2-23479 Wave propagation in comp [AFML-TR-67-427] 22 p3971 N68-35079 Propagation and using cylindrical shel (SC-DC-67-3210) solutions to problems orkhardening, locking rod 22 p3972 N68-35331 14 p2358 Non-25854 wave reflected from gation in anisotropic 22 p3973 N68-35485 Radio wave propaga Venus atmosphere based eity of refractivity 22 p3961 N68-35399 INASA-CR-95865) en waves in current car Propagation of sorsing ring inhomogeneous by REPT.-3-13 19 p3254 Ned-31874 Display device for co-images from reflecting targe (ECOM-2965) 22 p3945 N68-35775 m-stationary turbuherical wave prop 22 p3864 N68-35993 20 p3457 Nee-32260 Wave propagation and in raiconductors in present nal character (BRL-1400) 21 p3756 2468-34717 shody of second shock Diffusion of precursor ions and electrons upstream of strong shock wave propagating down shock tube [REPT.-1652/2] 23 p4138 N66-36246 32 p3834 Nea-34897 in waters and applica-(EAPL-M-7026) 23 p4050 NAS-36284

SI

d

*

ru

140

fini

們

to d

RN

R

in refle [NA

TR

Pr cous tube field

C

Four WR

E

WAVE RESISTANCE Effects of viscosity on wave resistance using pressure ts of viscosity on wave stion and inviscid flow theory 04 p0492 N68-12994 [REPT.-1236] WAVE SCATTERING ACOUSTIC SCATTERING ATMOSPHERIC SCATTERING ELECTROMAGNETIC SCATTERING IONOSPHERIC F-SCATTER PROPAGATION LIGHT SCATTERING MICROWAVE SCATTERING NT MIE SCATTERING NT RAMAN SPECTRA RAYLEIGH SCATTERING REVERBERATION TROPOSPHERIC SCATTERING NT NT X RAY SCATTERING Scattering and depolarization of electromagnetic waves by rough surfaces [NASA-CR-89984] 01 p0027 N68-10004 ocleon scattering 06 p0883 N68-15182 Model for low energy kaon-mi Sound wave diffraction and scattering by sphere in half-space 06 p0835 N68-15381 Two dimensional Euclidean group, partial wave scattering, and Regge behaviors 07 p1043 N68-16481 Numerical analysis of inverse scattering in elec-(REPT.-8579-2-Q) 08 p1215 N68-17938 Inverse scattering problem [REPT.-8579-3-Q] 11 p1744 N68-20640 Many body multichannel partial wave scattering am-11 p1751 N68-20784 Spheroidal-function series solution for scattering of plane wave by penetrable apheroid [EDL-M1050] 11 p1744 N68-20865 Correlation of orthogonal components of electromagnetic field vectors of scattered waves and polarization effects of nonuniform phase distribution of scintillating signals [KGO-682] 12 p1842 N68-21880 Multiple scattering of acoustical waves by random distribution of isotropic point scatters 12 p1915 N68-22108 Wave scattering for gravity and Rossby waves 14 p2247 N68-24849 Review of Thon son scatter the [NASA-CR-85738] 15 p2429 N68-26707 Reflection and amplification of electromagnetic waves in oscillating medium - scattering of plane wave incident upon time-space periodically modulated medi-19 p3342 N68-31798 Toward vector meson bootstrap in anti-boson boson 20 p3541 N68-32318 Guiding and plane wave scattering of electromag-netic fields by planar corrugated structures structures 20 p3537 N68-32701 Scattering of beam with finite beamwidth from rough impedance surface 21 p3729 N68-33681 Normal velocity distribution on arbitrary three imensional scattering surface struck by weak acoustic REPT.-321 22 p3972 N68-35395 Coupling constant and low energy wave scattering [FTD-HT-66-508] 22 p3929 N68-35401 Double-peaked structure in S wave scattering of two spinless particles above inelastic threshold 22 p3935 N68-35813 Electrodynamic equations and recursion formulas for calculating absorptivity and scattering of millimeter waves in precipitation [NASA-TT-F-11913] 22 p3839 N68-35837 Numerical analysis of partial wave scattering am-

plitude using Herglotz functions NYO-226ZTA-163] 23 p4130 N68-37083

[LA-39191

Parameters are defined for output waveforms used in scan patterns for locating geometric rather than luminous centers of planets [NASA-CR-73165] 04 p0573 N68-13022 WAVEGUIDE FILTERS Calibration of waveguide attenuators by parallel I-F substitution [NAVAIR-17-20GA-07] (ASA-CR-7210-)
Synthesis of pulse compression wavetorms
sighted finite frequency combs in radar systems
06 p0799 No8-15560 10 p1529 N68-19747 New forms and measuring techniques for hollow tube waveguide attenuators 17 p2863 N68-29447 APEX display system and scheduling algorithm, graphic presentation of data, compiler and language for integrated circuit testing, and superposition in Using equivalent circuits in design of microwave average filters waveguide filters [FTD-HT-67-238] 18 p3047 N68-30439 ng [ESD-TR-67-570] Theoretical analysis of hollow waveguide coupling 08 p1152 N68-17915 by thin impedance layers Matched-filter respon [TR-0158/3230-46/-6] onses of linear FM waveform 18 p3054 N68-30608 WAVEGUIDE TUNERS 13 p2025 N68-23143 Calibration of waveguide attenuators by parallel I-F Instantaneous frequency and dynamic bandwidth encepts for phase modulated signal analysis concepts for phase mod [TR-0158/3230-46/-4] [NAVAIR-17-20GA-07] 10 p1529 N68-19747 13 p2025 N68-23245 WAVEGUIDE WINDOWS Eliminating Doppler or range ambiguities related with using repetitive waveforms in radar [NRL-6651] 13 p2028 N68-23916 Microwave power tran n in thin film ws at extremely high frequencies 5] 19 p3352 N68-31240 [NASA-CR-66655] Aperture antenna system loaded with inhomogene-ous dielectric Linear systems analysis applied to transient and imlise response approximations in electromagnetic scat-23 p4023 N68-37234 tering problems [OSURF-2415-1] 15 p2511 N68-26631 WAVEGUIDES NT BEAM WAVEGUIDES NT PLASMAGUIDES Optimization of mixture resolving signal processing structures with pulse waveform and noise parameters Artificial dielectric H-guides, and comparison of at-tenuation coefficients of H-guides with standard waveguides 16 p2623 N68-27665 Radar modulation waveforms and autocorrelations for rangefinding 16 p2624 N68-27804 INASA-CR-903101 02 p0179 N68-11034 Microwave analysis and measurements in study of reducing antenna noise by refrigerating waveguides and waveguide components [NASA-CR-90543] 02 p0189 N68-11792 Functional analysis of FM radar waveforms [TR-0158/3230-46/-7] 18 p3038 N68-30801 Quasi-optic directional coupler, attenuator, for beam waveguide in region of millimeter and submillimeter Structure of plane magnetol wave in rarefied fully ionized plant [NASA-CR-95956] etohydrodynamic shock 19 p3340 N68-31436 INASA-TT-F-11467] 06 p0800 N68-15697 Rapid reduction method of rhythm and rate informa-Shortening current pulse in two-section linear ac-elerator and measuring dependence of critical current tion in large scale electrocardiogram monitoring [NASA-TN-D-4751] 19 p3218 N68-32100 on length of diaphragm waveguide [NP-17013] Digital techniques for sampled waveform spectrum 07 p0981 N68-16248 H-guide structures with artificial dielectrics [NASA-CR-92802] 07 p0980 N 21 p3731 N68-33985 07 p0980 N68-17053 Comparison of microdensitometry and television waveform analysis as expressions of observed land-acape patterns on radar [TR-6] 22 p3876 N68-35378 Input impedances of open waveguides and expotential horns terminated with dissipative dielectrics measured and calculated at microwave frequencies [SC-RR-67-2948] 08 p1145 No8-17412 22 p3876 N68-35378 m radar signals utilizing ambigui-Fourier transforms for aperture admittance of round-plane-mounted waveguide illuminating conty function as error criteron ground-plane-mounted wavegu ducting sheet [NASA-TN-D-4366] 23 p4017 N68-36148 Advanced transient waveform recording instruments 08 p1150 N68-18123 X band propagation characteristics of reciprocal latching ferrite loaded waveguide phase shifter configu-24 p4259 N68-38467 WAVEGUIDE ANTENNAS NT HORN ANTENNAS [NRL-MR-1836] 08 p1154 N68-18170 Ray optical analysis to determine radiation coeffi-cients from open ended waveguide Mathematical model for effects of circularly polarized wave upon rotating half-wave dipole in 07 p0965 N68-16932 waveguide [NRL-6608] 09 p1380 N68-18324 Relation between cut-off, and frequency mode in Modal solution for cylindrical waveguide of arbitrary cross section filled with longitudinally magnetized ferniform waveguides 07 p0965 N68-16933 Conducting flap effects on reflection coefficient of parallel-plate waveguide illum [NASA-CR-66621] [AFCRL-68-0023] 09 p1381 N68-18566 iting conducting sheet 13 p2027 N68-23478 Quasi-omnidirectional resonant array of circum-ferential shunt slots in ring waveguides for narrow bandwidth space vehicle applications at microwave Theoretical and experimental antenna studies for reflectometer designs [NASA-CR-66620] 13 p2027 N68-23479 frequencies [NASA-TN-D-4362] 09 p1303 N68-18616 Electromagnetic wave propagation by earth crust waveguides Analytical method for analysis and design of continuously tapered dielectric matching transitions for waveguides 14 p2225 N68-25209 Admittunce of wedge excited coaxial antenna with 10 p1509 N68-19879 Aperture-admittance expression for waveguide-fed rectangular aperture antenna, loaded with dielectric 15 p2424 N68-25995 Design, electrical, and mechanical characteristics of inflatable cigar and parabolic antennas NASA-TN-D-4430] 10 p1501 N68-20333 16 p2626 N68-27933 Scattering matrix theory for solving problem of in-cident plane wave diffraction by thick conducting half plane and dielectric-loaded waveguide Lossless isotropic plasma effect on waveguide slot imittance using plasma simulation technique admittance using pli [AFCRL-68-0152] 18 p3145 N68-30547 AFCRL-68-0015] II p1744 N68-20620 Mathematical model for computing resistive loss ef-fects on current distribution of thin cylindrical anten-Solution of finite length septum problem by scatter-ing matrix techniques with application to periodic [NASA-CR-96626] 21 p3657 N68-34005 11 p1676 N68-20631 Aperture antenna system loaded with inhomogene-ous dielectric Very low frequency electromagnetic wave propaga-tion in earth ionosphere waveguide [AD-665698] 11 p1691 N68-21354 11 p1691 N68-21354 23 p4023 N68-37234 Dielectric rod antenna feeds for improved use of Guiding and scattering of electromagnetic fields by

(PIBMRI-1371-67)

11 p1748 N68-21694

24 p4226 N68-38022

WAVEFORMS

WAVE SUPERHEATERS

NT PULSE AMPLITUDE

NT PULSE DURATION NT SAWTOOTH WAVEFORMS

U HYPERVELOCITY WIND TUNNELS U SHOCK TUBES

Visible and infrared imaging techniques for aveform analysis of geographical patterns

al patterns 02 p0203 N68-11140

REPT.-670031

EX

LE

747

llow

9447

wave

1430

gnile

MOR.

LLF

747

film

240

ene-

234

f at-

034

y of

792

eter

697

248

1053

ten-

nea-

412

of con-

123 ocal

170

arly

324

гагу

566

rave

616

for

879

-fed

333

f in-

620

tter-

631

354

B by

694

Mutual coupling in three element parallel-plate waveguide array calculated by wedge diffraction and surface integration techniques

24 p4221 N68-37441

Microwave power transmission using circular waveguide Analytic and experimental work on waveguide wave interactions with rotating electron beams [ECOM-01279-10] 24 p4303 N68-37971 WEAPONS DEVELOPMENT Weapons Research Establishment Annual Report 12 p1847 N68-21985 Thin walled parallel plate waveguide radiation pat-tern analyzed by surface integration technique [NASA-CR-1052] 12 p1844 N68-22746 New developments in cable manufacture, and use of waveguides for long distance communication [FTD-HT-23-1006-67] 24 p4236 N68-38135 23 p4192 N68-37058 tion technique 12 p1844 N68-22746 Conference proceedings on friction theory, wear, and lubrication action and materials.

[FTD-HT-23-500-67] 02 p0215 N68-11232 Fabrication and evaluation of five section waveguide irectional filter for multiplexing applications ECOM-2910] 13 p2039 N68-23277 WAVELENGTHS Wavelength dependence of Faraday rotation in nickel films Surface state effects on friction and wear [NASA-TM-X-52380] 04 p0516 N68-13637 Nonlinear microwave effects in superconducting films with respect to rectangular waveguides with thin conducting film [UTEC-MD-68-029] 13 p2134 N68-23557 07 p1069 N68-16959 Optical system design, and position and frequency lock-ons to fringe patterns of Fizeau interferometer with multiple wavelengths produced by tunable single mode laser Adhesive, abrasive, corrosive, and surface fatigue [NASA-TM-X-52426] 11 p1706 N68-21232 Gap coupling to waveguide with an th anisotropic plasma 15 p2529 N68-26052 07 p1001 N68-17208 PH effect on wear characteristics of ten metal com X ray wavelength standards, and reevaluated X ray atomic energy levels [NSRDS-NBS-14] 10 p1567 N68-19820 [AECL-2784] Propagation of electromagnetic disturbances in dielectric constant with sinusoidal variations 13 p2083 N68-23728 16 p2712 N68-27114 Qualitative prediction methods for reliability, wear, and service life of machine tools with fatigue as life X ray wavelength standards and reference values 10 pt567 N68-19821 Interaction of transverse waves in waveguide with aves on rotating electron beam (FTD-HT-67-22) 18 p3081 N68-30446 [UTEC-MD-68-011] 16 p2633 N68-27199 Wavelength dependence of bandwidth for solar Metal oxide effects on friction and wear during slid-Measurement of plasma indepedent variables using radial waveguide 15 p2554 N68-26348 ISP-7/25/1 [CE-TRANS-4743] 20 p3486 N68-32356 16 p2737 N68-27798 Wavelengths of hydroxyl /7,2/ band in twilight sky Cam mechanism wear under conditions of plustic Fourier series expansion of simultaneous integral equations for collinear coupled waveguides radiating through common perfectly conducting ground plane (NASA-TT-F-11573) 16 p2658 N68-28257 IFTD-HT-67-270] 21 p3698 N68-34466 Gas mixture and pressure effects on wavelength and nd form of spectral Ne line emitted by Ne-He incharge tube through common perfectly co [NASA-TN-D-4656] lucting ground plane 17 p2861 N68-28668 WEAR INHIBITORS Antifriction, antiwear, antiburr additives for oils [FTD-MT-64-388] 08 p1183 N68-17912 Transverse wave interactions between rotating earns and wave guides resulting in oscillation and am-ification 18 p3018 N68-29735 ave damping in atmosphere at wavelengths of Powder metallurgical techniques for preparing com-posites of carbon fibers in metals to increase wear re-UTEC-MD-67-035] 17 p2862 N68-29279 20 and 3.2 cm (NRC-TT-1302) Maxwell macroscopic field equations applied to propagation of electromagnetic field in rectangular waveguide 19 p3273 N68-31848 (RAE-TR-67265) 13 p2077 N68-23983 Investigations of TE sub 01 mode circular waveguide transducer for millimeter wavelengths [ECOM-2975] 20 p3448 N68-32404 tant costings for steam Wear and corros 18 p3123 N68-29861 [MTI-68TR13] Spectroscopic and optical pumping experiments on ne spectra and wavelength accuracy of ruby lasers 21 p3700 N68-33928 Transverse wave interactions between rotating electron beams and waveguides Wear inhibitor properties of polymer powders used as dry film lubricant in friction tests of steel balls [FTD-HT-23-502-67] 22 p3892 N68-35932 18 p3130 N68-29937 Conformal mapping method for calculating electromagnetic wave propagation in heterogenous wave guides Radiation patterns and current distribution for quar-rwave monopole antennas with finite ground planes 23 p4020 N66-36672 WEAR TESTS Gamma X ray fluorescence as a method of wear measurement for determining various thicknesses of wearing materials [EUR-3627.E] 01 p0070 N68-10798 18 p3036 N68-30256 WAVES Electron density measurements on air behind reflected shock wave [NOLTR-67-139] 04 p0552 N68-12943 Surface integration analysis of radiation pattern of parallel plate waveguide [NASA-CR-66672] 19 p3240 N68-31426 Wear resistance of drop-forging tools made from WEAPON SYSTEM MANAGEMENT Investigations of TE sub 01 mode circular waveguide transducer for millimeter wavelengths [ECOM-2975] 20 p3448 N68-32404 01 p0079 N68-10910 Mathematical representation of human performance arameters in command and control, weapons, and Wear and antifriction probon steel, stainless steel, lated and vacuum saturated [FTD-HT-67-251] operties of sintered low car-bronze, and nickel unsatu-l with Teflon 07 p1012 N68-16894 Construction, testing, and transmission charac-teristics of H-O1 waveguide stretch formed by dielectric coated aluminum tubing '22 n3818 N68-35963 EAPON SYSTEMS NT GROUND 20 p3450 N68-32533 OPERATIONAL SUPPORT Four-square gear test rigs, and wear rate measurements [NASA-CR-92665] New class of low loss reactive wall waveguides 20 p3451 N68-32650 Her goar arrangements, instrument stred gears 07 p1003 N68-16901 SYSTEM
NT MISSILE SYSTEM
NT NIKE X SYSTEMS Wear tests and performance variations of axial and centrifugal compressor stages operating in dusty air 08 p1230 N68-17404 Cerenkov radiation in dielectric and plasma filled inallistics, control, guidance, and propulsion theory finite space and cavities 20 p3556 N68-32762 01 p0088 N68-10828 Aircraft tire wear tests on open-graded macacramway friction course [RAE-TR-67178] 09 p1269 N68-18 Resolution of thermodynamic paradox and theory of guided wave propagation in anisotropic media [TR-46] 20 p3538 N68-33157 Existing failure reporting systems and alternate in-direct approaches to determining human performance and quantifying human reliability contributions in 09 p1269 N68-18374 Maximum principle for distributed systems applied to design of waveguides and transmission lines [NASA-CR-96358] 20 p3455 N68-33578 Solid film lubricant wear life under various test weapons systems [PRR-67-2] 09 p1287 N68-18468 RIA-67-2548] 09 p1346 N68-18377 Parametric reliability growth models using maximum likelihood procedures to obtain estimates of weapon system reliability [RM-5346-PR] 13 p2077 N68-24206 Modal electromagnetic wave propagation in con-ducting tubular waveguides filled with dispersive media in relative motion Neoprese coating techniq glass fiber polyester laminate 09 p1356 N68-19402 13 p2077 N68-24206 21 p3729 N68-33780 Helicopter gear lubrication and surface fatigue re-lated phenomena [QPR-2] 10 p1535 N68-20262 Shock and vibration environment data for weapon system mounted on surface vehicle Magnetohydrodynamic wave propagation in the ionospheric waveguide [RM-3616] 21 p3687 N68-34556 14 p2361 N68-25480 Wear rate and friction coefficient of steel sliding on olymer laminates determined in liquid nitrogen and Simulated aircraft delivery using rocket sled test track facility Reflectance of wedge angle parallel plate waveguides transverse electromagnetic mode illuminating 14 p2238 N68-25513 NASA-TN-D-44631 Development history of long range, medium range, and lightweight jet bombers
[FTD-HT-67-168] 16 p2586 N68-26963 10 p1535 N68-20325 [NASA-CR-1174] 22 p3833 N68-35172 Testing and selection of materials for wear applica-ions in high purity water
WAPD-T-1977] 12 p1882 N68-22618 Microwave frequency dependent time lag measure-tent for waveguides and phase shift circuits FRANS-24921 22 n3834 N68-38224 hift circuits 22 p3834 N68-35274 12 p1882 N68-22618 ment for wavegu [TRANS-2492] Analog to digital converters for use in weapon con-Friction and wear tests on carbon and graphite core WRE-TN-WPD-76) 19 p3249 N68-31637 Electrical impe IGAMD-8374] on distributions of 13 p2087 N68-23299 Low pass noise filters for reduced signal lag and biases in airborne weapons control system [NRL-6720] 19 p3257 N68-31861 ansformation 22 p3836 N68-35537 [NASA-TN-D-4752] Distribution of high speed curbon steel cutting tool fe taking new life testing methods. Propagation of electromagnetic waves in ferrite filled consisal waveguide and along wire loaded with ferrite tube - boundary values, phase shift dependence on field, and circulator design Radar clotter research program for army air defense Crystal transformation an and sliding friction in two cu [NASA-TN-D-4668] nic ordering on wear ICAL-UB-2508-E-1] 24 p4230 N68-38475 16 p2672 N68-28260 23 p4030 N68-36091 WEAPONS
NT ARTILLERY
NT FISSION WEAPONS
NT GUNS [ORDNANCE]
NT NUCLEAR WEAPONS Friction and fretting wear friction dampers to reduce v pressor blades for turbine eng [NASA-TN-D-4630] tests on materials used as ibrational strengs in com-Computation of waveguide problems by means of Fourier transformation [WRE-TN-PAD-137] and spirit and the 23 p4038 N68-37138

Quantum generator light bed weapons (FTD-NT-23-809-67)

18 u3083 N68-30106

17 p2893 N68-28871

elepment of carbide tool apping technique 18 p3000 1665-29602

Sek

Su cal 1

Ge field [AP

WEAT

WEAT

WEAT

H

cy is tion [NI

ĮIC

WE

WE

[7

ti

Abrasive wear tests on metallic and non refractory materials 20 p3486 N68-32551 Friction coefficient and wear tests with aqueous 20 p3486 N68-32559 Friction and wear properties of alumina bearings for use in gas-lubricated gyro [NASA-CR-88597] 21 p3695 N68-33687 Five ball friction testing machine for studying lubri-[FTD-HT-47-283] 21 p3699 N68-34738 High temperature reciproca on evaluation machines, and cating-type wear and fric-nd evaluation test run data and stainless steel 410 [NADC-MA-6802] 23 p4067 N68-36217 rvated temperatures and de-Wear of polymers at e adence on mechanical RAE-TR-68045] 23 p4085 N68-37149 WEATHER NT COLD WEATHER Northeast Corridor VTOL airbus operations with respect to weather conditions as observed from 1944-1958 (TR-FT-66-4) 03 p0361 N68-11922 World weather watch plan and implementation pro-am - global observing, data processing, and telecom-unication systems networks 04 p0532 N68-13045 iaturn vehicle AS-201 04 p0582 N68-13481 Flight safety plan for [NASA-TM-X-60783] Weather effects on optical detec-uclear bursts determined from di tical detection of deep space of from direct and scattered light flux received at gro ed based detectors from at-[C-83-58103] 07 p1083 N68-17125 Tables of meteorological and m magnetic observations 14 p2286 N68-25634 s of European Atlantic Weather satellite observationers for July and August 1966 16 p2701 N68-27339 Flight load stud es of aircraft used for aerial agriculture operations in Austra [ARL/SM-317] 17 p2808 N68-28994 Comutological guide to Alaskan w [AD-469344] 18 p3108 N68-29745 Atmospheric electricity, and weather conditions durer in Arizona reported [ECOM-2907] 18 p3108 N68-30011 Weather clutter reduction for radar approach con-18 p3111 N68-30860 WEATHER CHARTS METEOROLOGICAL CHARTS WEATHER DATA RECORDERS Analysis of low level wind and temperature data om Round Hill, South Durtmouth, Massachusetts BCS-OSD-1366] 01 p0087 N68-10245 [RCS-OSD-1366] rational performance of auto-on system of weather satellite 08 p1179 N68-17687 Description, and operatic picture transmission Development and deple dispersecological static nt of drifting automatic 18 p3110 N68-30402 and detection mechanism using radar maceing Weather data reco for nuclear cloud indic [ECOM-2966] 22 p3905 N68-35326 LONG RANGE WEATHER FORECASTING NT NUMERICAL WEATHER FORECASTING NT STATISTICAL WEATHER FORECASTING Forecasting, detection, and alleviation of problem posed by flight in clear sir turbulence [NASA-CR-90041] 01 p0004 N68-1036 01 p0004 N68-10364 High density, high data rate mes-work prototype for short range wei [SRDS-RD-67-66] 0 nesometeorological net-weather forecasting 01 p0087 N68-10409 Military weather warm storm forecasting proceds [TR-200] ter analysis and severe 02 p0231 N68-11340 ESSA satelline data incorporate analysis and forecast n porated into numerical odels - conference 02 p0232 N68-11364 INESC-411 n used to evaluate probabilities of one of wet and dry days 03 p0362 N68-12018 Markov cha EMM-67-156 Weather forecasting reference file for providing sidelines for Paine Field forecasts AD-661282] 03 p0363 N68-12213 Visibility for ng for Fittsburgh, Pennsylvania [AD-661279]

Atmospheric Thuiland and So {AD-667550} re data for weather stations in Climatology of significant weather at Mactan Air [AD-661278] 03 p0364 N68-12249 13 p2102 N68-24033 Spring and sun er sea strutus studies at Kunsan Air [AD-667532] 13 p2102 N68-24037 03 p0365 N68-12599 Summer sea air penetrations to Sacramento, California, and model for developing weather forecasting Non-adiabatic heating development and evolution and anticyclones and cooling effects on on of mid-latitude cyclones and anti [AD-667387] 14 p2283 N68-25000 03 p0365 N68-12600 Effect of synoptic analysis errors on predictions hade with barotropic vorticity equation written in Forecasting extratropical onshore gales at Virginia W-50] 03 p0365 N68-12601 14 p2284 N68-25077 Performance of 6 tion/model [WB-TM-FCST-5] nce of 6-layer baroclinic /primitive equa-Soviet bloc research efforts in radio sounding, eather forecasting, hydrology, air pollution, and 03 p0365 N68-12662 ifying hail-bearing convective amplitude responses as functions of wavelength for smoothing filters in meteorological fields [AD-669] 40] Methods for mode in Caucasus, casus, USSR 03 p0366 N68-12721 Detecting and forecast based on synoptic meteoro [WBTM-NMC-43] air pollution potential ng probability of frontal sur major islands of Hawaii 17 p2908 N68-28898 Technique for forecasting assage within 24 hours at four r 04 n0532 N68-13033 Passage with [HIG-68-5] esting techniques 04 p0533 N68-13296 [WBTM-TDL-13] Hydrology, precipitation, cloud boundaries, weather forecasting, and instrumentation spheric turbulence, tem-ents, and cloud studies 06 p0868 N68-15028 Weather forecastin 17 n2909 N68-29452 Technique developed to forecast surface wind gusts based on maximum wind velocity aloft in low levels [AD-669366]

18 p3108 N68-29638 Synoptic procedu United States [PB-175804] ow forecasting in central 07 p1016 N68-16177 Meteorological sounding rocket data and weather forecasting of onset of monsoon over India and southeast Asia [ETAC-TN-68-2] 18 p3108 N68-29725 Formation, prediction, and dispersion of fog 07 p1017 N68-16562 Short range, subsynoptic surface weather predictions Computer buffer storage device for storage, handling, and preprocessing in weather forecasting data system 07 p1019 N68-16824 [WBTM-TDL-11] Methods and data collection for predicting winter [FTD-MT-24-128-67] 18 p3040 N68-30138 07 p1020 N68-16906 Meteorological research from Soviet literature deal-ing with weather forecasting, clouds, moisture content, mapping, and atmospheric radiation nd and 850-mb meteorological sphere for October 1967 08 p1195 N68-17344 maries and meteorological charts for Germany and Northern Hemiaphere during October 1967 18 p3110 N68-30543 Gulf of Bothnia and Baltic Sea conditions effect on weather and climate of northern Europe, especially Finland, in autumn and winter 20 p3468 N68-32463 nic effects of m ogical forecasting stan-Small scale weather forecasting and analysis program dards for supersonic civil transp [RAE-TR-66297] 08 p1196 N68-17550 20 p3520 N68-32546 [WBTM-WR-29] ology, weather forecasting, cloud atmospheric circulation Climatological summaries for airfield areas in Cen-al America 08 p1197 N68-17599 IAD-6718451 20 p3521 N68-32725 Meteorological research in U.S.S.R. dealing with ind characteristics, climate and temperature, weather precasting, and automatic processing of meteorologi-Procedure for operational forecasting of wind set-up on Lake Erie
[TR-11] 20 p3522 N68-32756 09 p1370 N68-19169 ues for verification of operational on forecasts probability precipi WBTM-WR-25 M-5431 09 p1370 N68-19484 Accuracy of forecasting data on temperature and WBTM/FCST-8] 10 p1551 N68-19773 Annotated bibliography of hydrometeorological Statical model and co WBTM/HYDRO-6] 10 p1552 N68-19964 Forecast performa fices for 1966-67 lected weather bureau of-[NASA-TM-X-63313] [WBTM/FCST-9] 10 p1552 N68-19975 Sea and coastal wind reports for air streamline pat-tern predictions over California [P-3750] 11 p1734 Ne8-20769 [NAVAIR-50-1D-505] Automatic technique for visibility below VFR conditio [AD-672270] Literature survey of Soviet bloc research in neteorology 11 p1734 N68-21278 Synoptic models for weather forecasting in Tokyo, [REPT.-82-48-1] [AD-666260] 11 p1735 N68-21436 Synoptic feature geography, storm tracks, and com-posite map of recurring synoptic features relevant to weather forecasting for Tokyo, Japan [AD-66696] I p1736 N68-21748 [M-542] 11 p1736 N68-21748 Disturbances in large-scale p synoptic seasons as means of for [M-7410] Physical numerical model for predicting synoptic scale low cloudings 12 p1900 N68-22259 Low level thickness charts as aids to weather [AD-666707] 13 p2097 N68-23124 [AD-667551] s in South Vietnam 13 p2100 N68-23795

ting instrument flight

13 p2101 N68-23952

visibility at Sell (AD-6672151

63 p0364 N68-12248

NDEX

ations in

8-24033 nsan Air

8-24037

Califor

ecusting

8-25000

dictions

8-25077

3-25824

ngth for

-27108

frontal Hawaii -28898

veather

-29452

d gusts ch -29638

euther a and

29725

lorage,

30138

e deal-

30543

ect on ecially

32463

gram

32546

Cen-

12725

et-up

2756

2777

ather

3069

3311

3593

ial 1373

5077

cust-

1080

data

241

ural

255

565

leu-

circulation, synoptic processes, and influences that determine weather polar regions during October and Background circulation hemispheric influences forecasts in polar regis November [M-7408] 22 p3908 N68-36006 observations, and theories atmospheric circulation, Selected model a cloud form precipitation, a atting 23 p4093 N68-36421 ity theory applied to numerical forecasting is of frontal precipitation 23 p4093 N68-36426 Forecasting procedure for heavy summer squalls based on wind velocity and cloud measurements 23 p4094 N68-36427 Severe local storm characteristics observed over cen-tral and eastern United States by meteorological satel (ARA-SG49-F) 23 p4094 N68-36487 Summary data on Servict and American meteorological satellite programs and proposal for European meteorological satellite program [ESRO-SN-45/ESI_AB] 23 p4176 N68-36973 ostrophic adaption between pressure and wind n meso- and small scale motions field in meso- and sn [AFCRL-68-0275] 24 p4281 N68-38047 WEATHER FRONTS
U FRONTS [METEOROLOGY] WEATHER MAPS WEATHER MODIFICATION NT CLOUD SEEDING Project and management planning for national weather modification program [NASA-TM-X-60721] 03 p0364 N68-12375 Hail prevention research an [ATD-68-26-101-1] field experiments 07 p1017 N68-16442 Airborne instrumentation and measurement accuracy in silver iodide cloud seeding for rainfall augmenta (NRC-9978) 10 p1529 N68-19869 Soviet-bloc research abstracts on atmospheric circu-lation, meteorological satellites, weather modifications, and cloud physics 10 p1553 N68-20531 Planning for national weath [ICAS-12] 19 p3272 N68-31700 Cloud seeding theory and m in precipitation development eorological parameters 21 p3719 N68-34784 modification and cloud Critical summary on weathereding experimental statistics 21 p3720 N68-34790 Computerized comparison of seeded and not-seeded onvective cloud depths and predicted precipitation 21 p3721 N68-34794 Weather modification programs for precipitation, orms, fog dissipation and hall suppression VSF-68-21 23 p4095 N68-36582 storms, fog die [NSF-68-21] Numerical modeling of ice crystal growth rate in air with weather modification applications [RM-5715-NSF] 23 p4096 N68-37271 WEATHER BADAR U METEOROLOGICAL RADAR WEATHER RECONNAISSANCE AIRCRAFT Conference proceedings on airborne meteo 07 p0990 N68-16205 [NCAR-TN-29] WEATHER STATIONS Surface climatic data tabulations for Antarctic sta-01 p0086 N68-10064 Ionospheric vertical echo data from meteorological station in Germany [REPT.-254-F] 01 p0061 N68-10853 01 p0061 N68-10853 Automated meteorological instrumentation and ob-serving system for recording data on lower layer of atmosphere [PB-173860] 04 p0307 N68-12971 d ground station instrumen-picture transmission from Airborne equipment, as tion for continuous seteorological satellite meteorological satelli [DLR-MITT.-67-14] 06 p0844 N68-15247 of sampled wind data from on meteorological tower on Statistical evaluation nemometers mounted

08 pl 198 N68-18246

mine effect of wind ed-

10 p1550 N68-19500

and functional opera-cal tower facility 11 p1680 N68-21763

(NASA-TN-D-4395)

Surface wind analysis to di dies on balloon launching [NCAR-TN-33]

[REPT.-7486-278] Development and deploym radiometeorological stations [RM-5624-PR] at of drifting autom 18 p3110 N68-30402 Organization and operational functions of Weather 19 p3303 N66-31438 Current speed, temperature, and salinity measured by Danish light vessels and coustal stations 19 p3271 N68-31514 Integrating pyranometer for clim stations and mesoscale networks [PB-177740] 19 atological observer 19 p3361 N68-31684 Small scale weather forecasting and analysis program 20 p3520 N68-32546 [WBTM-WR-29] Meso-meteorological network data for short range prediction of aviation terminal weather [SRDS-RD-68-40] 20 p3321 N68-32716 Climatological sural America or sirfield areas in Cen-20 p3521 N68-32725 [TR-11] Terminal forecast reference file (AD-672815) 22 p3907 N68-35579 lonoupheric data for October 1967 from Woomers, outh Australia (WRE-CPD-1967/10/W/) Five inch gun met Highwater, Quebe Operations data for Europe in Chile Quantitative mon yais for United State [ESSA-TR-ED6-6] WEATHERING Aging of reopress [AD-656300] NASA-CR-92522] Microflora and micing, decomposition, an minerals [NASA-CR-92525] Microbiological analyses of surface layers of rocks to termine role of microorganisms in weathering of [NASA-CR-92538] Computer data bar gincering of equipmen [SC-WD-67-426] Weathershillty of polyolel [PLASTEC-32] Fiber metal acousing for jet aircraft no [NASA-CR-66643] WEBS [MEMBRANES] Tamile testing, optical and electron fractagraphy, conductivity testing, and chemical analysis of structural failure of oxidizer task ring baffle web [NASA-CR-61806] 15 p2476 N68-26868

Photonium dioxide nuclear fuel element package of BR-5 reactor - inotopic electric power sources for radio meteorological stations (JPRS-4510) 12 p1903 MAR-21973 WEDGE FLOW Wind tunnel study of mass transfer effect on wedge induced laminar separated boundary layer at Mach 1.2 (ARL-67-0169) Od p0492 1858-12981 Peculiarities of Mach reflection of shock waves mor-ing in carbon dioxide and nitrogen at supersonic speeds Thermoelectric generation of isotopic electric power for radio meteorological stations 12 p1903 N68-21974 07 p0987 N68-16862 for weather stations in Atmospheric pressure de Thuiland and South Vietnus [AD-667550] Real gas wedge-induced cooled blust flat plate at hype [NASA-TN-D-4320] 13 p2102 N68-24033 prological research news on wedge surface for layers at hypersonic 14 p2283 N68-24532 Time and space variability of atmospheric ballistic (RAE-TR-67114) 15 p2497 N68-26636 Experimental drag measurements of wedge center body intakes at Mach 1.56, 1.86, and 2.14 [ARC-CP-968] 12 p1814 N68-22651 Wedge-type pitot static pr es for turbo 20 p3460 N69-32462 \$2-9191 rements on slender two sonic viscous interaction [TR-0158/3240-10/-12] WEDGES er program and numerical analysis of low number flow over blust wedge with marrows 03 p0334 N68-11966 (GDC-DBE67-12) il-spacecraft interaction forces during impact tests wedge, spherical, and cylindrical shaped projec-05 p0746 N68-14175 NASA-CR-916901 al forecasting of wind set-up if ring shaped sweep-line, 20 p3522 N68-32756 05 p0631 N68-14632 chaique for exiculating pressure coeffi-es in symmetric, hypersonic, ideal gas 09 p1327 N68-18683 Upper and lower bounds for four lowest an bration frequencies of truncated wedges and of tilt pinned-pinned, clamped-pinned, changed of free-free and conditions 22 p3871 N68-35661 orological sounding site at 23 p4092 N68-36190 12 p1974 1968-22032 ers Observatory rface presure, skin friction, and hast transfe surements on sharp flat place at zero tagle of si-and at large and small wedge angles in hypersus 23 p4171 N68-36914 tabulated from data ob-ns in Greenland between [CAL-AF-2041-A-2] 16 p2583 N68-27034 Stability of wodge shaped airfoil in supersonic for [TG-230-T544] 16 p2585 N68-27874
Assuppostic series describing diffraction of plant 23 p4096 N68-36951 itation distribution smal-tations 23 p4097 N68-37389 18 p3121 N68-29629 Effect of boundary layer blood on host transfer an oneter 01 p0080 N68-10229 sonic speeds (NASA-TN-D-4686) ai analyses on effect of 06 p0832 N68-15142 p3322 N60-3100 rganism offects on weather-econdary synthesis of primary Mellin integral transform placement near vertex of ol-soundary conditions [AFOSR-68-1373] 06 p0840 N68-15764 19 p3380 N68-31788 Wake flow propertie reder bodies at Mach 6 20 p3391 1968-32333 06 p0841 N68-15825 prior of personnel x for environmental en-10 p1615 N68-19332 21 p3619 N68-34491 [NASA-CR-96722] 21 p3709 N68-34410 BULL DENSITY PUNCTION (NASA-CR-90235) 02 p0165 N68-11167 development and test-22 p3894 N68-35186 THE REAL PROPERTY. NRL-6635) 06 pil91 1468-17776 chalges for probability 14 p2279 1468-24643 from failure data (BNWL-SA-1930) 23 p4102 100-30041 Imperioris analysis for Analytical procedure for determination of deflec-ons and stresses in web-stiffered sandwich shells derestornal pressure 24 94275 1988-3764 21 p3782 N68-33733

SUB

[N

WE

Statistic confidence bounds on remaining eiball sampling model with progressive censoring 24 p4275 Not-37645 ts on reliable life for Calculation tables for lower confid able life under Weibuil distribution dence limits of reli-24 p4275 N68-37648 m hazard functi had used in estimating Weibull shape paras [ARL-68-0076] 24 p4277 N68-38214 WEIERSTRASS FUNCTIONS Punctional analysis applications to approximationry, and Stone-Weierstrass theorem on simultars sinterpolation and approximation 18 p3105 N68-30216 Weierstram functions and Hamilton-Jacobi equation applied to trajectory optimization and optimization and optimization and optimization and optimization and optimization and optimization are consistent transfer of the control of the control optimization and optimization and optimization are control optimization. 24 p4301 N68-37803 WEIGHT [MASS]

NT BODY WEIGHT

NT STRUCTURAL WEIGHT Material composition, weight, size, and unfolding factors entering into design of inflatable space station [NASA-CR-92596] 06 p0919 N68-15239 Weight, heat tramfer Rankine cycle space ra-ferent finned tube geom [NASA-TN-D-4411] ficiency comparison for constructed of three dif-07 p1094 N68-16324 n weight de rams for multiple load-(TR-8) 07 p1089 N68-16354 Low weight focusing design for traveling wave tube (ECOM-02578-F) 10 p1506 N68-20252 ndards by scaling am-use and activity 12 p1841 N68-22989 Preparing radioactive poules of accurately mes (CEA-R-3365) Correlation between electrical resistance and weight tio for kinetic analysis of copper oxidation 13 p2017 N68-23824 Radiation resistance, outgaining characteristics, and eight of five electrical insulation materials for NASA-TN-D-4553] 16 p2692 N68-28264 of weight savings from using ds for large launch vehicles 19 p3382 N68-32071 tive analysis of [NASA-CR-73235] 132307 ne weight and power characteristics and power for spacecraft crows 20 p3411 N68-32901 UPAS-461731 WEIGHT ANALYSIS - wey on min weight design aspects of stiffessed cylinders us [NASA-CR-963] 02 p0275 N68-11282 Weight analysis and in version of small astronomi [ESRO-TM/P/-60] ate for integrated 04 p0582 N64-13398 Weight analysis as tronomical satellite [ESRO-TM/P/-59] ac of large as-04 p0582 N68-13407 Payload type and de effect on space flight MWF-FB-W-67-18] 06 p0916 N68-15519 Size and shield weight a st-spectrum, liquid-metal pairements calculated for soled nuclear reactor for MAS TN D-315 06 p1207 N68-18197 riable geometry structural 16 p2774 N68-27941 PERGRET INDICATORS
NT MICROBALANCES Deadweight facility for call-ing devices up to 300 lbs matin stops of 10 lbs (NBC-9772) eration of force measur-02 p0195 N68-11704 sensors to determine icial satellite (ESD-TR-48-157, V. I) 17 p2854 N68-29204

ctor strain gages to in-offness of wind tunnel tion accorney, range, on SEL-MSL-1928; 22 p3876 N68-35247 GHT MEASUREMENT Comparing microbalance weight measurement, X say fluorements, and Rutherford dispersion, for mea-mering small thicknesses [NP-17365] 18 p3075 N68-30340 01 p0043 NAS-10320

Applications and limitations of computers in wind righting Time synthesis method to determine trial and weighting functions effects on synthesis calculations [KAPL-F-3392] 05 p0710 N68-14342 Recording errors effect on clock adjustment calcula-ins of photoelectric time transit device 05 p0740 N68-14929 Duality results for pair of infinite dis programming problems [TR-44] squares random varial [NASA-TN-D-4575] Optimal approxim and linear and non Galerkin type with p [NASA-CR-92216] WEIGHTLESSNESS Design, fabrication and zero gravity flight tests of prototype mass measurement system suitable for zero, partial and one gravity environments [NASA-CR-66479] (2 p0168 N68-11020 Effect of changing gravity and weightleamens on mopressin control systems NASA-CR-90750) and Apollo applicati [NASA-CR-66520] Macaca nemestrina pigtall monkey used for deter-mining space flight effects on physiological functions -Biosntellite project [NASA-TM-X-60822] 05 p0609 N68-14106 Spacecraft system to rightless, earth orbital, o Plications Program /AAP/ [NASA-CR-66507] dynamics in zero gravity [NASA-CR-61476] Designing experiment critical state and liquid ness for Apollo/LEM [NASA-CR-61553] using water immersion [LMSC-5-24-65-3, REV. 2] penditure index change NASA-TT-F-11406 NASA-CR-463341 logical effects of estibular and succ

08 p1132 N68-17756 ity and surface ener-Weightlessness in space, gy, and behavior of liquids [NASA-TM-X-52395] 10 p1515 N68-19795 onary gamous diffu-Weightlessness effection during space flight 10 p1465 N68-20155 of manned orbital and human reactions to mobilization, cabin atinterplanetary space fligi weightleamon, acceleration mospheres, and environmen [AD-665107] 10 p1470 N68-20545 logical changes during med space flight 10 p1470 N68-20547 ted effects and physical weightlessness of m ects on human otolich 10 p1471 N68-20554 Liquid flow into b erical tank during [NASA-TM-X-1526] 11 p1686 N68-21365 s on lateral sloshing in s conditions 14 p2241 N68-24758

Zero gravity coast phase air gun development 14 p2238 N68-25536 Liquid-vapor interface stabili in cylindrical tank during weight [NASA-TN-D-4628] lity during liquid inflo 15 p2451 N68-25866 Abstracts of Soviet litera used cabins, exobiology, apere on weightlessness, ecraft sterilization and ogy, spa other aspects of bion [ATD-68-76-108-3] bibliography 15 p2398 N68-26845 nd centrifuge design to Spacecraft attitud study weightlessness [NASA-CR-85177] 16 p2603 N68-27156 Behavior of liquid in: [RAE-TR-67207] ity environment 16 p2647 N68-27747 iological aspects of phtlessness, physic, human acclimati ronautics and space science -ral effects, oxygen consump-n and metabolism, and train-[DLR-FB-68-24] 16 p2599 N68-27875 Physiological effects of weightles simal organism sess on man and 16 p2599 N68-27877 aptation to limited muscular sical exercises under condi-

04 p0502 N68-13599

04 p0458 N68-13784

ctions for statistical

06 p0859 N68-15040

13 p2091 N68-23213

14 p2280 N68-24565

hted residuals method, cations of methods of

19 p3376 N68-31267

anctions applied to am-cattering channels 21 p3660 N68-34333

03 p0306 N68-12568

is of sensory deprivation ring manned space flight 04 p0455 N68-13196

pment of orbiting exper

support two primates in stended flight in Apollo Ap-

04 p0460 N68-13840

05 p0743 N68-14617

fluids and liquid drop

06 p0829 N68-15781

fluid behavior at near-dynamics in weightless-ft in earth orbit 07 p0985 N68-16653

07 p0950 N68-16818

07 p0947 N68-17112

ife support system com-

07 p0952 N68-17179

ness on human and

nge, and energy ex-

s of weighted sum of chi

ng space flights - fast

luman reactions and ad wity, and effects of phy is of weightlessness 17 p2819 N68-28511 Low temperature control for operation of supercon-octing systems under orbital flight conditions, such as

18 p3170 N68-30064 Weightlessness and artificial gravity simulation [NASA-TT-F-11767] 18 p3057 N68-30731 Manned evaluation of zero gravity humidity control stem in potable water recovery unit for simulated successft cabins spacecraft cabins [NASA-CR-66640] 18 p3016 N68-30752

Breadboard model design and construction of test quipment for studying silver zinc battery behavior in ero-g environment of earth orbit zero-g environment [NASA-CR-95993] 19 p3204 N68-31373 Methods and technic iovascular reactions of s for determining psychocar-ing conditions of weightlessness in orbiting sate! [NASA-CR-96450]

20 p3408 N68-33333 onkeys during weightless 21 p3632 N68-33910

Changes in pulmonary ventilation, gas metabolism, ad energy expenditure of cosmonauts during weightlessness [SAM-TT-R-942-0468] 22 p3811 N68-35434 matical model for tion at zero gravity in spacecraft environ [NASA-CR-86106] 23 p4188 N68-36861 afety characteristics of dielectrophoretic liq [AMRL-TR-68-21] 24 p4207 N68-38061 mmary on weightlesaness in U.S.S.R. informati (FTD-MT-66-157) 24 p4209 N68-38453 WEIGHTLESSNESS SIMULATION

imulated astronaut translational motion across arn S-4B stage orbital workshop crew quarters floor and wall grid configura [NASA-TM-X-53667] 02 p0271 N68-11192 ogical, and medic light - sensory dep ration tolerances, dems during mo i, motion sicknes in biosynthesis. (JPRS-43762) 04 p0452 N68-13181 ing acceleration, and ed parabolic flight 04 p0461 N68-13198 Motion coordination weightlessness phases of ma

chinques for applying special epoxy resineds on stable surfaces to obtain very flat amoss over large areas in gas bearing weightles (AFAPL-TR-67-119) 09 p1347 N68-18437 ng in apherical and cylin-oldal bottoms 09 p1327 N68-18663 Simulated low gravity slot drical tanks with inverted ell (NASA-CR-61746) methods for asrospace [NASA-TT-F-11515] 09 p1385 N68-19399 n of zero gravity condi-intensece and repair 09 p1291 N68-19493 Neutral buoyancy s tions encountered in a [NASA-CR-61649] er immersion simulation study of astronaut per-see during airlock ingress or egress at reduced

NASA-CR-9711 10 p1477 N68-20339 effects on locom in simulated issuer gravity (NASA-TN-D-4464) 10 p1477 N68-20354 68-25536 rid inflow 68-25866 tion an 8-26845 design to 8-27156 M 8-27747

onsump-ed train--27875 an and -27877

of test 11373 ocar-3333 tless 3910

liam, tring 434 wity 861 s of 061

nd

98

17

INDEX and scaling laws for low gravity slosh frequencies and (NASA-TM-X-60484) ng 14 p2243 N68-25473 Zero gravity simular ethods and applications in mingtion for D-021 and D-16 p2785 N68-27931 d artificial gravity simulation 18 p3057 N68-30731 Weightlessness and [NASA-TT-F-11767] nd studies of effects on ts 19 p3212 N68-32142 WEIGHTS (COEFFICIENTS) WELD STRENGTH Weld quality of electron for LOX engine cutoff se [NASA-CR-61812] tron beam welded sensor tube 14 p2266 N68-25523 Failure analysis of tooling b head of Saturn 1C stage fuel tas [NASA-CR-61805] m weld in lower bulk-15 p2476 N68-26849 Resistance spot weld endable wire technique niess steel fail by ex-Y-1613] 18 p3081 N68-30455 Gas tungsten arc we reperties of 2219 als periments for improving by adaptive control of ten puddle 19 p3295 N68-32052 INASA-CR-619211

Metallurgical analysis weld heat affected at COA-MAT-21 20 p3496 N68-32569 Deformation effects on stre igths of welded and sheet (NASA-CR-61984) 23 p4074 N68-36286 WELD TESTS

Metallographic studies, formance of out-of-vacuum [NASA-CR-61463] weld test data, and per-electron beam welder 06 p0851 N68-15717 ting for rapid inspec-Nondestructive ultra-tion of weld defects in al (NASA-CR-61583) 09 p1347 N68-18625 Cust pin tear and hot du copper nickel alloy welds [WERL-0029-4] tility tests of Monel and 11 p1705 N68-21196 Combination of the determination of well [NASA-CR-73207] ues for nondestructive electronic circults 11 p1708 N68-21683 ation of vario

ies for gas tungsten arc welding of alumi [NASA-CR-61843] 16 p2671 N68-27902 Ultrasonic Delta tech aluminum alloy weldmer [NASA-CR-6[952] for detecting defects in 21 p3699 N68-34770 WELDABILITY

Weldability of alumi components [NASA-CR-61181] num alloys used in Saturn IC 05 p0666 N68-14131 weldable and ductile Mo. Process development of we processing of W-Re-Mo alloys loys and purified Mo 06 p0853 N68-15355

Cast pin tear and hot ductility tests of Monel and opper nickel alloy welds [WERL-0029-4] 11 p1705 N68-21196 Variable restraint technique for study of hot cracking and weldability in fusion welds
16 p2682 N68-27811

ties, and weldability of aging steel 18 p3092 N68-30445 Tensile and fracture peope oh strength titanium free mar (NRL-MR-1869)

WELDED JOINTS NT SPOT WELDS

Metallurgical analysis of nickel maraging steel welds transmission electron microscopy (WL-2114) 02 p0215 N68-11208 [NWL-2114] ar metal ir joints fabricated by diffusion welding [NASA-CR-91435] 04 p0515 N68-13219 Determining bending moment magnitude along con-pur of cylindrical shell-circular plate joints 04 p0591 N68-13849

Welded joints of very thick steel plates [EURAEC-1927] 09 p1440 N68-18364 Impurity effects upon notch toughness and tensile properties of high purity iron weld 13 p2080 N68-23162

Ultrasonic inspect piemental rings in de [REPT.-6708.294] on of butt welds in steel sheet sup-14 p2263 N68-24619 Tungsten inert gas welding, consumable electrode as shielding welding, and fusion welding of sitanium

15 p2472 N68-25966

Weld heat affected zone structure and properties of QT 35 steel determined by resistance heating [COA-NOTE-MAT-5] 17 p2898 N68-28384

welded joints [COA-NOTE-MAT-18] 17 p2890 N68-28385

steels outside of visible to plastic deformation Welding embrittlement of at-est-affected zone region due to COA-NOTE-MAT-19] 18 p3093 N68-30473 welding of stainloss steel

Pre-pressure resistance fuel tank [S&T-MEMO-9/67] 18 p3082 N68-30769 elded steel tube joints Inplane stress analy seer axial loading

Stress-strain diagram microjunctions in vacuu [NASA-TN-D-4743] cold welded copper 19 p3292 N68-31517

Metallurical study of possible mechanisms or measure fected zone hot cracking in 18-Ni managing steel 20 p3497 N68-32575 roing on properties of n zone 20 p3497 N68-32590

Termile strength, pin of welded joints in cont (JPRS-46254) quid lithium 20 p3603 N68-33095 making joints using com-Mechanized process for mined resistance spot welding

[FTD-MT-24-252-67] 22 p3883 N68-35435 Resistance of welded jo [JPRS-46511] ninst cold cracking 22 p3883 N68-33596 WELDED STRUCTURES

Ultrasonic inspection of L and T welds in CCN-012-Mario D'Almeida ship [TN-6702.284] 02 p0218 N68-11822 on futigue properties af for reactor pressure U-1228-P-4-28] 03 p0376 N68-12556

cycles in weld heat affected plates with embedded ther ICOA-NOTE-MAT-13] 04 p0589 N68-13318

sting for rapid inspec-Nondestructive ultra-tion of weld defects in a [NASA-CR-61585] alloys 09 p1347 N68-18625 as corresion cracking of 09 p1354 N68-19481

Ultrasonic tests for parameters BNWL-529] ring SNAP 15 weld 11 p1739 N68-20983

Combination of three to determination of weld qual [NASA-CR-73207] techniques for nondestructive ality in electronic circuits 11 p1708 N68-21683 Techniques for con-resses in welded alum varpage and residual y structures for Seture

NASA-CR-61235] 18 p3087 N68-29852 Weld heat affected a properties of two carbon [COA-MAT-3] structure and mechanical n-Cr-Mo-V stock 18 p3094 N68-30576

Metallurgical ar on weld heat affect [COA-MAT-2] 20 n3496 N68-12569 VELDEN RC WELDING

ARC WELDING
BRAZING
DIFFUSION WELDING
ELECTRIC WELDING
ELECTRON BEAM WELDING
FLASH WELDING
GAS TUNISTEN ARC WELDING
PLASMA ARC WELDING
WELSMA ARC WELDING
ULTRASONIC WELDING
ULTRASONIC WELDING VIEW ALCOHOLD IN

olding of very thick see of plates by molten flux EURAEC-16091 01 p0067 N68-10044 applicable to Saturn 5 Welding of aluminum structural component fail [NASA-TM-X-60591] alloys applicable to Saturn 5 trication 01 p0069 N68-10344

Methods for welding and locally reaging aged 18 per-cent nickel grade VAR maraging steel (NASA-CR-72333) 01 p0070 N68-10815 Explosive welding using PETN for welding aluminum Explosive welding us absets [NASA-CR-90209]

02 p0214 N68-11029 morehly welding, plantic co-ing sections 02 p0217 N68-11447 Brief survey on aircraft menting, and hermetic ser [FTD-HT-44-799]

ing of heavy gage steek for rea for ventil countries (EURAEC-1813) 03 p0347 N68-12440 including heavy water-gas re (WAPD-TRANS-76) 07 p1002 N64-16363 d and tempered du Fracture propertie veldment specimens (NRL-6602) OE p1106 1468-17678

lysis of resistance upon 09 p1347 N66-13777 NASA-CR-613961 or fact clean end in pile cape (ORNL-4190)

13 p2084 1668-23923

ique for ma uring of parts for 18 p3000 NAA-29970 inless steel Roll by co-

Y-1613] 18 p3081 N68-30425 Later application efinding, material al science, volding, ran had tensors, and please NOLTR-68-53)

20 p3492 N48-32374 on properties of 20 p3497 H&B-32590 ion is welding process Effects of welding

on strength of webled in 23 proce 2003-30 ing, and leading of state and for Zeno France Ph.

23 p4102 M68-3 Thermal str ---

(NASA-TM-X-61300) 24 p4261 1668-37857 Eye protective REPT. 314) 24 p4263 NGB-384N

ELDING MACHINES

Automatic butt welding a netically driven rotating a [GAW/EE/67A-2] of pipes by mores of mag 10 p1534 N68-199

ne /235 490/ 20 p3492 1966-336 Capacitive of the or machine for an IAI-AEC-MENO-127101 23 p4070 N68-37164

NASA-CRESON 24 p4260 N68-37605

7 pl340 H aid three in seal p

11 a1604 NGS-21105

24 p4232 3468-3

tagen) for comparing algorithm also by Ventral County Bell 07 p2037 1000-100

U GERMANY WET CELLS

> (BCOM-0385-1) 10.31541 U MOISTURE CONTENT

ETTABLITY

Relative house latery of 2004 als (PA-TM-1785) 130 HGG-153

SU

b

WI

WI

Environmental testing of whisker like flexible rein-forced composite fiber for spacecraft window [NASA-TM-X-60137] 16 p2690 N68-27526 in improving adhesion of protective coatings and adhe-Automatic noise whitener systems based on white noise [NOLTR-67-197] r for signal processing INRL-66211 08 pi141 N68-17782 11 p1659 N68-20657 hotoelastic models of stress transfer mechanism in ker reinforced composite aluminum matrix materi-Optimal continuous filtering analysis for Gauss white Thermochemical, compatibility, and wettability stu-dies of high temperature molybdenum-rhenium base disturbance and measure [TR-0158/3307-01/-10] 09 p1298 N68-19258 21 n3782 N68-33674 11 p1725 N68-20770 Frequency and time do periodic signals in noise [\$-68-1019] Adherence and wettability of nickel alloys to sup-phires in study of whisker composites 16 p2678 N68-27319 Factors affecting tennile strength of ductile metals reinforced with short, brittle fibers [NASA-CR-96350] 22 p3893 N68-36004 n analysis to estimate 11 p1662 N68-21523 Effect of adsorbed water on wetting properties of borosilicate glass, quartz, and sapphire [NRL-6703] [9 p3297 N68-31318 WHISKERS [SINGLE CRYSTALS] Three parameter self adaptiving discrete interval binary no ive flight control system oise perturbation 12 p1853 N68-22335 Solvant zone growth of single crystal silicon carbide [AFCRL-67-0509] 01 p0023 N68-10609 Vapor deposition of halnium carbide emphasizing possible production of high strength single crystal whiskers for composite materials (TR-0158/3250-10/-3) WETTING Added narrow band no white noises for subjec-Wetting, and drying effects on soil surface energy tive response to [INC/C4/P20] 14 p2187 N68-25435 [ECOM-2-67P-2] 04 p0498 N68-12938 Filtering and smoothing solu discrete time processes in w Wold-Kolmogoroff approach t ions for continuous and te noise derived from linear least squares ap-04 p0467 N68-13445 FTD-HT-67-85) 04 p0516 N68-13738 Transport mechanisms, su and growth of whiskers from [ERDE-17/M/66] ration, nucleat Computer program using nonlinear regression echniques and differential equations to calculate etting of 316 stainless steel by lead-biamuth eutoctic international deep tests. apor phase 04 p0472 N68-13554 SU-SEL-68-0071 16 p2617 N68-26975 Effect of high clast exial strain on resistivity and temperature of tin whiskers 10 p1576 N68-19782 ear filtering of lumped innous time and discrete alman-Bucy recursive line cess in white noise for conti drop tests (IS-1-205) 07 p1009 N68-16715 05] nion of cuprous axide to cupper 11 p1647 N68-20853 16 p2617 N68-26976 Vapor phase growth and mecha ical properties of Smoothed or noncausal process in white noise dete filtering of lumped process mation of second-order ned by results of linear (BM-RI-7118) 10 p1491 N68-20221 Wetting of ammonium perch surfaces by liquid plastic propells [ERDE-24/R/67] n perchlorate and aluminum Causes of electrical breakdown in high vacuum 23 p4145 N68-36010 16 p2617 N68-26977 18 p3156 N68-30756 On-line digital transferometer for handling white noise problems arising from use of thermal neutron de-tector in pulsed regime (CEA.R.2441) 16 p.2665 N68-28201 Temperature dependence of resistivity or sure and partially saturated magnetization states in high purity single crystal iron whiskers

23 p4147 N68-36092 Effect of ada d water on critical surface tension of wetting of metal surfaces [NRL-6727] 23 p4008 N68-36437 HEATSTONE BRIDGES Statistical decision theo mum radar receiver for a ry applied to finding op-signal detection in random setoresistance of nickel and cobalt single crystal Wind tunnel monitoring device for acting and ho ing constant test Mach numbers at transonic sper using Wheatstone bridge (RAE-TR-07135) 04 p0510 N68-136 white noise [FTD-HT-67-243] 24 p4266 N68-37445 18 p3037 N68-30440 04 p0510 N68-13652 WHISTLER RECORDERS Fokker-Planck equation for finding spectral density of first order piecewise linear systems exited by white Frequency modulated radioelectric whistlers and cir-uit with constant gain and variable passband [N-159] 01 µ0031 N68-10821 WHEEL BRAKES Sintered iron brake cylinder pistons to reduce oxida-tion and gum formation [CCL-238] 06 p0848 N68-15009 20 p3517 N68-33463 [TN-159] Statistical analysis of pulse systems with white noise input [NASA-CR-96822] frequency modulation WHISTLERS Development of studies on whistlers and atmospher-ics in Japan since 1927 BAK-12 formance test of sintered metal brakes craft arresting system 3] 11 p1631 N68-21661 21 p3662 N68-34565 02 p0205 N68-11255 Detection of rand priori probabilities [SEG-TR-67-53] mly disturbed signals of unknown easurement and interpretation of VLF and ULF ther event power spectra recorded by ground and lite receivers Effect of wheel braking on directional control of 22 p3832 N68-35016 NASA-TN-D-4602) WHITHAM RULE 14 p2186 N68-25313 Whitman equations for calculating relation between peak values of pressure and signal duration in sonic 08 p1172 N68-17977 Whistler propagation in magnetospheric ducts stu-lied based on ray tracings verified by ground and satel-ite observations NT FLYWHEELS NT REACTION WHEELS NT TURBINE WHEELS 19 p3197 N68-30873 08 p1173 N68-17981 WHITTAKER FUNCTIONS study of fracture due alloy landing wheel of Macroscopic and micros stress corrosion in magne station transmitter ob-nals in OGO satellites 09 p1336 N68-19310 Very low frequency ground reations of whistler mode sig Integral transformation with Whittaker kernel func-[TDCK-49845] 15 p2385 N68-25912 INASA-CR-922641 21 p3716 N68-34775 Theoretical and experim ropagation, wave-particle is tal studies in whiatle WICKS U ROTATION Wicks covered with fine screen for capillary action in high performance heat pipes [LA-DC-9027] 16 p2797 N68-28025 sion generation [AFOSR-68-0219] WIRL ENSTABILITY U ROTARY STABILITY 13 p2056 N68-23097 16 p2797 N68-28025 Polar orbiting satellite and histler-mode waves into ma ig wave-particle interactions other means of injecting gnetosphere and produc-WIDE ANGLE LENSES U ROTATION Wide angle photography of airglow, zodiacal light, and Milky Way galaxy during Gemini 10 flight 05 p0659 N68-14156 20 p3468 N68-32470 U SPIN TESTS Peculiarities in plasma velocity in magnetosphere [NASA-CR-96313] nsity and Alfven wave rence on bubble chamber design, and instru-in for high energy particle tracking - structura lementary particle physics, and optical equip KER COMPOSITES 20 p3558 N68-33240 ngle crystal supphires for cal properties of a Cyclotron reication of whistlers in er composites (RC-CR-66-01/5) 02 p0221 N68-11269 [D]-82-07131 [CERN-67-26, V. 1] 05 p0709 N68-14281 22 p3868 N68-35260 Design, and development of wide angle lenses for ubble chamber photographic particle tracking 05 p0699 N68-14302 dering above, britt WHITE DWARF STARS Mathematical model to e in cooling times of white dw [NASA-TM-X-60603] to estimate changes introduced te dwarfs by ion lattice 01 p0137 N68-10969 and borow car t-CR-90526 02 p0223 N68-11872 Application possibilities of super wide angle photo-aphs in photogrammetric mapping p3074 N68-30050 Chemically bonded with allicon carbide wi [NASA-CR-91470] ted for hot white dwarf Surface temperatures calcu 04 s0515 N68-13299 Design, construction, and installation of wide angle red 94 GHz gol 04 p0575 N68-13344 Design projector television projector [NAVTRADEVCEN-695-2, V. 1] 23 p4061 N68-36517 Mathematical model white dwarf stars as possi [NASA-TM-X-61028] e calculations for TR-0131/3230-13/-21 08 p1154 N68-17837 18 p3163 N68-29869 ons G226 through G235, sta, found by direct mea-Northern Hemisphere 23 p4174 N68-37391 talog of 549 stars in region ding 8 white dwarf suspect sent of proper motions in h structural materials reinforced with ignid metals developed for high tempera-11 p1793 N68-20794 e ceramic fibers, WIDEBAND U BROADBAND NT THERMAL NOISE [NASA-TM-X-52444] 13 p2005 N48-24124

Coding scheme for additive noise channels with feed-

01 p0028 N68-10237

ter simulation of tape action in presonne of

06 p0807 N68-15347

Dack [NASA-CR-90027]

White Goussian noise (NASA-CR-92576)

Fourier series digital co-cording process - signal

NASA-CR-94733)

or ductile apostes 14 p2275 Net-25651

16 p2678 N68-27319

y of nickel alloys to sup-

Direct current biased ph

reception of wideband ([NASA-TM-X-63336]

WIDTH

Electron beam and laser beam techniques for wide-band recording and readout systems

ems 20 p3482 N68-33407

03ste laser signals 23 p4146 N68-36032

ctive detectors for

IDEX

20657

s white

20770

21523

ystem

22335

ubjec-

25435

from es ap-

6975

6976

6977

8291

1440

463

565

016

173

75

24

56

81

90

12

ñ-

Reduced cluster widths for nitrogen 14 and nitrogen UINR-P4-36811 12 p1935 N68-22698 WIENER FILTERING Wiener theory of optimal linear filters applied to synthesis of nonlinear control systems with stochastic input signals 06 p0817 N68-15023 Analysis and design of infinite n memory digital filters 13 p2026 N68-23390 WIENER HOPF EQUATIONS Modified residual calculus technique for solution of infinite sets of equations arising in boundary value problems involving Wiener Hopf geometries [AFCRL-68-0079] neralized listow and complex Wiener integrals, elated integral equation 13 p2094 N68-23623 Wiener Hopf equation ns for transfer of resonance [NASA-TT-F-11840] 16 p2728 N68-28054 Mellin transforms and Wiener Hopf equations for oundary value problems for wedges and coses under [AFOSR-68-1042] 18 p3191 N6s-30856 Investigation of Wiener Hopf decompositions for 21 p3711 N68-33706 WIGHTMAN THEORY U FIELD THEORY (PHYSICS) U QUANTUM THEORY U RELATIVISTIC THEORY WIGNER COEFFICIENT Neutron spectrum effect on determination of Wigner (CEA-R-3226) 07 p1024 N68-16176 Second order difference equation used to obtain Vigner coefficients of SU/I, I/ [AD-664307] 09 p1385 N68-18273 Properties and means of computing Wigner coeffi-cient and 6J coefficients [T-R-616] 13 p2103 N68-24217 Quantum numbers and mechanics, kets in Wigner ar potentials 17 p2940 N68-29290 WINCHES Glider flight path at takeoff using tow winch [NASA-TT-F-11759] 18 p3003 N68-30398 WIND [METEOROLOGY] GEOSTROPHIC WIND NT GUSTS JET STREAMS [METEOROLOGY] NT SOUALLS High altitude gun launched rockets and projectiles for upper atmosphere research (BRL-MR-1825) 01 p0045 N68-10018 01 p0045 N68-10018 Improving ballistic wind data for artillery corrections from multiple meteorological stations and mountainous terrain effects on wind variability [ECOM-0296-1] 03 p0364 N68-12444 Forecasting extratropical onshore gales at Virginia (W-50) 03 p0365 N68-12601 usting techniques 04 p0533 N68-13296 (WBTM-TDL-13) Applications and limital weighting ions of computers in wind 04 p0302 N68-13599 Meteorological requirements for Aerobee 350 04 p0384 N68-13604 ervations at lunra from Synoptic me 1959 to 1966 (EUR-3569.1) 04 p0533 N68-13740 Radiosonde meteorological and cover Berlin, Germany for spring, 1966 06 p0870 N68-13358

AVRO 707 aircraft pilot's control movements and nuclidows accuracy analyzed for two distinct cross-

06 p0766 N68-15756

(ARC-R&M-3476)

Reduction of synoptics an ovember 1963 temporal o ynamics data on 5 to 10 rrence, including radia-Tiros 7 satellite . 07 p1021 N68-17060 [PB-175996] 09 p1370 N68-19160 Mesoscale observations wind fields in lower strate [AFCRL-67-0601] penerated waves no elevation detectors 11 p1688 N68-208 08 pl 197 N68-17766 Visibility, wind conditionatological data for Schip nidity, and other cli-ort of Amsterdam p1551 N68-19772 Tabulated data on w winds at Wallogs Island [NASA-TN-D-4570] sution of under air (REPT.-87) 13 p2101 N68-24028 ogy of Beslin strate 12 p1901 N68-22977 Tables and graphs 6 direction near Paris (REPT.-56) n in wind velocity and (OR-3) Winds and predictions of upwelling water movement of Southwest Africa 14 p2285 N68-25470 off Southwest (OARI-1-68) oscillations of wind Dispersion of h 13 p2098 N68-23435 Global observations of tropical disturbances and 16 p2700 N68-27052 REPT-1141 Statistical analysis of surface wind direction an elocity and evaluation of reliability of final reduces Computer program for improved performance of au-matic control landing in gusts (REPT.-12) 17 p2882 N68-29507 14 p2185 N68-25286 med beam data and de-g horizontal winds 20 p3520 N48-32583 Vector ca Data reduction techniq data above 30 kilometers [ECOM-5168] ue for meteorological wind tector arrangement for [NASA-TM-X-53754] 16 p2701 N68-27328 malysis of wir d data from GHOST balloon Hemisphere - tables 17 p2908 N68-28905 Upper atmospheric wind of 28X flight over Southern Her [NCAR-TN-34, V. 2] [M-542] ological charts 22 p3903 N68-35241 undary layer by rade pared with wind spec ata from GHOST balloon inphere - tables 17 p2908 N68-28906 Upper atmospheric wind 79R flight over Southern He [NCAR-TN-34, V. 10] and directi (M-7394) 22 p3873 N68-35973 ing wind velocity data de data 23 p4094 N68-36429 Upper atmospheric wind da 34J flight over Southern Hemis [NCAR-TN-34, V. 3] ta from GHOST balloon here - tables 17 p2908 N68-28907 study of effects of 150 Trajectory map, and position and wind data tables on obal horizontal sounding balloon flight over Southern Hemisphere [NCAR-TN-34, V. 9] 17 p2908 N68-28961 [NASA-CR-61242] 23 p4095 N68-36656 Statistical analysis of surface wind direction an velocity and evaluation of reliability of final reduce Automatic picture tr tracking system for acr per stanospheric wine [ECOM-5196] 24 p4283 N68-38281 [REPT.-12] 17 p2882 N68-29507 Technique developed to forecast surface wind gusts based on maximum wind velocity aloft in low levels [AD-669366] 18 p3108 N68-29638 WIND EFFECTS to wind excitation 01 p0051 N68-10547 Representation of Van der based on spectrum analysis data [ECOM-367G5-F] ching five degrees of f moket with arbitrary 18 p3067 N68-30024 [NAL-TR-131] 02 p0158 N68-11583 Daily, monthly, and yearly climatological data from 99 stations in Finland in 1937 cts on dispe 18 p3109 N68-30251 04 p0502 N68-13595 method for predicting recenting of wind set-up Procedure in Lake Erie 20 p3522 N68-32756 [TR-11] Modified Bernoulli the wind effects on sail be 21 p3678 N68-33703 04 p0437 N68-13680 Antarctic topographic effects on prevailing surface Effect of low altitude gur 08 p1113 N68-17473 [UAG-R-189] 22 p3867 N68-35110 Wind tunnel tests of rail flying at transonic meed on effects on aircraft Investigating upper tro-olyethylene transcoondes IPRS-46505) sere wind flow using 09 p1337 N68-194 22 p3870 N68-35531 Effects of impact velocity, drop size on rain erosion rate e survey to determ trajectories of s 9 p1338 N68-79408 BRL-14071 23 p4092 N68-36191 Spectral theory method for calculating two dimen-onal energy spectrum and length of wind waves. 23 p4035 N68-36415 09 p1336 N68-19422 orface wind analysis to d on balloon launching e effect of wind eddies on balloon is [NCAR-TN-33] ar wind comp 10 p1530 NAR-19500 tion of bullistic m (SC-R-67-1232) 23 p4098 N68-36595 d erosion in Mojave d ort of California 10 p1520 1968-19627 Wind velocity data from three ane re anemometers com-ample intervals 24 p4281 N68-38045 ets on stability of paper ECOM-52011 10 p1606 N68-2 in pressure and wind Geostrophic adaption of the control ng rates of Su 24 p4281 N69-38047 TR-1441-3 14 p2369 N6S-24411 WIND CIRCULATION
U ATMOSPHERIC CIRCULATION Optimum windche (ECOM-5172) on for Ass WIND DIRECTION Wind frequent al rocket ECOM-5183] Research facility and television equipment for me uring wind velocity, wind direction, and atmospher 15 p2490 NAA-26722 [DF-MS-67-68] 02 p0195 N68-11507 Vincous dampers for lations of large flexible Saturn 5 launch vehicle [NASA-TM-X-60432] Development, velocity, and di os poeks Nek-14272

a catalog, including win-re parameters, and rain

09 p1370 N68-19166

directions and sp fall data [NCAR-TN-35]

15 p2572 NSB-34812

unical analysis

SI

16 p2587 N68-27138

Wind tunnel stability tests conducted to measure dels of cargo ships 11 17 p2875 N68-29470 INPL-AERO-12331

Mesoscale surface temperature variations due to sea reeze circulation on upper Texas gulf const REPT.-6] 18 p3109 N68-30053 IREPT.-61

Aerodynamic investigation for 50-story tower blocks proposed for Ping Shek Estate, Hong Kong to withstand typhoon wind effects without damage to

[NPL-AERO-SR-002] 21 p3676 N68-34060 Stationary wind effects on propagation of sound waves and variation of sound velocity due to atmospheric temperature - ultrasonic propagation techniques for ranging in air [CP-21, PT. 2] 21 p3732 N68-34187

Influence of small horizontal inclinations of wind on forces on model of power-station boiler house in various stages of erection [NPL-AERO-SP-003] 21 p3676 N68-34200

Sea water waves and wind stress effects on surface roughness at air sea interface [TR-231-18] 22 p3904 N68-35294

Wind speed, wind direction, and stability measure-sents used in evaluating radiation hazards associated with reactor accident 24 p4284 N68-38381

flusion at coastal sites 24 p4285 N68-38390 perature information for air-

Low level wind and temp craft operations at airports 24 p4286 N68-38396

WIND MEASUREMENT

Comparison of atmospheric turbulence measurements over different terrains [BNWL-SA-1403] 02 p0232 N68-11436 02 p0232 N68-11436

Cramer theory of normal processes applied to determin velocity in given intervals of time al stationary stochastic

04 p0500 N68-13342 Reliability of AN/MMQ-1B set for measuring low level incident wind, methods for predicting low level wind at time of rocket firing, and feasibility of hand

ackup devi 04 p0502 N68-13593

Mean wind determinations from balloon tracking 04 p0503 N68-13601

Weather forecasting, atme erature, and wind measuren spheric turbulence, temts, and cloud studies 06 p0868 N68-15028

intical analysis of upper atmosphere wind circula-er North Atlantic, Europe, and Near East 06 p0869 N68-15297

Statistical evaluation of sampled wind data from anemometers mounted on met Wallops Island [NASA-TN-D-4395] orological tower on

08 pl198 N68-18246 Frequency tabulations and characteristic wind and wave observations based on data from light vessels in

(REPT.-90) 10 p1521 N68-19888

Numerical analysis to determine interference effects in local wind flow about Saturn 5 launcher umbilical 11 p1789 N68-21298 INASA-CR-611981

Ballute device for reta ng sounding rocket descent ed and temper re measurements 11 p1736 N68-21586 for accurate wind an [UDRI-TR-67-144]

Wind and temperature measurement data from meteorological sounding rockets, and radiosonde ob-servations - June 1967 11 p1736 N68-21827

n bulloon-radar tracking system for horizontal (UDRI-TR-67-149) 14 p2282 N68-24425

rature measurement data from fing rockets, and radiosonde ob-Wind and tempera

14 p2286 N68-25593

Temperature profile, wind measurement, radiative set transfer, and disense variations in Martian at-

[NASA-CR-94964] 15 p2556 N68-25807 ical halloon tracking data Real time meteorolo evaluation for wind a

(ECOM-5184) 15 p2497 N68-26580 Preliminary analyse study using CRAM on [ECOM-9296-3] is of results from bullistic winds ter program 16 #2700 N68-27092

Conference papers on aerodynamic stability of sounding rockets, wind tunnel tests, and wind measurement techniques [AD-667928] 16 p2700 N68-27126

Smoke trail rocket technique for daytime wind mea-

(PUBL.-132) 16 p2700 N68-27131 alts from radar tracker and

16 p2700 N68-27132 meteorological sounding rockets, and radiosonde ob-servations - August 1967

16 p2701 N68-27677 Capability and procedure for direct measurement of vertical air currents using FPS-16 radar/ jimsphere

system [NASA-CR-61232] 17 p2848 N68-28625 Balloon data of barotropic flow in upper atmosphere for Southern Hemisphere [NCAR-TN-34, V. 7] 17 p2908 N68-29300 17 p2908 N68-29300

Balloon data of barotropic flow in upper atmosphere for Southern Hemisphere [NCAR-TN-34, V. 3] 17 p2908 N68-29301

Balloon data of barotropic flow in upper atmosphere for Southern Hemisph [NCAR-TN-34, V. 6] 17 p2909 N68-29302

Balloon data of barotropic flow in upper atmosphere for Southern Hemisphere [NCAR-TN-34, V. 11] 17 p2909 N68-29304 Balloon data of barotropic flow in upper atmosphere for Southern Hemisph [NCAR-TN-34, V. 4]

17 p2909 N68-29305 Balloon data of barotropic flow in upper atmosphere for Southern Hemisph [NCAR-TN-34, V. 8] 17 p2909 N68-29306

Cross spectrum analysis for evaluating wind sensors

Stratospheric wind observations in tropics [ECOM-2960] 19 p3304 N68-31470

Vector calculations using crossed beam data and de-tector arrangement for measuring horizontal winds [NASA-TM-X-53754] 20 p3520 N68-32583

Radioastronomical method for solar wind measure-[NASA-CR-96274] 20 p3591 N68-33307

Meteor radar system for wind and density measure-ments in upper atmosphere 23 p4092 N68-36375

Meteorological statistics tabulated from data ob-tained at 26 weather stations in Greenland between 1961 and 1965 23 p4096 N68-36951

Wind and temperature measurement data from neteorological sounding rockets, and radiosonde ob-ervations - January 1968 23 p4096 N68-37119

Mean gradient and spectral analyses of turbulent ind measurements at Brookhaven National Laborato-24 p4287 N68-38402

WIND PRESSURE

Effects of wind field pressure gradients on breeze (FTD-MT-24-305-67) 13 p2098 N68-23358 WIND PROFILES

Relationships between wind velocity profiles and at-mospheric turbulence and stratification in lower at-mosphere

01 a0054 N68-10054 Formula for calculating coefficient of atmospheric turbulence from temperature-wind soundings (RAE-LIB-TRANS-1243)

02 p0203 N68-11057 Form profiles and horizontal cross sections of hur-ricane Ella /1962/ during developmental and mature stages from airborne observations. stages from airborne (IERTM-NHRL-77) 02 p0233 N68-11887

Vertical wind profiles at Rou estimates at earth-air interface (ECOM-65-G10, V. 5) ound Hill and heat budget 03 p0339 N68-12056

Tubulated vertical profiles of mean wind speed and in temperature and turbulence statistics of lower at-IECOM-65-G10, V. 21 03 p0339 N68-12385

Relationship between tangentia verse circulations of tropical cycl [HIG-66-22] ial wind field and trans-03 p0366 N68-12706

New low cost rocket a sititude measurements of cie profiles st rocket sonde system for routine high rements of temperature and wind verti-04 p0583 N68-13585 Wind profiles and shear derived from rocket amoke

04 p0501 N68-13591 Blue Goose wind weighting met!

04 p0503 N68-13602 Device for obtaining and displaying wind vector components for four cardinal points of direction and accumulating total wind passage data [WBTM-EDL-3] 05 p0660 N68-14188

Mean horizontal windspeed profiles within and above Japanese larch plantations [RR-395] 05 p0655 N68-14968

Upper atmosphere wind profiles over Yuma, Arizona based on data from gun-launched vertical probes [REPT.-7] 06 p0833 N68-15231 Upper atn expheric wind profiles from gun launched

06 p0838 N68-15627 Upper atmospheric wind profiles from gun launched

BRL-51 06 p0839 N68-15690 Mathematics refraction in is atical model for calculating shock wave in isobar atmosphere with vertical temperature, and wind gradie (ISL-T-14/66, PT. 2)

07 p0983 N68-16145 Mean wind gradients and spectral measurements at Brookhaven National Laboratory [BNL-11889] 07 p1019 N68-16807

Shock wave-vortex sheet interaction concept for ef-fects of winds and inhomogeneous atmosphere on sonic

[NASA-CR-92676] 07 m0936 N68-16916 Simultaneous wind profiles derived from rough surface jimspheres and smooth 100-gram spherical bal-[ECOM-5156] 09 p1367 N68-18285

Wind profiles associated with cold fronts in northern Honan analyzed with respect to orographic conditions [EMM-66-140] 09 p1367 N68-18313

Augmented Fourier polynomials for mathematical presentation of vertical profiles for horizontal wind INASA-CR-611951 09 p1332 N68-18486

Geological structure of ocean flo dies, sea water circulation, and of I structure of ocean floor, wind profile stu-ter circulation, and other oceanographic research in U.S.S.R.

09 p1335 N68-19170 related phenomena with dust, winds, and elevation dif-ferences as principal ingredients

[SAO-SR-255]

00 p.1424

09 p1425 N68-19286 Wind speed, temperature, and humidity profiles over dian Ocean

Indian Ocean [PB-176287] 10 p1519 N68-19517 Surface wind observations and analysis over ocean

10 p1551 N68-19679 Upwelling in bounded oceanic basins similar to steady wind-driven currents [RM-5594-NSF] 10 p1522 N68-19988

Parachule drogue trajectories, mean velocities, identifying data tables, wind observations, and computer programs used in processing data on subsurface ocean currents off Oregon

10 p1522 N68-20019

Scalar and component wind correlations between al-titude levels for statistical analysis of wind profiles at Cape Kennedy, Florida, and Santa Monica, California [NASA-TN-D-3815] 10 p1524 N68-20278 Meteorological model for forecasting wind profiles in troposphere and lower stratosphere

11 p1734 N68-20891 Literature survey of Soviet bloc research in

11 p1734 N68-21278 Vertical temperature and wind profile effects on at-ospheric diffusion of radioactive contaminants

re contaminants 11 p1736 N68-21530 Soviet-bloc research on wer meteorological rockets and balloons, a profiles, and other climatological data

12 p1900 N68-22481

Gun-launched projectiles and rockets for upper at-mosphere probes [SRI-R-24] 13 p2047 N68-23413

Turbulent exchange, wind profiles, and air tempera-ture recorded by drift stations in Indian Ocean 14 p2248 N68-24959

Movement and intensity predictions from wind and essure fields for tropical storms in Indian Ocean DS-4] 15 p2497 N68-26468 EDS-41 Computer analysis on wind frequency response data

of sounding rockets [ECOM-5] 771 15 p2497 N68-26576

INDEX ket smoke N68-13591

168-13602 nd vector

68-14188 ithin and 68.14948

, Arizona hes 68-15231 launched 58-15627 8-15690

ck wave tempera-8-16145 8-16807 t for ef-

3-16916 igh sur--18285 orthern -18313 matical al wind 18486

ile stu-raphic 19170 19286 sover

19517 осеав 9679 ar to 9988 ities, com-rface

0019 n al-es at 1278 files 1891

in 278 at-530 181

at-

113 fa-59 68 ta

Smooth, superpressure, spherical balloon for mea-suring vertical wind profiles 17 p2876 N68-28433

Wind shear, velocity, and diurnal oscillations using perturbed equations for geostrophic wind above oscil-lating low level jet 18 p3065 N68-29621

Boundary modification effects in problems of small area meteorology
[ECOM-66-G24-A] 21 p3717 N68-34290 Analysis of diabatic wind and temperature profiles 21 p3717 N68-34291

Interrelated changes of wind profile structure and Richardson Number in air flow from land to inland lakes 21 p3717 N68-34292

Tower induced errors in wind profile measurements 21 p3718 N68-34294

Wind and gust criteria for Martian atmosphere in relation to spacecraft design and mission planning [NASA-TM-X-61228] 21 p3774 N68-34798

Design and flight test data on Super Loki Dart sound-ing rocket system for obtaining high abitude wind profiles with low cost rocket vehicle and radar-reflecprofiles with low con tive chaff payload [NASA-CR-61238] 22 p3806 N68-35655

Upper atmosphere wind profiles from gun launched ertical probes - 15-16 Feb. 1967 REPT.-91 23 p4092 N68-36151

Upper atmosphere wind profiles from gun launched vertical probes - 19-20 Sep. 1966 [REPT.-8] 23 p4092 N68-36153

Atmospheric model for calculation of vertical wind rofile in boundary layer profile in boundary layer [FTD-HT-23-804-67] 24 p4253 N68-38260

Summary of climatological measurements applicab to radon, wind profile, plume rise, and smoke diffusion

24 p4287 N68-38401 Theory for effects of stability on wind profile under conditions of inhomogeneous terrain roughness

24 p4288 N68-38410

Modification of wind profile due to changes in sur-24 p4288 N68-38411

WIND SHEAR

Analysis of low level wind and temperature data from Round Hill, South Dartmouth, Massachusetts [RCS-OSD-1366] 01 p0087 N68-10245 Wind profiles and shear derived from rocket smoke

04 p0501 N68-13591

Nondimensional wind shear over heterogeneous ter-rain and problems of statistical determination 04 p0502 N68-13594

Analog computed time histories and altitude-ground ack plots of swept wing transport aircraft longitudinal sponse to wind shear and sustained gusts during landing approaches [NASA-TN-D-4477] 09 p1267 N68-19180

Froude number scaling and correlation of wind resses at air-water interface and at all fetches [R-231-23] 24 p4253 N68-38245 stresses at air-[TR-231-23]

WIND TUNNEL APPARATUS

V/STOL wind tunnel testing - design of wind tunnel 04 p0442 N68-13247

Wind tunnel monitoring device for setting and holding constant test Mach numbers at transonic speeduring Weststone bridge [RAE-TR-67155] 04 p0510 N68-13652 04 p0510 N68-13652

Wind tunnel apparatus for tests on helicopter rotors and propellers 04 n0491 N68-13828

Aircraft model construction, and test facilities and techniques for measuring flutter, vibration modes, impedance, and aeroelasticity 05 p0748 N68-14561

d apparatus used in wind haracteristics 05 p0603 N68-14566 Measuring instruments and a tunnel tests of aerodynamic cha-

Variable parameters affecting wind tunnel selection for flutter model tests, and effects of Mack number and Reynolds number on flutter 05 p0749 N68-14569

Hypersonic wind tunnel apparatus for simulating su-ersonic combustion in scrumjet engines 07 p0981 Ne8-16384

Aircraft model design and construction for wind tun-nel tests of normal and funced landings. 07 p0936 N68-16796

Rigidly forced oscillatory dynamic stabinty more recasuring pitch and yaw damping derivatives in sind tunnels at transonic and supersonic speeds

OR p111 N68-17455

tory derivatives in high

08 p1111 N68-17457 ts of aerodynamic deriva-

Wind tunnel measurements tives using sting dynamometer ters equipped with strain gages [NASA-TT-F-11510] 09 p1266 N68-18815

testing helicopter and 12 p1813 N68-22507

Magnetic suspension and balance system for use with wind tunnels [ARL-67-0283] 13 p2068 N68-23580

Air condensation effects measured in hypersonic wind tunnel (ARC-R&M-35111 14 p2235 N68-24896

Design and aerodynamic bala unnels, and dynamometer in alance calibration of wind in system for analysis and [ONERA-NT-122] 17 p2868 N68-28992

Aerodynamic dynar calibration procedures [NASA-TT-F-11472] and balance design and 19 p3281 N68-32016

Use of solid state or sem create accuracy, range, an balances and pressure tran balances and press (BRU MR-1928) 22 p3876 N68-35247

Background noise reduction in subsonic wind tun-nels used for acoustic measurements on bodies in flow [DLR-FB-68-43] 22 p3801 N68-35997

Design and construction of Mach 3 blowdown win annel for supersonic mixing studies, and wind tunn [AASU-282] 23 p4039 N68-36258

WIND TUNNEL BALANCES
U WEIGHT INDICATORS

WIND TUNNEL CALIBRATION

Lift, drag, and pitch me calibration model in supersonic [DLR-FB-67-46] wind tunnel 04 p0490 N68-13456

Flow calibration m personic wind tunnel [DLR-FB-67-45] as in test section of us-04 p0491 N68-13457

Development and calibratis nels in Great Britain [NPL-AERO-NOTE-1058] m of low speed wind tun-

06 p0822 N68-15730 Design and calibration of McGill 30-inch diameter blower cascade wind tunnel [TN-68-1] 11 p1679 N68-20894

Wind tunnel measurements of maximum lift for rectangular wing with combined blowing at wing some and trailing-edge flap [RAE-LIB-TRANS-1270]

15 p2379 N68-25741

Wind tunnel calibration of conical pressure probe over range of Mach numbers to determine flow field data for X-13 airplane [NASA-TN-D-4678] 17 p2872 N68-28801

Wind tunnel calibratic cone for determination of 30 deg included angle of local values of Mach number, total pressur [NASA-TN-D-4679] 18 p3074 N68-30127

parameters of Mach 2 ic heated wind tunnel 20 p3457 N68-33190 Description and operating nozzle system for 11-inch cer [NASA-TN-D-4750]

Subsonic wind tunnel calibration of Arcasonde 1-A atmospheric temperature sensing unit at simulated al-titudes between 35 and 56 km [NASA-CR-66538] 22 p3879 N68-35757 WIND TUNNEL DRIVES

Analog to digital converters for on-line correction of wind tunnel force and moment data
[ARC-CP-946] 03 p0327 N68-12557 03 p0327 N68-12557

Design and calibration blower cascade wind tunn [TN-68-1] n of McGill 30-inch diameter 11 p1679 N68-20894

Determining orifice dimension in perforated plate for driver-reservoir technique in shock tunnel [NPL-AERO-1255] 18 p3035 N68-30019

WIND TUNNEL MODELS

Air flow calibration over moving belt ground plane installed in wind tunnel and data for two blowing-flap models tested over moving belt [NASA-TN-D-4228] 01 p0001 N68-10060 01 p0001 N68-10060 of hypersonic reentry lift

01 p0138 N68-10220

Ground proximity eff and control aerodynami four propeller V/STOL w [NASA-TN-D-4237] ty effects on longitudinal, lateral reamic characteristics of tilt wing 02 p0159 N68-11519

Simulated wind-tu-mented flap [NASA-TN-D-4278] m with jet-mag

02 p0160 N68-11627 tics predicted for Aircraft sonic boom near field data obtained [NASA-TM-X-1477] 02 p0160 N68-11772

Digital computer program for statistical analysis of ind tunnel test data taken on Saturn-class vehicle INASA CRAINES 03 p0295 N68-11974

models INASA-TM-X-607721 NASA-TM-X-60772) 04 p0432 N66-13016 Wind tunnel tests of ViOL models with fan lift en-

04 p0440 N68-13119

Measurements of mixed boundary layer flow effects on aerodynamic characteristics of V/STOL wind tumes model 04 p0433 N60-13151

Wind tunnel - shock tube a teraction between supersonic t [NOLTR-67-123]

04 p0436 N68-13511

Method for measu wind tunnels and pro-tered by cone-cylind-sional wind tunnel no [WRE-HSA-22] 05 p0603 N68-14085

Effect of wind tunne on power and voltage 05 p0642 N68-14366

Wind tunnel model to nused by temperature p leng connecti [NPL-AERO-1241]

06 p0844 N68-15318 Wind tunnel study of a rec scale model multist

07 p0933 N68-16299 Wind tunnel stu-aerodynamic churuc propeller VTOL scale [NASA-TN-D-4343] neral and directions of powered four-duc 07 p0936 N68-17023

Lift, drag, and pitch binations to determin [RAE-TR-66228] nts on wing body con-terference lift 01 p1105 N68-17306

Test rig for me ary derivatives in high 06 pilli N68-17457

ated as drive for

Control of Page 17549 wind tunnel model (RAE-TR-66224) Wind tunnel determina turacteristics for STOL of longitudinal force A water models with Varying wing aspect r 09 p1271 N66-18771

pile tests for drug radio 09 p1268 N68-19413

commenced on Black from wind transil 11 p1788 NSS-20965 Brast 5 models [NRC-10032]

Thin walled wind dels manufactured by mate both 11 p1705 N68-21214 [DLR-F8-47-94]

Construction, c ried teams! and flight at which for high of MWF-FB-W-47-241 11 p1709 NAB-21706 rate on afterior

Wind tunnel drug RAE-TR-64290 11 p1622 Non-21763 open and closed wind

12 p1817 1968-22308

Wind touch investor NASA-TM-X-1374] in word 12 p1972 Non-22742

SU

Effect of ambient turbulence component on wind tunnel model of aircraft carrier [NSRDC-2561] 13 p2051 N68-23275 Test apparatus and procedures for serodynamic model tests of spacecraft control system parameters [NASA-CR-947] 13 p2139 N68-23452 Calculating wind tunnel interference induced by ar-bitrary wall configurations on steady and oscillating [AEDC-TR-68-42] 13 p1988 N68-23874 Wind tunnel tests on effects of Reynolds number and negle of attack on aerodynamic characteristics and sur-ace pressure distribution on natural shape balloon IGER-13731] 13 p1993 N68-24023 Wind tunnel and free flight test preparations to determine aerodynamic characteristics of Dornier paraglider rocket prototypes BMWF-Pb-W-68-69 13 p2156 N68-24135 Environmental shock and vibration data - dynar structural analyses on cargo handling, ship loadi transportation methods, flight vehicle responses, a scale model wind tunnel acoustics [AD-667230] 14 p2360 N68-254 14 p2360 N68-25477 Buffet response measurements of seven percent aeroelastically scaled model of several Titan 3 configu-14 p2364 N68-25507 Wind tunnel model for study of supersonic laminar, o dimensional boundary layer separation 15 p2453 N68-26229 nel tests on Von Karman radi [TG-983] re data analysis from wind tun-15 p2570 N68-26284 Turbulent wake strure behind body of revolution at various angles of attack [TG-230-T546] 15 p2455 N68-26470 Hypersonic wind tunnel pitch damping of slender one to evaluate water cooled pitch damping support (NOLTR-68-4) 15 p2449 N68-26713 Effects of Reynolds number variation on flat plate models as function of angle of attack [ARL-68-0030] 16 p2583 N68-27035 Lift, drag, and pitching moments of large V/STOL ircraft models powered by lift fans determined in wind (NASA-TM-X-60415) 16 n2588 N68-27435 Aerodynamic tests of wind to micelles with different edge load [RAE-TR-67203] nnel models of engine 16 p2585 N68-27750 c aerodynamic charac-16 p2586 N68-28271 on reduced by use of er on aircraft model 17 p2981 N68-28806 Wind tunnel model and otherwise demain Hypervelocity wind to odels for comparing standard ballistic el tests on st 17 p2803 N68-28849 cy of fifty story octagonal cement matrix analysis and bonding for dated by d 17 p2982 N68-29388 cted to mean el sta 17 p2875 N68-29470 m and gradient flow on 18 p2997 N68-30081 of m le flap ejector nos-18 p3158 N68-30599 nen elimination studies and tents on V/STOL aircraft
19 p3198 N68-31127 19 p3258 N68-31592

Subscnic and transce teristics data on 60 deg h [NASA-CR-95373] [NASA-TM-X-1606] INPL-AERO-1239 wind effects on mode [NPL-AERO-1233] ESD-TR-66-64) NASA-TM-X-1639] Flow breakdo speed wind tunn (REFT.-46-1) (NASA-TR-R-284) bluff body models 19 p3259 N66-31652 Low speed wind to beet intake and other nce tests for power poorsement surcruft (ARLIAERO-209) 19 g3199 N48-31807 [04-0674-2] 19 a3196 N68-31870 Wind tunnel tests of roll Mack range from .16 to .85 (D6-3066/2TN) lity derivatives at 20 g3392 N44-32612 A-1406

Aerodynamic approximation analysis for hypersonic disturbance flow of reentry vehicle [AFFDL-TR-68-4] 20 p3392 N68-32938 Wind tunnel evaluation of speed brake effects on su-ersonic characteristics of variable sweep fighter air-[NASA-TN-D-4773] 21 n3621 N68-33669 Aerodynamic investigation for 50-story tower blocks proposed for Ping Shek Estate, Hong Kong to withstand typhoon wind effects without damage to [NPL-AERO-SR-002] 21 p3676 N68-34060 Heat transfer and transition of delta model and wedge in shock [NPL-AERO-1259] rements on swept 21 p3619 N68-34349 Flow model for three dimensional processes in turbu-lent boundary layers of ablating hypersonic Plexiglas bodies [NASA-TM-X-61188] 21 p3795 N68-34435 Aerodynamic conical configurations for wind tunnel free flight testing [BRL-1402] 21 p3677 N68-34459 Supersonic wind tunnel investigation of aerodynamic force characteristics of jet issuing transverse to wedge [NASA-CR-96722] 21 p3619 N68-34491 Topographic influences on wind near Green River [CER67-60GH-GJB-JEC54] 22 p3906 N68-35446 Aerodynamic characteristics of subsonic cargo jet transport model in slotted transonic wind tunnel [NASA-TM-X-1660] 22 p3800 N68-35617 Experimental study of turbulent boundary layer flow under influence of adverse pressure gradients typical of hypersonic inlets using two dimensional and axisym-[CAL-AF-2389-Y-3] aerodynamic characteristics inc [NASA-TN-D-4812] Wind tunnel investigation of propeller tilt-wing V/STOL mod [REPT.-892] Probability analysis RM-5506-ARPA1

22 p3864 N68-35964 Background noise reduction in subsonic wind tun-nels used for acoustic measurements on bodies in flow [DLR-FB-68-43] 22 p3801 N68-35997 Wind tunnel tests of a VTOL jet fighter to determine trodynamic characteristics including stability NASA-TN-D-4812] 23 p3983 N68-36081 Effect of model forebody shape on perforated super-sonic wind tunnel wall interference [NASA-TM-X-1656] 23 p3984 N68-36133 23 p3984 N68-36133 n of ground effect on four-23 p3989 N68-36289 ons of wind tunnel models representing tall buildings [NPL-AERO-1254] 23 p4179 N68-36299 near strength of sintered slender camphor and othalene models in supersonic wind tunnel ablation 23 p4186 N68-36394 Wind tunnel aerodynamic performance tests of delta vings with slots for windward to leeward air ejection at ARA-93, PT. 31 23 p3984 N68-36433 Windshield and nose geometry aerodynamic characteristics of ta [NASA-TM-X-1664] ry effects on supersonic tactical fighter model 23 p3991 N68-37066 Effect of hydrogen peroxide tions on jet exhaust flow characte [NASA-TM-X-1671] e generator configura-teristics 23 p4051 N68-37067 Effects of simulated jet exh erodynamic characteristics of t exhaust flow on transonics of Apollo launch escap vehicle models [NASA-TN-D-4843] 23 p4177 N68-37074 Wind tunnel tests at Mach 1.60, 2.36, and 2.96 to determine flow field properties near arrow wing body model for locating potential engine air inlets (NASA-TN-D-4809) 23 p3986 N68-37238 ristics for flutter predic-Wind tunnel model ch tion on supersonic aircraft p (AGARD-562) 24 p4193 N68-37763 c characteristics of parasolwing model at supersonic speeds [NASA-TN-D-4855] 24 p4193 N68-37854 WIND TUNNEL NOZZLES technique for nearle contour el, entry dynamics of spinning n free falling cone, and base Optical measurement tech in supersonic wind tunnel, er-vehicle, wake surveys on fre-heat trumfer telemetry 03 e0+33 N68-12314

(NASA-CR-96152)

Description and operating (nozzle system for 11-inch ceram (NASA-TN-D-4750)

ical analyses of high speed nozzle of arc heated wind

Design considerations, wind tunnel research, and flight test results on HFB-320 aircraft super-stall characteristics Wind tunnel tests, flight simulation tests, and flight tests on jet aircraft control in severe atmospheric tur-bulence 08 pl113 N68-17477 Low speed static and dynamic stability tests on scale odel of double-delta supersonic commercial air transport configuration [NASA-TN-D-4179] 08 p1118 N68-18250 Wind tunnel stability tests of twin engined turboprop aircraft with rotating cylinder flaps [NASA-TN-D-4489] U9 p1268 N68-19189 interference effects on lift, pitching moments, we resitance, and serodynamic center shift in rectangular, sweptback, and delta wing body combinations at transmit speeds (DLR-FB-67-93) 11 p1619 N68-21300 Wind tunnel stability tests of pinch of modified half ring wing body and swept wing body combinations at supersonic speeds [NASA-TM-X-1551] 12 p1809 N68-21940 Conversion from wing borne to rotor borne flight 12 p1812 N68-22495 19 p3267 N68-32092 ng parameters of Mach 2 ramic heated wind tunnel 30 p3457 N68-33190 Wind tunnel stability tests of VTOL models with lift 12 p1816 Nos-22500

24 p4248 N68-38283 WIND TUNNEL STABILITY TESTS Stability of solutions for relaxed gas flow, wind tun-nel studies of flow in isentropic equilibrium and stabili-ty problems, and linear and other theories for treating stability.

01 p0049 N68-10114 Wind tunnel tests of deflected alipstream cruise fan V/STOL aircraft wing [NASA-TN-D-4262] 02 n0157 N68-11034

characteristics of Apollo canard surfaces deployed 02 p0158 N68-11640 Aerodynamic stability cha launch escape vehicle with cana [NASA-TN-D-4280] Wind tunnel testing of velocity, surface pressure, forces, lift, and drag on six annular airfoils [ARC-R&M-3492] 03 p0296 N68-12357

Data reduction techniques for determining aerodynamic stability derivatives from free flight or wind tunnel nonlinear motion data [SC-RR-66-553] 03 p0296 N68-12393

Flight and wind tunnel tests compared to visualize wing flow patterns for Fairey Delta 2 aircraft between Mach numbers 0.4 and 1.3 [ARC-R&M-3482] 03 p0302 N68-12458

Inlet measurements by intake systems on vertical akeoff aircraft models 04 p0442 N68-13244

Wind tunnel stability tests for jet influence on V/STOL aircraft at high speeds 04 p0442 N68-13245 V/STOL wind tunnel testing - design of wind tunnel

04 p0442 N68-13247

Low speed wind tunnel tests to determine roll stabili-ty of SC-1 aircraft scale model at large sideslip [RAE-TR-67104] 04 p0443 N68-13424

feasuring instruments and nel tests of aerodynamic cha d apparatus used in wind haracteristics 05 p0603 N68-14566

05 p0749 N68-14568

Variable parameters affecting wind tunnel selection for flutter model tests, and effects of Mach number and Reynolds number on flutter 05 p0749 N68-14569

Aerodynamic characteristics of flexible wing con-cept, and results of wind tunnel testing and actual flights. 07 p0934 N68-16662

Design and performance testing of large scale mixed outpression axisymmetric inlet at transonic and super-[NASA-TM-X-1507] 07 p1074 N68-17028

Analytical measurements of spin on Delta aircraft model in horizontal wind tunnel 08 p1109 N68-17445

Aerodynamic derivatives measured by forced oscilla-ons method in wind tunnel - methods and installation

08 p1105 N68-17456

Wind tunnel tests on deep stalling in transport air-craft and variable lift aircraft 08 p1112 N68-17470

08 p1113 N68-17471

N68-38283 wind tun-and stabili-or treating

ersonic as

68-10114 cruise fan 68-11036 f Apollo ployed 68-11640 ргемиге

68-12357 8-12393 8-12458 vertical

8-13244 8-13245 d tuenel -13247 stabili

-13424 in wind -14566 oda for -14568 lection er and

14160 ectual 16662 mixed super-

7028 rcraft 7445 cilla-tions 7456 t air-

7470 7471 477

250 FOR

ave

95

Wind tunnel tests of VTOL aircraft models with fuselage mounted air intakes during hovering and transition phases 12 p1813 N68-22501

Similarity laws relating to simulation of air intakes and jets for wind tunnel testing of V/STOL aircraft 12 p1817 N68-22509

Techniques for measuring dynamic stability deriva-ives in wind tunnels, emphasizing balance system eaign, data reduction methods, and instrumentation and instrumentation 13 p2069 N68-23762 design, data reduction me [AGARDOGRAPH-121]

Dynamic stability characte limited autorotation in subson (SC-DC-67-1951) tics of flat plates with wind tunnel test 14 p2179 N68-24345 Research on aerodyr characteristics of flexible

[NASA-TM-X-59738] 14 p2186 N68-25293

15 p2380 N68-25916 [NASA-TN-D-4504] cylindrical shells with hal edge constraint, and wifield

AFOSR-68-0382 15 p2570 N68-26403 Conference papers on sounding rockets, wind tunn ment techniques [AD-667928]

16 p2700 N68-27126 Least squares differential correction method for analyzing wind tunnel test data and determining aerodynamic stability coefficients 16 p2584 N68-27129

Basic features and accuracy of dynamic stability technique used in wind tunnels to measure pitch and yaw damping characteristics of aircraft configurations [NASA-TM-X-39114] le p2584 N68-27535

Wind tunnel studies of static aerodynamic charac-teristics of multilobe gliding parachute [NASA-TN-D-4672] 17 p2801 N68-28447

Supersonic wind tunnel stability tests on ARPAT target vehicle for roll, pitch, and drag [BRL-MR-1915] [7 p2803 N68-29020

Wind tunnel stability tests conducted to measure wind effects on models of cargo ships [NPL-AERO-1233] 17 p2875 N68-29470

Wind tunnel tests of scale model of Marconi 90 ft fully steerable satellite tracker [NPL-AERO-1222] 18 p2995 N68-29925

Wind tunnel test data on static and dynamic stability of Apollo command module configuration [NASA-TN-D-4688] 19 p3194 N68-31445

Test sections for small theoretical wind tunnel boundary interference on V/STOL models [NASA-TR-R-286] 19 p3258 N68-31592

Two dimensional test summary on rotor blade ynamic stall and oscillation of helicopter airfolk 08-0678-1] 19 p3196 N68-31859

Wind tunnel tests to determine aerodynamic charac-cristics of wings with and without end plates in ground [COA-AERO-201] 20 p3391 N68-32300

Wind tunnel tests of roll rate stability derivatives at Mach range from .16 to .85 [D6-20662TN] 20 p3392 N68-32612 Free stream turbulence influence on hypersonic stag-ation zone heating

[AFFDL-TR-67-195] 20 p3609 N68-32615 Microelectronic data a nd remote control system for

esting 21 p3692 N68-34325 INASA-TM-X-612311 dy lift forces generated stationary, and oscillat-

Wind tunnel study of un by vortex shedding about la ing cylinder at high Reynold [NASA-TM-X-61214] ambers 21 p3682 N68-34326 Wall jet wind tunnel tests in two dimemional flow sed to simulate ground effect of vertical takeoff air-

[AD-673200] 22 p3806 N68-35705

Steady and fluctuating airloads on protuberance and surrounding structure of transonic propulsion wind tunnel/161/ [NASA-CR-61994] 22 p3801 N68-25786 22 p3801 N68-35786

Nose shape and fin geometry effects on static stabili-ty of sounding rocket models in supersonic wind tunnel [NASA-TM-X-1661] 23 p3985 N68-36509 Converging flow effects on longitudinal stability measurements in tandem test section of wind tunnel [NASA-CR-1198] 23 p4040 N68-36522

Wind tunnel tests to determine low speed high lift serodynamics of one-fifth scale variable sweep super-sort transport model (NASA-TND-4844) 23 p3987 N68-37365

Wind tunnel performance high tip speeds and advance [USAAVLABS-TR-68-44]

24 p4195 N68-38141 Wind tunnel tests on 7-foot diameter rotor/wing 24 p4195 N68-38313 [HTC-AD-67-3]

Wind tunnel tests on rotor blade performance and structural load effects under extreme operations [USAAVLABS-TR-68-3] 24 p4195 N68-38340 WIND TUNNEL WALLS

Self adjusting feedback loop for mechanical systems to influence flow in transition [D1-82-0632] 02 p0197 N68-11149 .02 p0197 N68-11149

Partial differential equation of perturbation velocity solved for unsteady flow downstream of oscillating wind tunnel walls [D1-82-0703] 11 p1682 N68-20758 11 p1682 N68-20758

Wall interference effects on dynamic measurements of half-models in ventilated wind tunnels [NPL-AERO-1243] 12 p1809 N68-21903

Approximation method for calculating spanwise dis-ibution of wind tunnel boundary interference on wing it is rectangular perforated wall NASA-TR-R-285 14 p2179 N68-24617

of flow with swept compressor ic flow in wind tunnel 16 p2583 N68-27975

Gas density gradient effects on adiabatic wall film cooling in two dimensional wind tunnel flow [ARC-29928] 18 p3064 N68-30609 ents in wind tunnels for Temperature rise m

[DLR-FB-68-30] 21 p3794 N68-34090 dy shape on perforated super-Effect of model forebody sonic wind tunnel wall inter [NASA-TM-X-1656]

23 p3984 N68-36133 Cone-cylinder models tested in supersonic wind tun-nel to evaluate effect of wall reflected disturbances on model pressure distributions [NASA-TM-X-1655] 23 p3984 N68-36134

ISA-TH-X-1633] 23 p3999 NOT TUNNELS BLOWDOWN WIND TUNNELS COMBUSTION WIND TUNNELS HOTSHOT WIND TUNNELS HOTSHOT WIND TUNNELS LOW SPEED WIND TUNNELS LOW SPEED WIND TUNNELS SHOCK TUNNELS SHOCK TUNNELS SHOCK TUNNELS SHOCK TUNNELS SHOTTER WIND TUNNELS SHOCK TUNNELS SHOTTER WIND TUNNELS SHOCK TUNNELS SHOTTER WIND TUNNELS

PLASMA JET WIND TUNNELS SHOCK TUNNELS SLOTTED WIND TUNNELS SUBSONIC WIND TUNNELS TRANSONIC WIND TUNNELS

Wind tunnel study of scale model automobile ground lane boundary layer using moving-belt ground plane nASA-TN-D-4229) 01 p0001 N68-100

n of dease neutral gas used to ind tunnel 02 p0194 N68-11199 Mechanical acceleratio supply nonconventional w (PIBAL-1026)

Air velocity profile above progressive waves in-stigated in wind and wave facility with compliant on upgating wave influence on mean velocity profiles [16-22] (4 pd493 Nd8-13049 Comparison of wind tunnel data with transmic speeds torque of Fairey Delta 2 aircraft [ARC-R&M-3485] 04 p0445 N88-13675

of techniques for reducing mice inlet at Mach 2.49 06 p1106 N68-18189

and velocity measurement or simulated by wind tunnels 18241 09 p1325 N68-18444 Flow visualization and mountain loc waves simula [CER67-68JTL-GUB24] Structural design of wi

Reynolds numbers (AEDC-TR-67-210) 10 p1512 N68-20133 eure fluctuations in Role of diffuser in sp vind tunnels NPL-AERO-1237) 10 p1518 N68-20398

icts für highly deflected wakes 14 p2182 N86-29433 Wind tunnel well offer (NASA-TM-X-59742) nt effects on helicopter rotor Wind tunnel constra NPL-AERO-NOTE-1054)

17 p2805 N68-29465 grid design method Wind tunnel velocity prof [NPL-AERO-NOTE-1935]

17 p2875 N68-29466 Multiple and rapid pressure made using electronically controlled passenger (NASA-TT-F-11908) 19 p3260 N68-31913 Experiment facilities of aerodynamic division of Na-onal Physical Laboratory at Teddington, Great

[NPL-AERO-1256] 21 p3676 N68-34233 Capabilities of wind to servatory in USSR [N6-7409] ain prophysical ob-

22 p3853 N68-35312 Design, development, ir wind tunnel for stud ting of open circuit hot apprention of hydrocar [DLR-MITT,-48-14] 22 p3853 N68-35586

Paised MHD accelera |TR-0159/3240-10/-101 23 p4040 N68-36405

WIND VARIATIONS

Wind variability in tie dicting impact point of ur ne and space and role in pre-proided sucket or diffusivity of

04 p0501 NAS-13590 Effects of wind field pr

(FTD-MT-24-305-67) 13 p2098 N68-23358 phonic ballis Time and space va

[REPT.-7486-278] 15 p2497 1968-26636 Wind shear, velocity, perturbed equations for lating low level jet urnal cocillations using schic wind above cocil-

18 p3065 1968-2962)

0,000 R 20 p3473 N68-33416 s ce prevalles m

UAG-R-189] 22 p3067 N68-35110 scing wind velocity data note data 23 p4094 N68-36429 I study of effects of 150 state on wind measure-

[NASA-CR-61242] 23 p4095 N68-36636 THE VELOCITY

OI p0054 1608-16052

REPT -24461 04 p0532 N68-12816

IT SOIL

tion obtained by mail on pilot bellow 04 pilot 1800-15714 and velocity offices on Comparison of wind NASA-TM-X-53663)

00 p1326 N62-106

09 pl368 N68-1877 THE RESERVE

YASA-TH-D-4429 00 pl300 ING-19

12 place 146-2

VASA-TIN D-41 14 a2223 No

17 pages Man-265

A-1497

St

Tower induced errors in wind profile measurements 21 p3718 N68-34294 Relationship between certain parameters of tropo-here and ionosphere, and variations of solar wind socities Difference method for reducing wind velocity data obtained by balloon to rawinsonde data [NASA-CR-95698] 17 p2880 N68-29268 Technique developed to forecast surface wind gusta based on maximum wind velocity aloft in low levels [AD-669366] 18 p3108 N68-29638 23 p4094 N68-36429 Analytical and experimental stu-meteorological tower structure ental study of effects of 150 structure on wind measurens in wind speed, gust distion in Finland 19 p3304 N68-31493 23 p4095 N68-36656 INASA-CR-612421 Wind velocity measurement applitude and duration ar of low level wind gust statistical gust shape Mesoscale cloud motions over Pacific Ocean com-puted from ATS 1 satellite and terrestrial photographs [SMRP-RP-71] 20 p3524 N68-33032 Characteristics [NASA-TM-X-53771] 24 p4280 N68-37946 Accuracy of wind data obtained by tracking wind sensors simultaneously with two FPS-16 radars [NASA-TM-X-53752] 24 p4252 N68-38053 Correlation function calculations for wind field at 500 mb [M-7373] 20 p3525 N68-33520 d correlation of wind Antarctic topographic effects on prevailing surface Froude number scalin reases at air-water interf winds [UAG-R-189] 1 at all fetches 24 p4253 N68-38245 22 p3867 N68-35110 Vector analysis of wind direction and velocity data from weather stations for meteorological charts [M-542] 22 p3903 N68-35241 and stability measure-24 p4284 N68-38381 Richards et diffusion and intensity Comparison of turbulent wind spectra from measure-ents at Hunford, Washington and Liberal, Kanasa 24 p4287 N68-38404 to make diffusion calculations [DPG-T68-106] 22 p3869 N68-35354 Wind-wave tunnel experiments to determine ratio of wave-supported thear stress to total shear stress on water surface TB. 372 INDING NT FILAMENT WINDING TR-37] NT HELICAL WINDINGS NT WIRE WINDING 22 p3870 N68-35561 ent of wind in bou ment of wino in from clear air compared with wino in obtained by radio-pilot observations 22 p3873 N68-35973 tallation of Tokamak TM-3, and winding of its etic field and toroidal discharge chamber ll p1764 N68-21525 [FTD-MT-24-88-67] Statistical analysis of surface wind velocity, cloud cover, and visibility at White Sands Missile Range from 1951-1967 Length of winding on torus in two i [NASA-TM-X-1674] 23 | two ideal models 23 p3995 N68-37217 U AUTOROTATION 23 p4092 N68-36188 [ECOM-52021 Forecasting procedure for heavy summer squalls and on wind velocity and cloud measurements
23 p4094 N68-36427 WINDOW ATMOSPHERE SOUNDING PROJECTILE
U WASP SOUNDING ROCKET WINDOWS Wind velocity data from three anemometers com-pared for varying lag times and sample intervals [ECOM-5201] 24 p4281 N68-38045 Techniques for evaluating thermal behavior of win-dow systems for space vehicles exposed to environmen-tal conditions attendant to planetary reservi-(NASA-CR-92079) 12 p1977 N68-22340 WIND VELOCITY MEASUREMENT lary reentry 12 p1977 N68-22340 Theory for Doppler radar determination of wind and precipitation velocities [NSSL-35] 01 p0086 N68-10034 WINDOWS [APERTURES]
NT WAVEGUIDE WINDOWS 01 p0086 N68-10034 Design and testing of ruggedized, thin window pro-ortional counter tube for detecting X rays in light ele-Research facility and television equipment for mea-tring wind velocity, wind direction, and atmospheric [NASA-CR-90428] 02 p0212 N68-11367 [DP-MS-67-68] 02 p0195 N68-11507 sel, and windows for Optical properties of beaded ydrogen bubble chamber photo tography 05 p0699 N68-14303 Data tabulations for wind speed, air temperature, and soil temperature (ECOM-65-G10, V. 3) 03 p0362 N68-12020 Temperature and radiation fraction and extinction coef m effects on index of ficients of Apollo window Comparison of wind velocities obtained by mast-mounted anemometer and 10-gram pilot balloon [NASA-TM-X-53663] 06 p0839 N68-15714 [NASA-CR-1019] 10 p1600 N68-20467 High speed, co-cup-rotors for wind [WBTM-EDL-2] et steel ape Window designs for m mercury boiler outlet tube [NASA-TM-X-1578] nsing tube and 07 p0999 N68-16888 12 p1856 N68-22737 tes measured by smoke trail ad, Va., in 1963 and 1964 07 p1020 N68-17024 w material and ablative method at Wallops into [NASA-TN-D-4365] vironments 12 p1896 N68-22892 Analytical method for dete seed navigation instrume Surface roughness length analysis of 150 met-eteorological tower at Cape Kennedy launch con mination of window in-st errors in Gemini [NASA-TM-X-61075] NASA-TM-X-53690] 09 p1368 N68-18784 13 p2103 N68-23318 mparative analysis of methods of predicting un-id rocket response to random stationary wied Window seals for [REPT.-67-C-165] 14 p2263 N68-24502 smental ter vhisker like flexible rein-12 p1902 N68-22216 craft window 16 p2690 N68-27526 forced composite fiber INASA-TM-X-601371 measurement data from ckets and radiosonde obserwindow material for 17 p2909 N68-29398 16 p2784 N68-27921 Statistical analysis of surface wind direction and elocity and evaluation of reliability of final reduced Effects of edge con Gentini spacecraft wind [NASA-TN-D-4845] on optical qualities of 23 p4108 N68-36470 (REPT-12) 17 p2882 N68-29507 er in wind gage for ne force winds 18 p3071 N68-29715 Window degradation in high power argon laser op-Venturi tube and mar velocity measurement of hi [NCEL-TR-579] [NASA-CR-86111] 24 p4264 N68-37855 Argon laser optimal or power levels [NASA-CR-86110] ent degradation at high of discontinuities in action of solar magnetic Explorer 34 measurement locity of solar wind and in dire 24 p4265 N68-37868 [NASA-TM-X-63287] 18 p3159 N68-29915 U LAUNCH WINDOWS Circuitry and design of con numerator for wind velocity mes ontinuous egre sonic sesurements 18 p3076 N68-30383 U GEOSTROPHIC WIND U JET STREAMS [METEOROLOGY] BN-1311]

WINDSHIELDS Vinyl interlayer strength, and bird impact resistance electrically heated aircraft windshield R-489] 04 p0439 N68-12897 Low speed bird impact tests on modified windshield [NRC-9796] Spectrophotometric analysis of visibility through tinted aircraft windshields [USAARU-68-7] 15 p2387 N68-26445 Windshield and nose geometry effects on supersonic aerodynamic characteristics of sactical fighter model [NASA-TM-X-1664] 23 p3991 N68-37066 INDWARD
U WIND [METEOROLOGY] WING CAMBER Modified approach for predicting lift body pressures and camber shape for planforms in subsonic flow [NASA-TN-D-4427] 17 p2803 N68-28868 ING FLAPS

NT TRAILING-EDGE FLAPS Wing lift increase by boundary layer control with blown flap at trailing edge [RAE-LIB-TRANS-1267] 15 p2379 N68-25778 Wind tunnel study to explore use of slot spoilers for firect control of flap induced lift and lateral aircraft 17 p2802 N68-28830 INASA-TN-D-4664] WING FLOW METHOD TESTS Skin friction meas [ARC-R&M-3501] 12 p1814 N68-22652 WING-PUSELAGE STORES Survey of literature on aerodynam with external carriage of pylon m jacent to wing-fuselage combinations [ARC-R&M-3503] 02 | 02 p0159 N68-11785 Measurements of sideforce and yawing moment on wing-fuselage stores-on 45 deg swept wing model [ARC-CP-955] 04 p0432 N68-12913 WING LOADING Analysis of oscillatory helicopter rotary wing loading in high speed forward flight 04 p0441 N68-13145 on on harmonically oscillating rigid wings in low subsonic flo [DLR-FB-67-54] 04 p0436 N68-13460 Fatigue test results and analys wings based on load spectrum co [ARC-R&M-3474] its and analysis of 42 Piston Prove ollected during service 12 p1817 N68-22873 Mean life estimates for wing strut of De Havilland ircraft determined from ground-air-ground cycle bads during agricultural operations oads during agricultura ARL/SM-NOTE-3161 17 p2808 N68-29055 Fatigue tests and analy programmed loading [S&T-MEMO-5/67] is of piston Provost wings and 18 p3179 N68-30298 Fatigue tests results and analysis of wing loading in scending and descending order for piston Provost ISAT-MEMO-1/68) 18 p3179 N68-30299 Statistical analysis of Boeing 727 flight data on stress equency distribution on lower wing surface FB-64/1966/] 19 p3199 N68-31546 frequency distri [FB-64/1966/] Comparative the culations of forces on nic speed range 21 p3618 N68-34258 oscillating wings through tr [NPL-AERO-[246] Lift, drag, and pitching moment data for wings im-ersed in propeller slipstream obtained in wind tunnel [LR-501] 22 p3801 N68-35923 WING OSCILLATIONS Pressure measurements on delta wing oscillating in heave at high angle of incidence [RAE-TR-6724] 10 p1456 N68-20076 Calculations to show effect of neglecting aerodynamic damping terms of flexure-torsion flutter of wings in incompressible flow [NPL-AERO-1236] 10 p1457 N68-20394 Unsteady wing root strain on solid Scientiar model measured to determine buffeting scale relations [ARC-CP-954] 12 p1814 N68-22655 ALGOL 60 program for Multhopps low frequency bsonic lifting surface theory subsonic lifting surface (ARC-R&M-3517) 14 p2180 N68-24760 Vibration data sum test missiles nary of Minuteman wing flight 14 p2361 N68-25483 Optical observation of separated flow around oscillating serofoll at high mean attack angles [NAL-TR-148] 17 p2804 N68-29427

e by vertical cylinder in atmospheric

21 p3717 N68-34293

U WINDSHIELDS

Functional analysis on oscillate socic velocity field excited by wir [NASA-CR-97259]

WING MANFORMS
NT ARROW WINGS
NT DELTA WINGS
NT INFINITE SPAN WINGS
NT SWEPTBACK WINGS
NT VARIABLE SWEEP WINGS

ary layer control a

(DLR-MITT.-67-18)

wing by wing slots [RAE-LIB-TRANS-1269]

Flight investigations of characteristics of XH-51 helic [NASA-TM-X-61219]

ulations for three di on of surfaces for vi s for transonic speed

[NASA-TT-F-11456]

supersonic speeds (NASA-TM-X-1551)

and wing combination [ARC-Ra:M-3528]

Review of principles

nonic flow [ONERA-P-119]

[HTC-AD-67-3]

WING PROFILES

Lifting pressure distribution on tail or wing, with trailing-edge flap control surface, oscillating in sub-sonic flow [SUDAAR-336] 18 p2993 N68-29692

Mathematical modeling of flexural-torsional wing cillations in air flow to determine critical flutter elective and frequency by analog computers 19-177191T] 19 p3195 N68-31683

Aerodynamics of wing planforms and vertical takeoff teraft - jet lift system effects, lift augmentation for ctangular wing, and design of recoverable rockets

Rheoelectrical analogy for calculating aerodynam aracteristics of aircraft in steady or unsteady supe

Wind tunnel tests on 7-foot diameter rotor/wing

Profile optimization of thin supersonic wing for minimum average heat transfer coefficient at given aerodynamic characteristics [FTD-HT-66-491] 01 p0152 N68-10732

Conference papers on aerodynamical and flight mechanical design considerations for aircraft wings and serial rudders [DLR-MITT-67-24] 11 p1620 N68-21633

Aerodynamic lifting wing configurations for trans-port aircraft of high subsonic cruising speed 11 p1621 N68-21635

Wind tunnel stability tests of pinch of modified half ring wing body and swept wing body combinations at

Singularity method for computing incompressible potential flow about thick wing and cascade profiles with tapered trailing edges (RAE-LIB-TRANS-1276)

Numerical methods for lifting surface analyses of cir-cular or elliptic wings

ing amplitude of super-ng vibrations 23 p4184 N68-37386

05 p0602 N68-13982

11 p1620 N68-21634

16 p2585 N68-27537

17 p2802 N68-28556

wing-rotor lift-sharing

21 p3626 N68-34348

24 p4195 N68-38313

trical wings with low

04 p0435 N68-13334

sional wings and deter-

07 p0934 N68-17049

rsonic flow 09 p1267 N68-19023

12 p1809 N68-21940

mibilities of half-body socic flow 13 p1987 N68-23212

13 p1990 N68-24333 18 p2999 N68-30670

19 p3196 N68-32042 ic wings for maximum lift

21 p3617 N68-33774

22 p3800 N68-35665

rations to optimize lift drug onic, and supersonic aircraft

d lift increase in flapp

-12897 sdshield

NDEX

28868 with 5778 rs for

2652 785 t on 913

ing 160 re 173 ind cle 55

in et

19 8 6

-13168 through -26445 ersonic odel -37066

ling

28

8830

Profile change effects on aerodynamic characteristics of twisted and cambered arrow wing at super

(NASA-TT-F-11802)

sonic speed (NASA-TN-D-4796) Nonetationary three dimensional airfolis in incom-essible flow, using rectangular and ewepthack half-

23 p3986 N68-37151 Wing profile lift during changes in angle of attack (FTD-HT-67-427) 24 p4196 N68-38487

WING ROOTS Linearized theory of supersonic flow for calculating pressure curve shape on wing root chord [ARC-28682] 06 p0763 N68-15192 Lift, drag, and pitching moments on wing-body com-binations to determine mutual interference lift [RAE-TR-66228] 08 p1105 N68-17306

Unsteady wing root strain on solid Scimitar model measured to determine buffeting scale relations [ARC-CP-954] 12 p1814 N68-22655

Ultrasonic tests of wing spar joint of Vis craft to observe crack development and grow [TR-6806.328-B] 22 p3884 N est and growth 22 p3884 N68-35660 WING SLOTS

Wing lift increase by boundary layer control with blown flap at trailing edge (RAE-LiB-TRANS-1267)

15 p2379 N68-25778 dary layer control and lift increase in flapped wing by wing slots [RAE-LIB-TRANS-1269]

16 p2585 N68-27537 Wind tunnel aerodynamic performance tests of delta wings with slots for windward to leeward air ejection at hypersonic speeds (ARA-93, PT. 3) 23 p3984 N68-36433

Increasing delta wing hypersonic lift drag ratio by reducing akin friction with wing slots [ARA-92, PT. 2] 23 p3985 N68-36606 WING SPAN

Spanwise loading analysis for swept wings with trailing edge flaps at subsonic speeds [ARC-R&M-3487] 03 p0297 N68-12428 Theory of finite apan wing in supersonic flow [NASA-TT-F-11461] 09 p1267 N68-19024

Wing surface pressure data from large scale wind tunnel tests of propeller driven short takeoff aircraft [NASA-TM-X-1527] 09 p1271 N66-19065 VING STALL.
U BOUNDARY LAYER SEPARATION

WING TANKS Design and volumetric analysis of pressurined tanks or use in liquid-methane fueled supersonic transport (NASA-TN-D-4295) 03 m0422 N66-12370 system for producing air-

Feasibility of thermoela cruft prototype wing tanks 16 p2590 N68-27946 WINGED BOCKET BOOSTERS U LAUNCH VEHICLES

WINGED VEHICLES Optimal psyload winged booster vehicles [NASA-TM-X-60325] 06 p0909 N68-15313 low model of wing stabilined projectiles (DLR-FB-67-92) 08 p1106 N68-17558 eward surface of high

OS p1106 N68-17880 lift drag ratio winged in (NASA-TN-D-4361) Systems and rollist recoverable sounding re (BMWF-FB-W-68-44) gincering of winged use over cities 22 p3966 N68-35707

Mission task perfetermining military oriented approach to unlities requirements of 24 p4198 N68-38280

333 ARROW WINGS CAMBERED WINGS CAMBERED WINGS
CARET WINGS
DELTA WINGS
FIXED WINGS
FILEXIBLE WINGS
INFINITE SPAN WINGS INFLATABLE GLIDERS
LIFTING ROTORS
LOW ASPECT RATIO WINGS
PARAGLIDERS
PARAWINGS
RECTANGULAR WINGS
RIOID ROTORS
RIOID WINGS
RING WINGS
ROTARY WINGS
SLENDER WINGS
SLENDER WINGS

NT ROTARY WINGS
NT SLENDER WINGS
NT SWEPT WINGS
NT SWEPTHACK WINGS
NT THIN WINGS
NT THING ROTORS
NT THE DRIVEN ROTORS
NT THE THE WINGS
NT VARIABLE SWEEP WINGS

frodynamic properties of wing strute at various raion levels and under subcavitation and cavita-07 p0966 N68-16814

or calculating spanwise dis-sundary interference on wine id wall IR in rectangular per

14 p2179 N68-24617 of flat plate wing wit surfaces in hypersoni

Lifting line theory from sions for wings in subsoni [FFA-114] 15 p2379 N68-25739

e pattern in field surround-figurations at expensationallysis methods 17 p2807 N68-28863 Calculations of affect ing arbitrary aircraft spends based on wing-bo [NASA-CR-73109] at end places in gr

COA-AERO-2011 20 p3391 N68-32300 wings constructed for 20 p3395 N68-33536

WINTER

ric oxygen and helium Winter and summer is density distribution in er (NASA-TM-X-59859) 16 p2654 N69-27570 anticylone effect on heastern Soviet Union 20 p3519 N68-32437 (M-7367)

Relation between wing Sea and seasonal d red winters over Ber-nt of Aleutian degree-M-7399) 22 p3905 N68-35426 stems, and aircraft winter

loe forms, aircraft dei landings under condition [FTD-HT-23-643-67] formation 24 p4197 N68-38272 NT ELECTRIC WIRE NT EXPLODING WIRES

Stability and resistance data for wire embeding silver filled epoxy adhesives [SC-DR-67-425] 01 p0001 N68-01 p0081 N68-10456

Magnetic, thermal, and rents in wires of type 2 sup [USC-113P-16-3] ductors 03 p0409 N68-12702 Pulse echo ultras

ystem for automatically deter-measuring round trip transit times in wire sensor [NASA-CR-72339] 07 p0997 N68-16506 al equilibrium of

adiation correction for the all wires couled with allica in DE-TM-11/M/66) of paces 08 p1255 N68-17305 lectromagnetic scattering lev distributions for lone

[TN-1967-55] 11 p1661 768-21333 ed and galvanized im-

11 p1707 N68-21588 to in use of facing wire as present blades 16 p2790 N68-28238 Stress analysis and wear vibration damper on turbo [NASA-TM-X-1603]

a on heat tre Literature survey and expe of oscillating wires 20 p3607 N68-32319

ng for produ 24 p4262 N68-38092

ical behavior of bery reposites on lead do real frame. 24 p4272 N68-38124

WIRE BRIDGE CINCUITS

NT. WHEATSTONE BRIDGES 11 pide N68-21169 NASA-TN-D-4469 c, fabrication, and tex-mer cartridge 21 p3006 Non-33249 ing of exploding brid

WIRE CLOTH High strength abrusive resistant flume resistant flum-ble impregnated nickel-chromium fabric for queer units

01 p0062 N68-10234 electrical housed wire INASA-CR-658011 Analytical investigated in (NASA-TN-D-4595) 14 p2374 N68-25312

Temper IRAE-TR-47290) 21 p3639 N68-34909

SU

wo

C

WIRE GRID LENSES Telecentric lens system combined with Moire technique for optical strain measurements 21 p3786 N68-33811 Electrostatic correction of spherical aberration of 22 p3914 N68-35084 WIRE WINDING Optimal cross section for toroidal inductor with thin [NRL-MR-1848] 11 p1631 N68-21619 WIRELESS COMMUNICATIONS Wireless communication and very high frequency 16 p2618 N68-27000 WIEING Low pressure die casting and mechanical thermal ulse bonding techniques for wire and cable termina-AD-6598921 02 p0215 N68-11091 Flat flexible cables for wiring electronic systems in-olving printed circuit boards, conventional wiring, and flexible circuity [AD-660889] 03 p0329 N68-12178 FORTRAN con sts on IBM 7090 sputer program for producing wiring (LA-3807) 11 p1668 N68-21174 Wiring, calibrating, and operating instructions on in-rumentation for measuring resistance welding current and electrode force [Y-1580] 12 p1876 N68-22673 Analytical determination of electric field between arallel wires 14 p2298 N68-24900 Punch card printer for wiring harness documentation 23 p4025 N68-36319 [NASA-CR-97150] WKB APPROXIMATION
U WENTZEL-KRAMER-BRILLOUIN METHOD woon Hydraulic cor on machine for cyclic load test-(VP-X-22) 08 p1182 N68-17688 uter program for stress stropic wood slices 08 p1251 N68-17689 analyses on isotropic, and orthor [VP-X-8] Basic eq Grain angle effect on fractional stress relaxation in [VP-X-14] 08 p1190 N68-17691 Static fatigue failure of woods under stress relaxation cycle [VP-X-24] 08 p1251 N68-17692 Electrical conductivity and resis ance of wood under ical stress cycling [VP-X-19] 08 pl191 N68-17736 Vacuum effects on oven dried balsa wood load carry-(AFIT-TR-67-4) 08 p1191 N68-17910 Smoke chamber tests of burning and smoldering woods and plast [UCRL-70794] 13 p2166 N68-23106 Annotated biblis on wood glues, glued AD-668836] 16 p2691 N68-27795 Fluorescence microscopy for locating fracture in d-adhesive joints 24 p4271 N68-37756 WOOD AIRCRAFT CONSTRUCTION
U AIRCRAFT STRUCTURES WORDS [LANGUAGE] otract family of la ing properties common to many types of formal lan gauges is introduced along with abstract families of ac-[TM-738/031/00] 01 p0034 N68-10459 Word associ on and subject indexing for informa-03 p0430 N68-12782 ng and scientific terms Test theseurus of engines constructed for Project LEX [ONR-26] 04 p0599 N68-13741 Situations in automats a c-abstract family of lang nguage theory to obtain a under length increas-114-738/037/00 05 pG632 N68-14028 07 p1103 N68-17178 of digital feedback com-rocedures 11 p1661 N68-21321

Glossary of mapping, charting, and geodetic terms [AD-666989] 12 p1869 N68-22821 Mathematical confusion-choice stimulus recognition nodel for word recognition and articulation testing Definition of word chusters for language analysis and [TR-68-68] Speech audiometry based on bandpass filtering of PHYSICAL WORK Gas expansion, work, and energy loss in cooling gas (FTD-MT-67-63) WORK CAPACITY Inflight exercise to assess witness of Gemini 7 astronauts Pupillometric experiments to measure work capacity and task complexity Visual work capacity, v ception during space flight [NASA-TT-F-1 | 404] Aircraft handling qualities and pilot stress and wor-Physiological and psychological measurements of pilot workload

08 p1126 N68-17466 Single product dynamic model that considers labor sources, work and time units, and reserves in product 12 p1899 N68-22287 Work capability of h beings at various atmoupheric pressures (NASA-TT-F-11774) 16 p2606 N68-28057 Electrophysiology of changes in work capacity of uman muscle after exposure to hypokinetic conditions 21 p3637 N68-34619 (FTD-HT-23-36-681 WORK FUNCTIONS

Work functions, thermionic and field electron emis-sions, and adsorption, desorption, and migration on metal surfaces for simple and complex electron emit-02 p0257 N68-11124 n determination of work func-

articulation testing 17 p2834 N68-29556

24 p4206 N68-37462

15 p2547 N68-26538

01 p0008 N68-10183

to total production

02 p0171 N68-11399

06 p0783 N68-15924

07 p0950 N68-16911

OR p1135 N68-17465

al activity, and color per-

ness work capacity and physical

Field electron emission of tion of tungsten /211/ plane [AD-660210] 02 p0258 N68-11256 Electronic work fun ns of tungsten, tantalum, tory metals containing dissolved amounts of harmium and [FTD-HT-66-766] Surface 02 p0259 N68-11467

on and temperature de-termetallic cathodes 03 p0406 N68-12293 pendence of semico AFCRE-67-05301 Electron emission cl cristics of low work func-

(NASA-CR-92725) 07 m1067 N68-16760 Work functions and adsorption of cesium fluoride on 07 p1067 N68-16761

Probe field emission studies of work function and energy distribution of cesium-oxygen-tungsten system 07 p1067 N68-16762

Adsorption on single crystal planes, and device to easure work functions [ARL-67-0198] 08 p1225 N68-17931 Extended area tungs inction formed by rea-tide on base metal at ele tate cathode with low work cting tungsten with strontium

emperatures 09 p1405 N68-18311

potassium, and sodium metal vapors for m of electron space charge and reduction work function in low pressure alkali-metal of collector work fu [ANL-7377] 11 p1629 N68-21211 s of zero charge and work func-12 p1915 N68-22105

Hydrogen and oxygen effects on nickel surface, ammonia catalysis on tungsten surface, and work function measurements on tungsten crystal planes [NASA-CR-94332]

talline and polycrystal-12 p1955 N68-22269 Experimental study of work function dependence of leaned Ge surfaces on Na overlayer coverage 13 p2134 N68-23588

Compositional dependence of gravitationally in-ced electrical field near metal, and work function riation to describe tangential component of field 14 p2298 N68-24789

cessum oxides as electronegative additives, single crystal tungsten converter, vapor-deposited tunsten emitter materials, and thermodynamic meaning of electronegativity and work function [NASA-CR-94764]

Equations for determini coverages from arrival rates teristics of adsorbate iom and a ng substrate surface and desorption charac-[NASA-TN-D-4369] 14 p2328 N68-25630

Methods for calculati of Doppler work functions 15 p2523 N68-26558

Work functions and electron emission measurement during surface ionization of iodine and sodium on ta-talic filament (FTD-MT-67-58) 15 p2417 N68-26579

Thermionic emission, and current-voltage data on varistor thin film diode for voltage regulators [NCEL-TR-575] 16 p2630 N68-26982

Electron mirror microscope study of work function ifferences on polycrystalline tungsten and of cesium disorption surface defects [REPT.-3183] 16 p2591 N68-27006

Fluorine and oxygen effects on work function of polycrystalline tungs [NASA-CR-85160] 16 p2743 N68-27389

Phase rate influence on work function of water and arbon compound hydrodynamic systems determined a pulsed extractor (UJV-1929) 17 p2932 N68-28939

Semiconductor work functions for infrared detector and cathodic emission, and analysis of photoelectric emission yield [AFCRL-68-0122]

18 p3046 N68-30089 Atom and ion desorption energy, chemisorption eory and surface boads, work functions and potential sergy in literature review of adsorption on metal sur-

[NASA-CR-72403] 18 p3024 N68-30191 Dependence of tungste ositive ion sheaths bet m electrode work functions on tween electrodes and cesium

NASA-TN-D-47451 18 n3145 N68-30593 Single crystal molybdenum and rhenium electrodes for low work function collectors in thermionic conver-

INASA-CR-050701 19 p3205 N68-31488 Effects of surface layer differences, metal purity, eat treatment, and adsorbed gas on accuracy of mea-rements of work functions of several industrial heat treatm 20 p3574 N68-33341

Correlation between electron work function, surface corrosion rate, and composition of nickel-copper alloys exposed to ammonia solutions

21 p3701 N68-33611

Optical detection and cathodic emission in semicon-(AFCRL-68-0302) 21 p3755 N68-34561 Schottky barrier diode

mance tests, Be doping ion into GaAs 24 p4331 N68-37772 of GaP, and S, Se, and Te diffus [NASA-CR-97357]

WORK HARDENING NT STRAIN HARDENING

Work-hardening model for effect of grain size on flow stress of niobium strained by rolling [TR-0158/3250-20/-4]

04 p0521 N68-13126 Recrystallization-free hot work-hardening method of hieving high temperature, high strength alloys and 05 p0673 N68-14102

[AERE-TRANS-1072] Stress-strain diagrams for work hardening anisotrop-06 p0920 N68-15433

Analysis of notches and cracks - correlation between artic work hardening plastic continuum theory and [NASA-CR-66570] 08 p1254 N68-18183

Work hardening of plastically nonhomogeneous [TR-549] 10 p1579 N68-20178

Tensile and hardness test Ze-Cr and Zr-Nb-Cr alloys at is, and work hardening of her quenching and temper-(BARC-306) 18 p3094 N64-30570

munication word relection proce [TR-400-169]

NDEX -23588

ally in-unction eld -24789 single tunsten of elec-

25619 nirface harac-25630 ctions

26558 ments n tan-16570 ta on 6982

7006 n of 7389 1939 ctor

089 tion stial 191 on

88 ty. 41 ce 11

1

101 des er-

18 p3021 Nee-29941

Newtron irradiation effect on plastic deformation of iron single crystals with different carbon content - work hardening data (ORNL-TR-1931) 20 p3506 N68-33444

Integral equations obtained for stress rates cor-responding to given rate of loading from elastic plastic work hardening sandwich arch [TR-20] 24 p4349 N68-37911

WORK-REST CYCLE

Literature survey on physiological effects of work at control board panels [JPRS-43700] 03 p0305 N68-12300 03 p0305 N68-12300 Biorhythmological research - tolerance levels and physiological adaptability of cosmonauts to solar time periods

08 pl132 N68-17758

Effects of work-rest cycles and sleep deprivation on crew performance during orbit [SAM-TR-67-99] 11 p1639 N68-20743

Heat pipe design analysis to determine best working fluids and capillary materials [TRW-99900-6114-R000]

04 p0593 N68-12857 Equations of nonsteady st fluids for hydrodynamic drives dy state motion of working

04 p0515 N68-13410 Electromagnetic processes in magnetohydrodynamic sduction machines with working media of liquid metal NASA-TT-F-460] 07 p1057 N68-16286

[NASA-TT-F-460] Magnetohydrodynamic induction generators with iquid metal working media, and electromagnetic field

07 p1057 N68-16287 Mars and Venus atmospheres as working fluids in gas turbines and liquid oxidizers for rocket engines 08 p1236 N68-17356

Radiator design criteria for dynamic converters in which working fluids are condensed directly in radiator tubes

08 p1120 N68-17796

Working gas selection for closed Brayton cycle tur-bocompressor for space power applications 08 p1121 N68-17802

Direct electrofluid dynamic energy conversion for space power applications

08 pl122 N68-17814 Performance characteristics of electro-ballistic generators for fluid dynamic energy into electric ener-

08 pl 123 N68-17816

Ion generation by corona discharge in electrofluid dynamic energy conversion 08 pl 123 N68-17817

Biphenyl and eutectic mixture of biphenyl and biphenyl ether working fluids for organic Rankine cycle power conversion system for operation in space

[SAN-651-43] 11 p1629 N68-21127 Comparative analysis of single-loop 100-kilowatt Brayton space power system using pure gas and gas-solid suspension as working fluids

[NASA-TN-D-4659] 16 p2595 N68-28280 as working fluids in Rankine m and potas

cycle space power place (NASA-CR-95616) 17 p2815 N68-28881 Biphenyl and eutectic mixtures as working fluids for ganic Rankine cycle power conversion system for organic Rankine space use (SAN-651-49)

17 p2842 N68-29051 Phase impedance, power factor, performance characteristics, and working fluids studied for mag-netohydrodynamic generators

18 p3142 N68-29990

WORLD U EARTH [PLANET]

WORLD DATA CENTERS World weather watch plan as gram - global observing, data po-munication systems networks in and implementation pro-ta processing, and telecom-

04 p0532 N68-13045

World Data Center A tables on gravitation, tuenami, ismology, longitude, latitude, and meteorology data 13 p2060 N68-23618 Data on airglow, suroras, cosmic radiation, geomag-netism, ionosphere, and solar activity data collected at World Data Center A between July 1, 1957, and December 31, 1967 - catalog

14 p2246 N68-24569 Catalog of rocket and satellite data from World Data Center A for period January 1966 to December 1967 15 p2564 N68-26240 World data center catalog for airglow, aurora, iono-sphere, cosmic rays, geomagnetism, and solar activity 19 p3272 N68-31649

World Data Center C tables on satellite observations and rocket launchings - Jan. 1 through Jun. 30, 1968 24 p4342 N68-38126

Ultrasonic wrench for flared to [NASA-CR-89965] ubing connections 01 p0068 N68-10329

WRINKLING U FLANGE WRINKLING WU-2 AIRCRAFT U U-2 AIRCRAFT

X

X- 15 AIRCRAFT Wind tunnel study of flow field beneath X-15 aircraft

fuselage at supersonic to hypersonic speeds [NASA-TM-X-1469] 02 p0159 N68-11147 Limit cycle and control surface resonance characteristics of X-15 stability augmentation system [NASA-TN-D-4287] 02 p0160 N68-11545

Airborne stellar photometry and spectrometric determination of day sky brightness [NASA-CR-1017] 10 p1590 N68-19590

Approximation of ramjet external pressure of nozzie extern [NASA-TM-X-1571] et exhaust plume effects on extension of X-15 aircraft 14 p2336 N68-24614 tics of data acquisition flight

Performance characteristics of test sensors used on X-15 aircraft [NASA-TN-D-4597] 14 p2259 N68-25317 Ablative thermal protection system for X-15 aircraft

operating at hypersonic speeds [NASA-CR-82003] 15 p2383 N68-25717

Flight test and performance analysis of ablative thermal protection system for X-15A-2 aircraft [NASA-CR-82004] 15 p2384 N68-25886 Operational process manual for abilative thermal pro-tection system of X-15A-2 aircraft [NASA-CR-96000] 15 p2384 N68-25889

assurement of earth in-ntervals 16 p2702 N68-28262 X-15 aircraft radi frared horizon in three spectral in [NASA-TN-D-4654] on of conical pressure probe

Wind tunnel calibration over range of Mach num data for X-15 airplane [NASA-TN-D-4678]

Analog and digital inertial flight data systems for X-15 aircraft [NASA-TN-D-4642] 17 p2860 N68-29404 Two proposed stabilization methods for X-15 horizontal surface control system [NASA-CR-93935] 19 p3204 N68-31411

Flow distribution in flight test and wind tunnel hyper-onic flow of X-15 sireraft

[NASA-TN-D-4813] 22 p3799 N68-35173 X-15 flight test data on fluidic temperature sensor for measuring total temperature of hypersonic aircraft [NASA-TM-X-61115] 23 p4066 N68-37326

X BAND
U SUPERHIGH FREQUENCIES

X RAY ARSORPTION Correction of balloon X ray astronomy data for atmospheric attenuation, escape, and energy resolution [NASA-CR-1045] 13 p2059 N68-23436

Plasma electron temperature calculated from aborption measurements of continuum X radiation from CLM-R-81] 17 p2946 N68-28386 Absorption cross sections for soft X rays in interstel-lar medium - X ray spectrum for source star, Sco.XR-1 18 p3158 N68-29385

Flux increase of heavy nuclei in composition of counic rays during solar burst periods [NASA-CR-91043] 03 p0386 N68-12065 Semiconductor X ray emission spectral analysis of yetrium solutions mounted on Mylor film strips or ion exchanged loaded papers [UCRL-17144/REV./] 03 p0409 N68-12703

Design and calibration of ultra-high pressure X ray cell to determine effects of neutron irradiation on BNWL-4381 BNWL-438] 05 p0666 N69-13970 X ray fluorescence and chemical analysis of binary Analytic data and X ray diffraction studies of scandium carbides {LA-TR-67-78} 05 p0624 N68-14478

Development, and con diffractometer [JUL-500-RX]

06 p0843 N68-15225 Pulmonary pathological response data on four sub-jects after breathing conditioned atmosphere and being CENTRINGED
[NASA-CR-92540] 06 p0775 N68-15866

FORTRAN comp X ray crystallograph INASA-CR-931611 07 p0970 N68-16709

X ray analysis and mouranium carbide-uranium dered metallic uranium as [UJV-1356] lographic examination of rmet prepared from pow-arbon block 08 p1184 N68-17265 Nondestructive as film-crystal interface [AFCRL-67-0564]

98 p1225 N68-17939 Melt ranges of spils with en in soil fusion tests [SC-CR-67-2688] 09 p1336 N68-19217

10 p1483 N68-19898 Positron annihilation is ion probes for X ray ructure in solida

10 p1583 N68-20511 FORTRAN computer program for converting X ray intensity data to stereographic contour map [ORNL-TM-2018] 11 p1668 N68-21095

Metallographic and X ray analysis of isothermal phase transformation in uranium chromium alloy (IBJ-873/XIV/PS) 12 p1888 N66-22347

Temperature and air effects or ous chloroform and chloroform a [COO-1116-6] on X radiolysis of gase-solutions 12 p1835 N68-22367

Mossbauer, X ray, and chemical str dies of cobaltous ICOO-1616-51 12 p1895 N68-22548 Kinetics and structural a rare earth metals with chelat [NYO-906-80] lyses on transition and reta-diketomes 13 p2010 N68-23285

Chemical proce INYO-2668-15] us of liquids 13 p2011 N68-23304 X ray analysis of va uminum, magnesium

deg C [AERE-R-3674] 13 p2088 N68-23577 program for X ray and Tangent formula refinement vais of noncentronymmetric cry [NRL-6697]

13 p2137 N68-23864 X say camera for Debeye on metal structures 13 p2072 N68-24315 High temperature vacor Laue diffraction analy [IBJ-869/XIV/PS]

Metallographic, X ray, solid tin solution in niobias (IBJ-877/XIV/PS) nom analyses on 13 p2086 N68-24320 n X ray holography and holo-

Summary info raphic technique RQ66EE15] 14 p2297 N68-24442 Gamma excited X ray h lead content in harium conta [CONF-651090-1] more to determine ores 14 p2218 N68-25218

X ray and optical ents for determining 14 p2318 N68-25399 [NP-TR-1624] racturing and cleavage Optical and X ray analystanes in synthetic corundu

16 p2689 N68-27378 Roentgenographic unito syrolytic curbons using texts ISGAE-M-17/1968] 16 p2692 N68-28 icromalyser applied to

[NASA-TN-D-4526] 16 p2672 N68-28249 Preparation and X my a structure of 15 radium con [NP-17364] 17 p2640 N66-28967 and studied by X ray

HMWF FBK-48-031 17 p2843 N66-28207 on and X ray analysis of plasts

SU-DMS-68-T-74 17 p2902 N68-29377 X ray analysis for crystal, molecular, and chemical conding structure of transition motal suffer and arcono complexes

10 p1485 N68-19946

11 p1711 N68-20823

11 p1713 N68-21072

11 p1697 N68-21118

11 p1697 N68-21151

11 p1719 N68-21313

11 p1657 N68-21645

13 p2080 N68-23161

16 p2676 N68-27270

X ray diffraction patterns for atomic radial distribu-tion functions and correlation of atom types in liquid and amorphous binaries

Dynamic X ray diffraction from polyethylene [ONR-TR-97] 10 p1560 N68-20268

Effects of cold work on X ray diffraction line posi-tions of rolled slabs of thorium and of thorium fillings in terms of stacking fault probabilities determined by

Fourier analysis method of X ray line broadening for examining substructure in electrodeposited and vapor deposited materials [TR-12] 11 p1712 N68-21025

X ray diffraction analysis of uniaxially deformed copper-platinum alloy and effect of long-range order on its mechanical properties

Instruction manual and computer programs for com-uter-controlled X ray diffractometer

High temperature, controlled atmosphere X ray dif-

X ray diffraction and optical techniques for deter-ning fine microstructure of boronated pyrolytic gra-

Quantitative analysis of organic compounds by X ray

Microscopic, X ray diffraction, porosity, and pore are distribution data for heat sterilizable Ni-Cd battery NASA-CR-94315] 12 p1819 N68-22235

X ray diffraction analysis of structure effects upon

High temperature X ray diffraction studies of phase structures in TiNi intermetallic compound [AD-667398] 13 p2085 N68-24149

ical properties of beta-nic

BARC-298

ORO-3091-9]

ORNI -41431

tractometer attachment [ANL-7257]

AMMRC-TR-68-02]

[AFML-TR-67-403]

[NASA-CR-94315]

Si

Fixed angle scattering method for X ray crystal struc-(REPT.-894/H/PS) 18 p3077 N68-30574 Computer indexing of X ray powder patterns with Guinier-de Wolff focusing camera, structure and crystallography of decaffuorobiphenyl and other highly stallography of decumuoso-rinated organic compounds 19 p3223 N68-31271 X ray spectral analysis of composition of trace element inclusions in tin d [NASA-TT-F-11752] 19 p3271 N68-31574 X ray orientation and birefringence measurements of near and branched polyethylene crystals PUBL.-247) 19 p3298 N68-31648 (PUBL.-247) X ray effects on phospholipide and premures [NASA-CR-96228] 20 p3404 N68-32427 X ray fluorescence analysis of mixtures of hafnium and zirconium chlorides, carbides, and oxides [TR-0158/3250-10/-12] 20 p3429 N68-33026 Proportional counter for X ray emission detection and chemical analysis of lunar surface elements [NASA-CR-96885] 22 p3958 N68-34953 rface elements 22 p3958 N68-34953 Two theta value tables from X ray analysis of gypsum DUL-530-CAL 22 p3918 N68-35636 Two thets value tables from X ray analysis of quartz 22 p3918 N68-35637 UUL-533-CAL X ray analysis of uranium alloy structure [CEA-R-3494] 23 p4078 N68-36957 X ray emmission measure tion into reinforced plastics nt of chemical penetra-23 p4084 N68-37022 High temperature attachn studies of oxide ceramics [FTD-HT-23-688-67] nents for X ray diffraction 23 p4085 N68-37188 X ray analysis of block dimensions in cast NRC-TT-1330 24 p4270 N68-38347 X RAY APPARATUS Correlation of heat of fusion and optical density in Penton with absorbed dose using proposed spectrum or XRD-6 X ray machine 02 p0224 N68-11288 Direct current inductor variation for X ray generator 05 p0698 N68-14007 High temperature vacuum X ray camera for struc-tural analysis of metah and alloys [INR-869/XIV/PS] 15 p2468 N68-26521 Design specifications for radioactive sources, X ray units, and betatrons [ISS-68/6, CH. 7] 16 p2723 N68-27699 Self focusing in high current, relativistic, electron beams extracted from electrode space of pulsed X ray 19 p3339 N68-31274 Analytical model for bremsstrahlung spectra emitted by highly filtered thick high-Z targeted X ray devices from 2 to 20 MeV 21 p3740 N68-34305 [SC-DC-67-2399] 21 p3740 N68-34305 High surface gas triode for detecting atomic or (CEA-R-3319) 23 p4064 N68-37134 X ray generator utilizing direct current inductor high mison source and Pierce type multigrid electron gun 23 p4032 N68-37253 X RAY ASTRONOMY Astronomical model of X ray sources in close binary NASA-CR-017901 05 p0737 N68-14443 Advances in X ray astronomy instrumentation (ESRO-SN-77) 06 p0911 N68-15659 Electronic, mechanical, and thermal design of X ray 07 p1084 N68-16114 [NASA-CR-92699] X ray survey of spectral emi of Cyglus and Scorpio regions [NASA-CR-80280] ion and X ray sources 07 p1075 N68-16118 Design and performance requirements for X-ray as-unomy experiment on Apollo applications program INASA-CR-658883 07 p1086 N66-16505 mar soft X radiution, and ncline mounters NASACR-93658 09 p1417 N68-19397

(SR-11 Automatic computer control of X ray and neutron Analytic data and X ray diffraction studies of scandium carbides [LA-TR-67-78] Recovery of potassium tantalate and potassium monoxide to demonstrate procedure for isolation and recovery of alkali-metal reaction products in uncon-tantalated. [NASA-TN-D-4310] MADCAP assembler for trolling X ray diffraction units [LA-3792] Small angle X ray scattering by liquid helium 3 to termine zero sound modes X ray diffraction by perfect layered crystal structures and planetary exploration (NASA-CR-93665) X ray diffraction data on carbon tetrachloride OWNL-4203 my techniques for pro-10 p1596 N68-20381 Identification and ch cal reaction products polycrystalline solids iopment of microwyre

Correction of balloon X ray astronomy data for atmospheric attenuation, escape, and energy resolution [NASA-CR-1045] 13 p2059 N68-23436 Large area modular X ray focusir [NASA-CR-83288] 21 using system 21 p3730 N68-33905 X ray astronomy rocket experiment for identification and positioning of SCO X-1 strong X ray source [NASA-CR-89759] 21 p3773 N68-34710 Refurbishment and reflight of instrumented payload on Aerobee rocket for X ray astr [NASA-CR-96716] onomy program 21 p3774 N68-34803 X ray astronomy, and atomic, molecular, and solid state physics research directed toward extending elec-tromagnetic spectrum range tromagnetic spectrum range [CU-4-68-AMC-00099-PHYS.] 22 p3937 N68-35898 Research project summaries on X ray astronomy, floon soundings, space probes, and cosmic ray 23 p4163 N68-36574 my experiment qualification Apollo X ray astro test data test program with tes [NASA-CR-92325] 23 p4066 N68-37321 Narrow band optical filters, galactic X ray source de-tectors, AM baseband telemetry, and redundancy removal for islemetry data compressions [NASA-TM-X-53760] 24 p4228 N68-38161 X RAY DENSITY MEASUREMENT Calibration and flight performance of rocket borne ir densitometer using electron beam excited bremss-alvlung X radiation 11 p1696 N68-21015 X ray scattering data analysis to determine particle diameter distribution in suspension of spherical parti-cles with uniform electron density 21 p3730 N68-33886 X RAY DIFFRACTION Metallography and X ray diffraction of plutos n temperature (EUR-3564.E) 01 p0023 N68-10687 X ray scattering by binary liquid metal system, and ght scattering from barium titanate near Curie point TR-3] 02 p0258 N68-11329 Colorimetric, titrimetric, gravimetric, and X ray dif-fraction techniques for chemical analyses of cyclorimethylene trinitramine [TIL/T-5728] Isotopic iron X ray source for portable stress diffraction analysis and photographic equipment [COO-578P28-10] 03 p0344 N68-12421 X ray diffraction analyses of bicyclic phosphate, and hydrolytic phosphate isomer structures [8-7-183] 04 p0473 N68-13733 Computer program for calculation of lattice parame-ters for cubic, tetragonal, and hexagonal crystals - mag-nesium oxide and aluminum oxide [NASA-CR-91902] O4 p0546 N68-13831 04 p0546 N68-13831 Slow neutrons and high energy protons used to study ucleus, X ray diffraction, and theory of neutron scattering from liquids (BNL-50059/T-462/) 05 p0704 N68-13971 X ray diffraction studies of liquid neopentane at 25 degrees centigrade (ORNL-4103) 05 p0617 N68-13981

05 p0660 N68-14214

05 p0624 N68-14478

05 p0679 N68-14888

09 p1311 N68-18868

09 p1383 N68-19117

09 p1384 N68-19191

ition design for lunar

09 p1427 N68-19361

10 pi481 N68-19671

ization of electrochemi-X ray diffraction of

10 p1483 N68-19811

r digital computers con-

High temperature X ray diffraction studies of stabili-ty regions of intermediate phases of praseodymium oxide-oxygen, terbium oxide-oxygen, and cerium-terbi-um oxide-oxygen systems 13 p2023 N68-24271 X ray diffraction data on water-ammonia system at 4 02 p0178 N68-11588 deg C IORNL-42211 15 p2403 N68-25658 Liquefied argon and xenon X ray diffraction study in liquid-vapor equilibrium 15 p2507 N68-25904

Single crystal X ray diffraction study of structural milarity among hafnium and various transition metals rious transition metals 16 p2676 N68-27268 Transmission electron microscopy and X ray diffrac-tion studies of phase transformations in thin films of titanium-nickel

Experimental study of titanium-cobalt compound using high temperature X ray diffractometry
16 p2677 N68-27281

Error analysis of photographic measurements in X 16 p2663 N68-27698

X ray powder diffraction for phase diagrams and ructure of intermetallic compounds in barium and rontium-magnesium systems 16 p2682 N68-27789

Diffractometry with iron-55 and beta excited X ray ICOO-1239-151 16 p2614 N68-28145

X ray microscopy, microradiography, reflection microscopy, X ray diffraction, imaging, and other techniques used in materials research and industrial ap-plications - bibliography (AERE-R-5729) 16 p2665 N68-28269

Crystal structure and lattice p inecopper halides using X ray p re parameters of hexaam-ny powder diffractometry 16 p2617 N68-28331

Crystal structure of glutare determined by single cryst techniques 17 p2836 N68-28360

Research progress on gamma rays, plutonium 238, crystal growth, neodymium promethium separation, uranium 234 recovery. X ray diffraction, fast neutron spectroscopy, and polystomic molecules. [MLM-14284] 17, 2244 N68-29171 X ray diffraction method using diffractometer to find volume percent of austenite in carbon steel [RIA-68-1105] 17 p2901 N68-29205

X ray diffraction analysis for crystal structure of vitreous polymolybdates and polywoframates [AD-669749] 18 p3026 N68-30347

X ray and gamma ray ant ng countrilogical problems

Research activities for deve electronic and circuit devices (PR-16)

11 p1753 N68-20952

distribu-in liquid 68-19946

INDEX

e 58-20268 line po 8-20823

ening for nd vapor 8-21025 eformed ge order 8-21072

or com-3-21118 ray dif--21151

deter--21313 y X ray -21645 d pore

attery 22235 s upon 23161 phase

24149 tabilimium terbi-24271 m at 4

FERSE ady in 5904 tural etals 7268 frac ns of

7270 7281 in X 698

789 ray 145

169 3

71 nd

18.

Diffuse X ray diffraction measurements on short range order in copper gold single crystals by improved monochrometer 19 p3289 N68-30927

Single crystal X ray diffraction studies on crystal ructures of dysprosium, copper, and silver com-20 p3417 N68-32396

Standard X ray diffraction powder patterns [NBS-MONOGRAPH-25, SEC. 1] 20 p3423 N68-32822

Neutron and X ray diffraction studies of lantkanum and yttrium dicarbides 20 p3425 N68-32856

Thermal, microscopic, and X ray analysis of yttrium-lead alloy system to determine phase relationships 20 p3500 N68-32867 X ray and electron diffraction analyses of oxidation RTS-4263] 20 p3428 N68-32926

Crystal structure of organ tudied with X ray diffraction ic compounds of titanium 20 p3430 N68-33073

Zirconium silicon and hafniu silicon binary systems investigated by X ray diffraction [AFML-TR-63-2, PT. 1, V. 13] 20 n3503 N68-33257

X ray diffraction studies of chrysotile asbestos [RTS-4304] 21 p3707 N68-33614 Summary information on single crystal X ray diffrac-

22 p3947 N68-34860 Soft X ray diffraction by multilayered thin film struc-tures of iron and magnesium 22 p3947 N68-34892

Tabulated X ray diffract ta on liquid benzene in equilibrium with vapor at 25 deg C [ORNL-4166] 22 p3825 N68-35415

Temperature effects on growth of titanium alu-[D6-23294] 22 p3891 N68-35429

Computer program to aid indexing of X ray powder atterns of crystal structures of unknown symmetry 22 p3828 N68-35691 X ray analysis of uranium alloy structure [CEA-R-3494] 23 p4078 N68-36957

High surface gas triode for detecting atomic or (CEA-R-3319) 23 p4064 N68-37134

High temperature attact studies of oxide ceramics [FTD-HT-23-688-67] ts for X ray diffraction 23 p4085 N68-37188

X ray measurement in copper and brasses ents of shock induced stacking faults 24 p4266 N68-37531

X ray diffraction analysis of radiation damage in ir-radiated powder samples of uranium and zirconium [KFK-745] 24 p4296 N68-37904 Structural analysis of alkali halide complexes and iron carbonyl chelates by X ray diffraction 24 p4218 N68-38140

X RAY FLUORESCENCE

X ray fluorescence analysis excited by radioactive [UCRL-TRANS-10102] 01 p0019 N68-10255 Gamma X ray fluorescence as a method of wear measurement for determining various thicknesses of wearing materia [EUR-3627.E] 01 a0070 N68-10798

X ray fluorescence and chemical analysis of binary alloys [AERE-R-5452] 05 p0622 N68-14340 Methodology for X ray fluorescence of trace ele-ments in human fluids and tissues [UCRL-70351] 06 p0776 N68-16099 6 p0776 N68-16099 Electrical vacuum discharge for X ray flash impulse

ISL-9/66] 07 p0972 N68-16148 Design, and construction of flash radiographic tube for X ray photography [ISL-4/66, PT. 2] 07 p0973 N68-16150

X ray fluorescence techniques used to determine pric oxide in lead (RFP-990)

07 p0954 N68-16311 Weather effects on optical detection of deep space nuclear bursts determined from direct and scattered light flux received at ground based detectors from at-

[C-83-58103] 07 p1083 N68-17125 Battery-operated X ray fluorescence analyzer with radioinotope sources for sample excitation and balanced filters for resolution of X rays (ORO-324-12) 08 p1178 N68-17230 Spectrofluorimetric analysis of mobility and polarity of active sites of alpha chymotrypain [NASA-CR-78109] 09 p1283 N68-18994 Sensitivity of silicon detectors to fluorescence X rays

12 p1875 N68-22644 (UCID-152771 X ray fluorescence method for determination of plu-tonium in Pu-Al alloys [BNWL-TR-24] 13 p2011 N68-23308

Semiconductor radiation detectors for X ray spectra 14 p2258 N68-25254

Comparing microbalance weight measurement, X ray fluorescence, and Rutherford dispersion, for mea-suring small thicknesses [NP-17365] 18 p3075 N68-30340

lysis of highly alloyed X ray spectrometry for a steels [MG/D-201/62] 19 p3293 N68-31576

X ray fluorescence analysis of mixtures of hafnium and zirconium chlorides, carbides, and oxides [TR-0158/3250-10/-12]

20 m3429 N68-33026 Fluorescent X ray spectrograph for analysis of ele-ents boron through fluorine 21 p3689 N68-34021

Sensitivity of photoelectric diode detector for soft fluorescent X rays [UCID-15248] 23 p4062 N68-36602

Dynamic response of X ray fluorescence isotopic spectrometer with lithium-drifted silicon detector [USNRDL-TR-68-77] 24 p4260 N68-38482 X RAY INSPECTION

Tensile strength and X ray analysis of resistance spot welded aluminum and stainless stoel alloys [NASA-CR-61596] 09 p1347 N68-18777

Programmed instruction textbook on X say genera-tion, power supplies, and facilities for radiographic equipment used in nondestructive testing (NASA-CR-61214) 17 p2892 N68-28786

Balloon-borne scini descope for measuri intillation counter and counter oring X rays and solar ultraviolet here auroral zone 04 p0503 N68-13623 radiation in strator [REPT.-10/1963]

ics after X ray or Enhanced phosph raviolet irradiatio 04 p0559 N68-13691

ic solid insulators by X nization produced in orga ray irradiation (ECOM-01999-2) 05 p0729 N68-14675

on radiation damage in tion of cell metabolism 06 p0772 N68-15290 Project status for studie uscle membranes and regu muscle mer

X ray irradiation yield and photo JPRS-45278] 12 p1929 N68-22534

obably originating dur-from solar X rays 12 p1963 N68-22957 Soft X irradiation of moor g fluorescence of lunar surf Urinary pyrimidines in rate after whole body X ray ir-

[USNRDL-TR-68-15] 13 p2002 N68-24218 Analyses of radiation damage effects in silicon tr [BMWF-FB-W-68-19] particle equivalence for 14 p2230 N68-24803

ce of X ray irradiated nte glasses 15 p2489 N68-26512

Nitrogen hydrogen radicals in irradiated currande ad X ray irradiation of alpha-ureidopropionic acid and X ray irra (TID-24147) eidopropionic acid 15 p2417 N68-26552 High vacuum tube for X ray irradiation at elevated (UCID-15254) 15 p2450 N68-26823

X ray irradiation visual cell stimulation in rabbit 16 p2600 N68-28053 ORO-3599-11 X ray and ultraviolet radiation studies of intrinsic lu incressee of alkali halides at liquid nitrogen tempera

17 p2953 N68-28427 X ray irradiation in light and darkness and produc-tion and bleaching of color centers.

17 p2956 N68-28600 Paramagnetic defects in single crystal calcite produced by gamma ray, X ray, and neutron irruffution

17 p2958 N68-28866 Solid surface study by emin of exoelectrom after X ray irradiation (UCRL-TRANS-10225) 17 p2959 N68-29118 Biological effects of X ray irradiation on Microco 19 p3212 N68-32136

19 p3213 N68-32147 Desimeter for meas garuma rays or both us NASA-TT-F-11906] naity of dose of X ray or inductor material 20 p3411 N68-32747

cal vibration and X ray narrow cells in mice 20 p3408 N68-33288

Optical studies of F color cent um fluoride [COO-1054-40] 21 n3755 N68-34560 es in silver iodide col-Electrophoretic motion loids from X ray igradiatio

22 p3822 N68-35061 CEA-R-30121

22 p3813 N68-35779

NYO-3355-317 22 p3814 N68-35860 Repeated low-dose X ray irrinination and radiation tolera ediation effects on dis-nees of albino rats 23 p3996 N68-36069

Effect of preirradiation and postirradiation erythropoletic stimulation on survival following exposure to fematopoletically lethal X ray doses [AFRRI-SR68-13] 24 p4204 Pto8-3809

RAY PHOTOGRAPHY U PHOTOGRAPHY U RADIOGRAPHY

s and effects of cold work order in nickel-10 utomic Local atomic arranger ng on degree of short-re NASA-CR-905081

02 p0223 N68-11803 Critical evaluation of light and X ray scatter, condi-tivity, and fluorescence as part of Wolf Trap extran-restrial life detector development 03 p0385 N68-12741

X ray and proton scatteri bodies of arbitrary convex g [ECOM-2873] om neutron irradiated

04 p0549 N68-13443 Argon X ray scatter [TH/68/9] 14 p2301 N68-24365

X ray diffraction data on water-ammonia system at 4 OKNL-4221) 15 p2403 N68-25658

X ray scattering fi Hartree-Fock wave fu (LA-3816) mputed from manerical 15 p2512 Non-25681

ed in study of thorium pel processes 15 p2413 N68-26176 RT/MET/68/1]

Fixed angle scatte ture analysis [REPT.-894/II/PS] d for X ray crystal struc-18 p3077 N68-30574

ges in nickel-mulybdonum resistivity, X ray diffuse

23 p4147 N68-36117

X RAY SPECTROSCOPY

X ray spectra, electer ure, and physical pro NASA-TT-F-113681 02 p0259 N68-11417 X ray differences to the composition of the composi of Al-Zn-Mg intermetallic 03 p0349 N68-11913 04 p0507 N68-130 [NBS-TN-270] Compilation of X my spectra from excitation to roution 90, yttrum 90, nickel 63, and thallium 200 TID-22361, PT. 2) at X my in of advanced X say in-management of poor 19775 2-67-27511

a tables and gre X ray wavelength qualitative electron pr (NBS-TN-40s) onelysis 07 p0057 NeB-16572

in of soft X rays using Goig

08 p.1233 Na.8-17539

Characteristics of curved crystal X ray spectrograph [EGG-1183-387] 09 p1343 N68-19071 Vacuum X ray spectroscopy and K absorption edge 09 p1344 N68-19281 X ray spectrometer and vacuum system for single crystal defects studies [NASA-CR-93768] 10 p1577 N68-19955 Low energy nuclear research program for upper at-cosphere rocket soundings [NP-17106] 12 p1856 N68-22726 Correction of balloon X ray astronomy data for attion, escape, and energy resolution 13 p2059 N68-23436 mospheric attenuat [NASA-CR-1045] Silicon /lithium/ radiation detectors and pream-plifiers for high resolution spectroscopy of conversion electross and X rays (INER_PL 3-2-2-4) electrons and X ra [JINR-P13-3718] 14 p2260 N68-25397 Thermal vacuum evaporation technique of preparing pure plutonium thin layers for soft X ray spectroscopy [UCRL-TRANS-10232] 15 p2525 N68-26829 Soft X ray spectroscopy of titanium-nickel and nickel-alloy systems 16 p2677 N68-27278 X ray absorption spectra and calculated charges of iron atoms in polyferrocenes [FTD-MT-66-112] 18 p3024 N68-30178 X ray spectrometry for analysis of highly alloyed [MG/D-201/62] 19 m3293 N68-31576 Metallurgical failure analysis of PM-3A reactor con-trol rod lifting knob, including X ray spectrochemical and gravimetric techniques to determine materials [NRL-MEMO-1788] 20 p3532 N68-33276 Coumos 766 heliographic determination of primary X ray generation in solar corona during flures 22 p3956 N68-35362 X ray spectroscopy of Crab nebula and diffuse background by sounding balloons and rockets [NASA-TM-X-63351] 22 p3956 N68-35732 Tabulated 2 theta values for X ray spectral analysis with pentaerythritol/332/as analyzer crystal [JUL-532-CA] 2 p3830 N68-35774 Dunage to surfaces of metal single crystals during ion bomburdment using X ray methods - cessum gas scattering studies [NASA-CR-97070] 22 p3951 N68-35787 al characterization of aluminum oxide layers m and oxygen X ray emission bands 23 p4009 N68-36477 Structural characteriz [TR-1] Research project summaries on analytical chemistry, X-ray and optical spectrochemistry, biochemistry, radiochemistry, and optical and electron microscopy [ORNL-4196] 23 p4011 Nel-36822 Comprehensive survey of oxygen X ray emission and shift to evaluate soft X ray spectroscopy as tool or characterizing thin layers on metals TR-2] 23 p4015 N68-37180 [TR-2] X RAY STRESS ANALYSIS Inotopic iron X ray source for portable stress diffrac-on analysis and photographic equipment COO-578P28-10] 03 p0344 N68-12421 tion analysis and photographs X RAY TELESCOPES Advances in X ray astro-(ESRO-SN-77) 06 p0911 N68-15659 Orbital workshop and X ray telescope mount for pollo applications program 08 p1236 N68-17351 Focusing X ray telescope design and analysis as large see structure experiment with man in extravelsicular 17 p2974 N68-29539 etric Bragg crystal plane 19 p3332 N68-31588 (UCRL-17901) Bromotrabling X ray measur tra for excited states of helium 4 [TUENS-2]

Focusing X ray telescope for high altitude observa-tions of counic rays in 20-140 keV energy range [NASA-CR-92951] 07 p0998 N68-16582 (NASA-CR-915611 (D1-82-97391 Large imaging X ray telescope and long wave radio stronomy interferometer system for use in orbital 21 p3790 N68-34657 X RAYS NT RADIOLOGY NT SOLAR X-RAYS Design and testing of ruggedized, this window pro-stringed counter take for detecting X rays in light ele-[NASA-CR-96428] 02 p0212 N66-11367 Changes in X ray flux free during period April-May 196 Centaurus XR-2 object 02 p0268 N68-11793 A-1414

Conditioned suppression technique for studying X systimuli in primates Origin and nature of X rays and gamma rays and their properties, radioactive materials, and absorption and acattering - programmed textbook on mondestruc-tive testing using radiography [NASA-CR-61212] 17 p2892 N68-28784 ray stimuli in prim [ARL-TR-67-20] 03 p0304 N68-11942 Application, and generation of monochromatic alpha excited X rays from isotopes [NYO-3491-2] 04 p0550 N68-13615 Diffuse X ray background of co 18 p3160 N68-30247 Early and late somatic effects exhibited by man from stermediate doses of penetrating X rays and gamma Using gamma ray excited X rays for measuring nickness of electrolytic deposits 04 p0459 N68-13790 18 p3027 N68-30392 New scintillation materials for dosimetry of X radia-Spectroscopic analysis of photoionization and electron tramitions in ionized gases as function of X ray tion and gamma radiation [REPT.-[1-42-67] 05 p0706 N68-14123 energy [EE-3428-101-68U] 18 p3138 N68-30797 X ray effects on helium-carbon dioxide mixtures [DP-447] 06 p0791 N68-15699 K absorption of X rays by copper, iron, manganese and other elements at liquid oxygen temperatures RTS-4219] 20 p3536 N68-32624 Lunik-10 observat [NASA-CR-92597] utions of lunar X rays 1 06 p0912 N68-15705 RTS-42191 A series X ray emission lines of rare earths 20 p3567 N68-32835 Ultraviolet and X ray background extraatmospheric leasurements and role in study of intergalactic gas NASA-CR-92549] 06 p0906 N68-15875 20 p3567 N68-32835 energy and photoneutron cross sections for natural copper and lead [REPT-679] measurements and role in study of in [NASA-CR-92549] 06 Encapsulation of radioactive source materials for long period space flights NASA-CR-91907] 06 p0852 N68-16023 21 p3743 N68-34490 [NASA-CR-91907] to pubs2-vos-16025 High angular resolution studies of celestial X ray sources and design of aspect camera, proportional col-limaturs, telemetry, and attitude control systems [NASA-CR-92697] 07 p1078 N68-16250 X ray photon fluctuation measurements for super-[NASA-TM-X-63331] 21 p3773 N68-34690 Efficiency estimates for conversion of focused laser radiation to X rays in hot dense plasma [TR-0158/3220-50/-4] F center formation at 78 deg K in potassium bromide uring exposure to monochromatic X ray energies during exposure to monochi around bromine K edge [PRNC-106] 22 p3943 N68-35383 07 p1071 N68-17159 Laboratory studies on sensory perception of X rays Thermal quenching of X ray luminescence in alkali halide phosphor crystals by rats [NYO-3698-1] 22 p3812 N68-35658 08 p1226 N68-17996 Spark chambers for imaging X emitters or gammarys and their medical applications [CEA-R-3320] 22 p3813 N68-3576 Magnetometer, and tape recorder system for polar comagnetic pulse registration, and correlation with 22 p3813 N68-35762 geomagnetic pulse registra bremastrahlung measuremen Muonic X rays measured in synchrocyclotron for thorium 232 and uranium 238 charge distributions 23 pBROON68-37338 09 p1334 N68-18976 Debye temperature determinused in calculating thermodynas [MLM-1396] ed from X ray data and nic properties 10 p1611 N68-19556 d helium stars and X ray sources 33641 24 0 N68-37682 INASA-TM-X-633641 X ray wavelength standards, and reevaluated X ray X-Y PLOTTERS atomic energy levels [NSRDS-NRS-14] 10 p1567 N68-19820 Numerical terrain maps, and operational features of digital graphics recorder X ray wavelength standards and reference value 05 p0654 N68-14845 10 p1567 N68-19821 Simultaneous 8-channel cathode ray tube display system featuring individually, manual, or remote con-trollable X and Y positioning for each signal [AMRL-TR-67-13] 09 p1307 N68-18386 Reevaluation of X ray atomic energy levels 10 p1567 N68-19822 Effect of whole body X irradiation on resistance of male ruts exposed to low environg [USNRDL-TR-68-6] Programmer guide to NPL graphical output system mental temperature 10 p1469 N68-20451 Neutron and X ray production in focused Z-pinch [TR-0158/3220-50/-1] 13 p2036 N68-24199 Versatile pressure recording system for direct slotting pressure measurements in low speed wind tun-11 p1760 N68-20813 X irradiation effects and radionuclide toxicity in beanels (ARL/A-285) 16 p2665 N68-28273 UCD-472-1141 11 p1638 N68-21730 Modified vibration transducer calibration system for irectly producing sensitivity versus frequency range Effect of electron hole scattering on soft X ray emis-on spectra of lithium and sodium 12 p1955 N68-22163 NASA-TN-D-47601 19 p3281 N68-31958 Bent crystal monochromator and linear least squares computer program for measuring X and gamma ray relative intensities and internal conversion coefficients [IS-1730] 12 p1938 N68-22826 Guide to NPL graphical output system of KDF 9 [NPL-CCU-2] 21 p3664 N68-34130 XANTHINES U CAFFEINE Ionization rate profiles from solar flare X rays observed by ion chambers abourd OGO 1 and OGO 3 [NASA-CR-94429] 12 p1963 N68-23026 VB-70 AIRCRAFT U B-70 AIRCRAFT Variable galactic X ray sources in hydromagnetic XC-142 AIRCRAPT (P-3798) 13 p2148 N68-24039 Mathematical model for dynamic response of XC-142A tilt wing V/STOL aircraft during low speed cargo Bibliographies on methomatic X rays and neutrons [NP-17314] es on methods of obtaining monochro-[REPT.-2-53310/6R-6098] 14 p2306 N68-24744 Sandwich sample technique for determining secondary X ray line intensities in electron probe microanal-14 p2307 N68-24822

Hypercryogenic high resolution X ray and gamma

Influence of adnorhed gases on er from exploding tungsten wires in vacu (UUIP-362) 15 p

Plumu electron temperat scription measurements of cor-

n of X ray film

Clumification of [NOLTR-68-39]

CLM-R-811

14 p2260 N68-25444

rement of proton spec-

15 p2513 N68-25856

16 p2658 N68-27002

17 g2946 N68-28386

erature calculated from ab-f continuum X radiation from

s on emission of X rays vacuum 15 p2509 N68-26435

19 p3200 N68-31862 Lateral-directional stability characteristics of four-propeller tilt-wing VTOL aircraft model for predicting performance of NC-142 aircraft model for predicting REPT.-7431 22 p.3805 N68-35301

KENON Current-voltage characteristics of xenon filled nuclear irradiated thermionic diod [NASA-TM-X-52377] 0 03 p0380 N68-12718 Collection method for krypton and xenon from reac-tor coolant gas in preparation for gamma spectrometric LPG-807/W/} 04 p0465 N68-12957

Xenon reactivity transient measurements of fission induct decay after irradiation of fissile isotopes N-1096] 05 p0706 N68-14114 IN-10961 Electrical properties of xenon filled thermionic diodes in nuclear reactor radiation field (NASA-TN-D-4368) 06 p0890 Na8-15747 INDEX 8.79784 8-30247 8-30392 ind elec-of X ray 8-30797 es 8-32624 8-32835 y beam -34490 super--34690 d inser 35383 X rays 35658 amme 35762 on for 37338 17687 res of 4845 8386 stem 4199

lirect b 8273 n for ange 958 F 9 130

XC. rgo 162 91

SUBJECT INDEX Plum Brook reactor support calculations - mathematical model for fuel utilization, power distribution in fuel loading, and approximate predictions of xenon poison transient NASA-TM-X-1496) 06 p0877 N68-16056 Relative interaction radii for quenching of triplet tate molecules of oxygen, xenon, and nitrogen oxides in naphthalene ITR-0158/3250-20/-31 09 p1386 N68-18280 Neutral pion production in interations of 9 GeV egative pions with xenon nuclei negative pions with 09 p1398 N68-19375 Xenon lasering effect on interactions between elec-tron gas and excited atoms in plasma 11 p1762 N68-21070 Thermal ionization rates of xenon and xenon-neon mixtures in shock tubes 12 p1945 N68-22075 Multiplicity, angular distribution, and momentum characteristics of positive pions produced in pionxenon interactions [JINR-P1-3640] 12 p1940 N68-22900 Stability of xenon oscillations in connection with physical calculations of active zone in heavy water gas cooled natural uranium power reactor 13 p2104 N68-23066 Angular correlation between neutral pions in nega-re pion-zenon interactions tive pion-xenon interactions [IBJ-882/VI/PH] 13 p2123 N68-24319 Liquefied argon and xenon X ray diffraction study in liquid-vapor equilibrium 15 p2507 N68-25904 Orthogonalized plane wave valence and conduction bands and effective masses of solid ze re method for relativistic 15 p2535 N68-25952 Xenon and krypton photose tion between hydrogen and des tized exchange reac-15 p2408 N68-26078 Reactor stability, xenon induced flux oscillation, core power distribution and reactor kinetics for pres-surized water reactors Dynamic programming applicat gorithm for optimal control of transients in nuclear reactor

17 p2940 N68-29314 [BNL-12390] spatial oscillations in [WCAP-3680-20] 18 p3120 N68-30774 ation for computing al-f xenon-power spatial

[KAPL-M-6725] 19 p3312 N68-31705 Diffraction method for measuring intensity curves of electrons scattered from helium, neon, argon, krypton, and senon

Magnetic shielding theory application to solid and gaseous zenon 20 p3544 N68-32896 20 p3572 N68-32966

Thermal accommodation coefficients of helic neon, argon, krypton, and xenon on potassium of lithium surfaces 20 p3539 N68-33421

Reflection of strong shocks in xenon from end wall of shock tubes 23 p4139 N68-36252

Bibliography on physical chemical, transport, and thermodynamic properties of xenon [JUL-BIBL-13] 23 p4013 N68-36963

23 p4130 N68-37103 [WAPD-TM-673] High surface gas triode for detecting atomic or [CEA-R-3319] 23 p4064 N68-37134

Single neutral pi meson production in positive pi meson interactions with aerion at 2.3 GeV [JINR-P1-3822] 23 p4134 N68-37243

Experimental data on electron-phoson showers in-duced by gamma quanta at 100, 200, 500, and 2000 MeV in fiquid zenon [JINR-P1-3919] 24 p4311 N68-37694 24 p4311 N68-37694 XENON COMPOUNDS

Use of xenon diffuoride for synthesis of labeled periodates ANL-TRANS-5381 07 p0959 N68-16926 Kinetics of formation of xeno n floorides 15 p2413 N68-26181

Raman spectra of senon diffuoride, iodine pen-tafluoride, and iridium pentafluoride [TR-2/7/] 22 p3826 N68-35491 XENON ISOTOPES

Excited levels of senon 132 [ORNL-TR-1683] OI p0103 N68-10373

tivity decrease in nuclear fuel due to Xe 135 YAW and Sm 149 (LFEN-NL34/ALPHA/) 15 p2505 N68-26835 Study of xenon isotope separation by thermal diffu-(MLM-1491) 17 p2845 N68-29409

XENON LAMPS

Optical pumping of xenon flash lamps, performance prediction for pumped continuous wave laser, and potamilum-mercury lamp for pumping neodymium yt-trum aluminum garnet laser ECOM-02097-51 05 p0671 N68-14774

Two photon photoelect iodide film using Q-awit flashlamp as light sources [REPT.-838] electric effect spectrum of cesiu-awitched ruby laser and zeno 07 p1004 N66-16459

Infrared detection for aircraft tracking under visual flight rules, and senon discharge light with diffused sil-icon detector as simple pilot warning indicator 08 p1116 N68-18233

Infrared radiation shielding for DSKT-6000 water-cooled tubular xenon lamp (RTS-4820) XENON 133

Fission gas release and description of xenon 133 from irradiated uranium oxide [CEA-R-3021] 03 p0394 N68-12612 Gas doping technique used to examine diffu haracteristics of fission rare gas xenon 133 in ces characteristics of fin iodide single crystals 19 p3348 N68-30944

XH-51 HELICOPTER

Flight investigations of wing-rotor lift-sharing characteristics of XH-51 helicopter [NASA-TM-X-61219] 21 p3626 N68-34348 Measurement and reduction of airfoad and structural load data on XH-51A compound helicopter rotor [LR-21072, V. 2] 24 p4 197 N68-38062 Correlation of predicted airloads and structural loads with flight test data for XH-51A compound helicopter

(LR-21072, V. 3) 24 p4197 N68-38121 XI HVPERONS

ers of xi hyperon and xi 20 p3542 N68-32393

U SQUIBS VM- 8 SQUIB U SOUIBS

XV- 6A AIRCRAFT U P-1127 AIRCRAFT XYLENE

Preparation and properties of perchloro-p-xylylene 04 p0469 N68-13528

04 p0470 N68-13531 structure, and configuration of some

04 p0472 N68-13544 sethyl benzene Ruman [FTD-HT-66-800] 15 p2415 N68-26406

Y

U COORDINATES YAG [GARNET]
U YTTRIUM-ALUMINUM GARNET YACI ANTENNAS

in measurements on backfire yagi antennas (NASA-TM-X-63173) 12 p1843 N68-22276 Evaluation of adaptivat very high frequencies [NASA-TM-X-63360] od large aperture array 23 p4023 N68-37210

properties of fibers and yer 03 posti Net-14619 ies of cotton decren (TR-68-16-CIP) 15 p2489 N68-26202

08 pilli N68-17455

d disturbance region as-mic delta wing of diamond nocisted with yawed cross section at zero ([DAC-60715] 10 p1455 N68-19788

rophic yaw and magnus instability in rocket and serodynamic stability coefficients 16 p2584 N68-27127

racy of dynamic dability ness to measure pitch and of aircraft configurations 16 p2584 N68-27535 NASA-TM-X-591141

Influence of small is forces on model of po ous stages of erection [NPL-AERO-SP-003] 21 p3676 N68-34200 of fluidic yew damper UH-1 helicopter flight tes (USAAVLABS-TR-68-53)

24 s4201 N68-38074 VAWING MOMENTS

Measurements of sideforce and yawing moment on wing-fuschage stores-on 45 deg swept wing model [ARC-CP-955] 04 p0432 N68-12913 VAWMETERS

U ATTITUDE INDICATORS

VEAST

letabolic activities of comophilic yeast in limited or environment and pyrolysis-infrared analysis of and natural materials

03 p0306 N68-12322 observed after gamma 16 p2598 N68-27661

VHU-1 HELICOPTER
U UH-1 HELICOPTER

YIELD

Yield variation of ra-inges of concentration nd rediation chemistr NASA-TT-F-11366] 64 p6472 N68-13551

Yield and angular di um ion and mercury in [NASA-CR-72344]

08 p1223 368-17483 h flux instance muchor 12 p1905 Non-22471 Yields of tru um oxide target [DP-1137]

ecrator-booster targets lectron acordinator as search reactor 14 p2291 N68-24620

tion on rick!

15 p2539 N68-26337

og coefficient of high Yield point and st III No. 578-P27-22] 01 p0074 N68-10140 on cond coder strain of all, and brailing function

09 p1440 N68-1844 the last 4 p2368 N68-25591

15 p2480 No.2-25905

c spherical med 15 p2571 N68-26532

18 p3176 N68-20676

ekt point, time log, and brit homosty trapped low carbon 18 p3089 1468-30117

of metastable material 01 pepts Non-10523 02 p0221 N69-11349

S

23

Z

Dose rate effects on yield-stress of vacuum melted iron by seutron irradiation [ORNL-P-2922] 03 p0351 N68-12304 Effect of compressive surface trength of polycrystalline ceran surface layers on mechanical 03 p0357 N68-12333 Vacuum effects on oven dried balsa wood load carry-AFIT-TR-67-41 08 pl 191 N68-17910 Solid strength effects on prop of spherical and plane shock wa [BRL-R-1375] ion and attenuation 08 p1163 N68-18010 Yielding phenomena in late and glassy polystyrese [TR-68-7-CM] ay polymethyl methocry-10 p1543 N68-20215 Fracture toughts plate steel for press [COO-1477-9] tress of four-inch thick 11 p1712 N68-21002 Calculating yield stress of of temperature and strain out [REPT.-67-C-353] y polymer as function 11 p1719 N68-21424 Necking, yield, and plastic flow in electrical analogs mechanical systems with respect to energy conver-on effects on mechanical behavior of various materi-12 p1919 N68-21949 INASA-CR-10391 Production and testing of to sets titanium base alloys with igh, high strength alpha-improved ductility and yield properties [WAL-TR-401/303-13] 13 p2085 N68-24148 Yield strength and dynamic testing for delayed cracking propensity of U-7.5 percent Nb-2.5 percent airconium alloy (Mulberty) [UCID-13256] 14 p2274 N68-25354 n alloys at different Serrated yielding in a 15 p2482 N68-26054 Analytical determination of old stress of metallic projecti on of plan 17 p2980 N68-28666 Strengthening me nichrome examined to 2000 deg F (D6-19773) in dispersion hardened perature range 70 deg F 18 p3088 N68-29911 influence of various alloys on strength and ductility 20 p3500 N68-32766 Determination of yield stress in parallel plate plantic propellants
[ERDE-14/R/67] 21 p3757 N68-33979 on plastic deformation ron carbon alloys 23 p4079 N68-37097 Neutron irradiation effects o yield strongth of single crystal in [ORNL-TR-1932] Londing rate and win ad repture of pressure aread plastic cylinders ng sequence effects on fatigue ed filament wound glass reinforced plastic cy [PA-TR-3693] 24 p4349 N68-37937 ntion effects in ionic crystals, and nts of yield strength 24 p4335 N68-38463

VIG (GARNET)
U YTTRJUM-IRON GARNET

VO-YO DEVICES

AD-6739

Fundamental principles and performances of one stage, two stage, and stretch yo-yo despin systems [NASA-TM-X-60068] 16 p2773 N68-27796 VOUNG MODULUS

U MODULUS OF ELASTICITY

or diagrams of yes

YTTERBUM

erature 09 p1297 N66-19107

and electrical properties 09 p1411 N68-19256

Thornal cross of years I paramagnetic scattering 14 p2305 N68-24718 m formulae and mea-paratus on ytterbism

15 p2517 N68-26177 ASA-TT-F-11320]

in antimony ytterbium publicy data 20 p3556 N68-32828 n and magnesium yetri-

20 p3425 N68-32846

load and europium lead 20 yi3500 Neb-32866

Optical and electrical properties of ytterbism thin YTTRIUM-IRON GARNET 20 p3570 N68-32883

uer effect following Coulomb excitation of

au p3572 N68-33052 Interband transition directional correlation studies [UUIP-577] VITRIUM

G factor and half life of high energy state in yttrium [UCRL-17636] 01 n0105 N68-10394 um and yttrium on recrystallization

Effect of lanthar of molybdenum (FTD-HT-67-29) 01 p0077 N68-10719 Specific heat and m solid solutions of yttrium (ANL-TRANS-513) c permeability of dilute 03 p0409 N68-12577

Semiconductor X ray of mission spectral analysis of l on Mylar film strips or ion exchanged loaded pape (UCRL-17144/REV.)1 03 p0409 N68-12703

Yttrium-carbon phase di metallographic, and X ray di [IS-T-193] am based on thermal, 05 p0673 N68-14134

4 deformations in rare particle scattering 07 p1053 N68-17059 earth region by inelasti [UCRL-17547/EXP/] Crystal structure of yttr

ron systems 10 p1484 N68-19901 namic polarization of protons by solid state effect red on Er-doped and Nd-doped Y ethyl sulfates 10 p1487 N68-20038

ntal inve of alloying behavior of gadolinium, yttrium, and Fundamental investig neodymium, prasoodym samarium and related m [DRI-2437] 11 p1714 N68-21130

Linear thermal expansionalium, and gadolini (IS-T-212) asurements of yttrium, ioxides 12 p1895 N68-22828

on and there ility of rare earth carbonates of yttrium group [NASA-TT-F-117[0] 14 p2214 N68-24732 Hall effect of gadei ctium, and yttrium sin-

15 p2538 N68-26323 Alloying and casting proce-homogeneous uranium and uran thulium, lutetium, and yttrium [LA-3911] edures for producing nium alloys containing

18 p3093 N68-30531 Temperature effect on HEDTA and EDTA elution sitions of yttrium in rare earth sequence 20 p3427 N68-32891

Spectroscopic studies of proton ground state con-purations in zirconium and yttrium isotopes 21 p3737 N68-33969

VITRIUM ALLOYS

Microstructures and dispersoid morphology in yttria-zirconium dispersions [AECL-2798] 09 p1352 N68-18699 Thermal, microscopic, and X ray analysis of yttrium-lead alloy system to determine phase relationships 20 p3500 N66-32867

YTTRJUM-ALUMINUM GARNET

[NASA-CR-86020] 04 p0558 N68-13622

on flash lamps, performance ontinuous wave laser, and for pumping neodymium yt-Optical pumping of xen rediction for pumped of 05 p0671 N68-14774

TTRIUM COMPOUNDS

NT YTTRIUM-ALUMINUM GARNET

NT YTTRIUM-IRON GARNET

Structure, magnetic proper eodymium-manganese alloy trium-mercury and terbium 01 p0122 N66-10101

Reactivity control of ottrium bydride mode [NASA-TN-D-4615] ar reactors conta

14 p2289 N68-24559 Hautronic effects of your certion in fast questrum re [NASA-TM-X-1614] hydride moderator in-

18 p3114 N68-29950 Magnetic properties and structures of rare earth metal or yttrium cobalt intermetallic compounds 20 p3568 N66-32853

s of yttrium cobalt pow-20 p3571 N66-32865

tion of nickel ferrite, yt-03 p0407 N68-12399

Broadband coupling to lowest order surface mag-netostatic modes in transversly magnetized yttrium iron garnet slabs [ECOM-02120-5] 04 p0486 N68-13041 04 p0486 N68-13041

Yttrium-iron garnet microwa tronically tunable over broad fre [HDL-TR-1359] ndpass filter elecquency ranges 06 p0814 N68-15181

Laser light scatter [NASA-CR-92719] rium-iron garnet 07 p1064 N68-16112 **Excited spin wave** measurements on yttri-

(COO-1488-9) 14 p2330 N68-24677 Relaxation oscillations in magnetization vector in Ys-trium-fron Garnet /YIG/ at high microwave power levels

17 p2956 N68-28590 riodic ferrite structures 23 p4148 N68-36121

YTTRIUM OXIDES

Lithium corrosion of niobium zirconium alloys and yttrium oxides at high flow velocities [NASA-CR-90513] 02 p0222 N68-11617

Crystal growth kinetics of molten oxides containing INASA-CR-913771 04 p0525 N68-13106

Electronic conducti d thorium-yttrium or n in solid zirconium-calcium 12 p1953 N68-21959

Cathodoluminescence of rare earth activated yttrium 20 p3568 N68-32851

Testing of yttria in molten barium and lithium for ossible use as high heat resistant material for thermionic converter [LA-3822-MS] 20 p3512 N68-33237

YUN-1 HELICOPTER U UH-1 HELICOPTER

Z

U COORDINATES

Z TRANSFORM U LAPLACE TRANSFORMATION

ZEEMAN EFFECT

Eigenvalues and eigenfunctions of atomic hydrogen in NS sub 1/2 and NP sub 1/2 states in Zeeman effect taking account of hyperfilse interactions ractions 06 p0884 N68-15624 [NOCTR-67-131]

Zeeman effect and flux function of europ fluoride crystal [SAMSO-TR-68-144] 15 p2540 N68-26414

Measurement of line of sight component of magnetic fields from Zeeman effect seen in quiescent solar

17 p2963 N68-28475 Laser in uniform de magnetic field at any ange u-aser axis and theory of Zeeman laser 17 p2897 N68-28864

Crystal defects and atomic structure, from paramag-etic resonance data, correlated with luminescence AFOSR-68-0956)

18 p3154 N68-30351 Calibrating recordings of solar magnetograph by comparison with observations of Zeeman splitting [RTS-4236] 20 p3583 N68-32271

wave spectra of free radicals

21 p3647 N6B-33748 Absorption spectra of metal-free and metallic porphyrin due to Zeeman and Stark effects 24 p4210 N68-37423

Zeeman effect and polarized vibrational spectrum of crystallized cesium uranium halides 24 p4329 N68-37544

ZENER DIODES
U AVALANCHE DIODES ZENER EFFECT

Magnetic disaccommodati of low field magnetic permea containing 5.1 percent titania 19 p3346 N68-30897 rrite, yt-8-12399 ce mag-8-13041 ter elec-

NDEX

-15181 -16112 on yttri--24677 r in Yt--28590

-36121 ys and 11617 aining 13106 deium

32851 m for ther-3237

21959

ttrium

624 414

lic 23 of

71 ah

ZENITH

Zenith and azimuthal angles of measurement dependence on reflection properties of earth atmosphere determined from synchronous satellite data [NASA-TM-X-63045] 02 p0268 N68-11802 Correction of zenith distance between stars by IBM 7094 computer at Dunjon astrolabe 08 p1235 N68-17330

ZEOLITES.

Ion exchange distributions of transition elements in zeolite-molten audium nitrate system
[USNRDL-TR-67-104] 01 p0026 N68-10857 sis by gamma irradiation molecular, sieve zeolites 07 p0957 N68-16528 Sugar-like products synthesis of formaldehyde absorbed on m [NASA-CR-73180] of zeolite adsorption Pumping performance

cryopump [RAE-TR-67150] 09 p1346 N68-18365 Cation exchange, ion replacement, dehydration effects, and water molecules in study of analcite family of 17 n2839 N68-28762

on of effluents by zeolites 21 18 p3115 N68-30185 (EUR-3452.F, V. 2) Vulcanization of butadiene-nitr fur dioxide and hydrogen sulfide in [TRANS-1528] itrile rubbers with sul-introduced on seolite 22 p3896 N68-35675

ZERO ANGLE OF ATTACK

Pressure distributions and disturbance region as accisted with yawed hypersonic delta wing of diamon cross section at zero angle of attack [DAC-60715] 10 p1455 N68-1978 10 p1455 N68-19788

Surface pressure, skin friction, and heat transfer measurements on sharp flat plates at zero angle of al-tack and at large and small wedge angles in hypersonic [CAL-AF-2041-A-2] 16 p2583 N68-27034

Subcritical flow pressure distributions calculated for symmetrical airfoils at zero angle of attack [ARC-CP-993] 18 p2994 N68-29855

U ROOTS OF EQUATIONS ZERO CROS

ZERO GRAVITY U WEIGHTLESSNESS

ZERO POWER REACTOR 3

Analysis of southwest experimental fast oxide reactor mockup critical experiments in Zero Power Reactor IGEAP-52941 01 p0090 N68-10444 Comparative data on critical mass, neutron spectra and neutron pulses source measurements in Sneak and Zero Power Reactor 3 (KFK.426) 06 p0872 N68-15034

ZERO POWER REACTORS

Computer programs and tape controlled drilling sechine for production of fuel assembly cluster plate for zero energy reactors [AEEW-M-699]

03 p0347 N68-12162 Uranium 238 capture, half lifes of iron and alu-nium isotopes, and neutron decay measurement schniques in fast zero power reactor KFK-474] 03 p0377 N68-12605 (KFK-474)

Steam cooled, fast reactor physics [KFK-627] 05 p0693 N68-14367

Design features, safety instrumentation, and opera-tional characteristics of fast zero power reactor for in-vestigating neutron physics of large fast reactors (EUR-36-6.E) 05 p0697 N68-14904

Kinetic reactor equations from transport theory to stimute time behavior of reaction-free zero power reactor [TUBIK-5] 08 p1201 N68-17245

Phitonium utilization in experimental boiling water reactor, liquid metal fast breeder reactors, reactor technology, advanced systems, and nuclear safety (ANL-732) 09 p1376 N68-18893

Fuel element optimization for core of fast thermal 09 p1377 N68-19013

Specifications for fabrication of plutonium bearing zero power reactor fuel elements
[ANL-7313] 12 p1911 N68-22855 Neutron diffusion parameters in ANNA reactor gra-

Zero power experiments with U-235 enriched thoria and thorieum metal lattices for Heavy Water Organic [DP-1125]

Ignition and burning characteristics of zero power photonium reactor U-Pu fuel alloy [ARH-471] 18 p3119 N68-30712

Design, fabrication, and testing of experimental boil-ng water, liquid metal fast breeder, zero power, zero power plutonium, and experimental breeder reactors ANL-7457] 21 µ3728 N66-34709 ANL-7457]

Cleaning, assembling, welding, and testing of stain-es steel jacketed fuel elements for Zero Fower Pla-telum Reactor 23 p4102 N68-36809 ZERO SOUND

chanics studied in ex-BCS II 5 theory and quantum ing zero sound and sup body proble [PEL-159] 18 p3154 N68-30342

ZERO-ZERO WEATHER

U CEILINGS [METEOROLOGY]

U WEATHER

ZINC

03 p0303 N68-12022 re use in study of crack 04 p0585 N68-12959

Electrochemical oxida position of silver oxide, as silver oxides in potassium [NASA-CR-92546] 06 p0770 N68-15856

Critical inelastic scatt binary liquid biamuth-ris [AERE-R-5627] 09 p1391 N68-18882

High energy sputtering of zinc single crystals [IBK-435] 10 p1575 N68-19522 Slope of etch pits is at [TR-11]

10 p1491 N68-20240 11 p1644 N68-20627

nance study of scre ening of electric 12 p1956 N68-22323

Electrical conductivity of zinc charge in electrother-

13 p2137 N68-23831 s and their effect on cation drag mechanism ion velocities in twinning

[TR-58] 13 p2138 N68-23981 copper, lead, and zinc Magnetic pe earing minera BM-IC-8383] 14 p2244 N68-24352

Thermal conductivity of polycrystal zinc [CNEA-202] [4 p2335 N68-25587 Mobility of edge di s in basel slip system of

15 p2480 N68-25865 Development of zinc/s [ECOM-02082-1] ge buttery 16 p2591 N68-27001

band structure in zinc reskdown 17 p2952 N68-28397 Perturbation electron to study G-factor and m Effect of isotopic m reconducting tran

18 m3148 N68-29586 onic band structure of

Optical properties and ele ne reflectance and photoem 19 p3348 N68-30931 of water and sodie

Zinc corrosion in hydroxide over wide ((ARL/MET-67) 19 p3231 N68-31890 aple high energy spal-Nuclear structure effects in tion reactions with nickel as 20 p3541 N68-32335

Pulsed field diamagne perty changes of Fermi 20 p3563 N68-32354

Holmium zinc in powder metallurgy [NYO-3560-8] spite proparation using 22 p3885 N68-35859

Reduction of silver by zinc, of silver oxides, amaigam elect hatteries, and ges eve (NASA-CR-97223) ectrodes 23 p4009 N68-36586 nizzion impanurements uned erties and electronic band

(UCRL-30307) 23 p4154 N68-36852 on output of zinc doped Effects of zinc co

permanium infrared d [NASA-TN-D-4834] 23 p4155 N68-37055 i thick enodes for high Primary sine air is energy density and m (ECOM-0432-1) 34 p4200 N68-38064

ry zinc-air hattery - optimisation of methods and filler materials tests 24 p4201 N66-38282 High rate print anode fabrication (ECOM-0432-21

g of sinc air 34 V, 48 24 p4202 N68-38456 INC ALLOYS

X ray diffrat us of Al-Zn-Mg intermetallic [CNEA-198]

03 p0349 N66-11915 or of zinc-copper-titunium alloys cast aly and evaluated for sheet production 07 p1005 N66-16396

[UCRL-TRANS-10205] 12 p1933 N66-22663 Effects of copper alloying on flow and fractor

RIAS-TR-48-7C1 Supercooling in Zn-Cd or quid points, mold and conti-capacitic field effects on in lays, crystal growth in pellects on input surface, ot crystal structure, and

18-21 17 p2902 N68-29367 n, zinc, and mangeness

18 p3086 N68-29625

locusation in Al-78 percent Za alloys due to any sliding, diffusion creep, and dislocation IAD-67 19 p3292 N66-31560

ainc eutoctic siloys 19 p3294 N68-31850

line HoZa sub 2 22 p3892 N6E-35657 [NYO-3360-12]

nd boundary intersections oper-sinc alloys 24 p4328 N68-37444

ZINC COATINGS

Aluminum, nic corrosion preven [MLM-1334] 03 p0354 N68-12757

mai centrol sinc cost INASA-CR-61502) 07 p1011 N68-16124 Solid film ha life under various test

RIA-67-25481 09 p1346 Nag-16377

nd privated study and to provide of contracts in 14 p2273 N68-25347

es and Compression in

RTS-45281 20 p3499 NAS-32792 DIC COMPOU

agraphy, observe 03 p0407 NAS-12342 electrolyte determined side concentration and a function of parameter

(NASA-CR-92599) 66 p0740 1468-15714 Penning app

15 p2138 Non-23942

14 N2215 NAS-34

16 p2009 Non-27022

20 p3401 1448-325

20 p3573 866-334 [COO-1115-161]

SU

ZINC OXIDES tubing under applied stress [BNWL-545] ZINC OXIDES Degradation model of solar radiation dam cal properties of zinc oxide pigments spacecraft thermal control coatings (NASA-CR-61429) Stress measurements in oxide films of zirconium and Zircaloy 2 /trademark/during anodic oxidation [NSJ-TR-94] 07 p0957 N68-16601 Stress mea ents in oxide films of zirconium and 05 p0753 N68-14171 INASA-CR-614291 Irradiation behavior of Zircaloy 2 clad thorium-uranium zirconium fuel elements under water cooled power reactor conditions [BNWL-479] 07 p1030 NAS 16430 Experimental studies of electroacountic effects and electric field distribution in cadmium sulfides and zinc (PR-4) 11 p1776 N68-21769 of properties of properties (AER-R-5639) Electron drift mobility and space charge limited cur-rents in single crystal lithium doped zinc oxide 12 p1955 N68-22296 Prism face etch patterns for polar characterization of Thermal neutro zinc oxide crystals [RRE-TRANS-174] 12 p1956 N68-22381 caloy 2, copper, and a [AECL-3073] Measured electron drift mobilithium-doped zinc oxide crystal [AD-667469] 16 p2703 N68-27566 14 p2328 N68-24347 [GEAP-5585] Optical properties and electricated monocrystals with excess [RRE-TRANS-165] ical conductivity of zinc 15 p2543 N68-26708 Electrical resistivity and S nalysis of chemisorption on Z ebeck effect found in on on ZnO powder 18 p3087 N68-29796 IOR-161 Cold work, thermal treatment, and neutron irradia-tion effects on fracture toughness of Zircaloy 2 [BNWL-SA-1805] 20 p3534 N68-33429 Effect of zinc oxide on structure of glasses in so-oxide, zinc oxide, silicon dioxide systems 20 p3508 N68-32268 Dissolution of oxide coated Zircaloy 2 in am Magnetic permeability of cupric ion in zinc oxide 20 p3575 N68-33388 22 p3828 N68-35682 Behavior of Zircaloy 2 clad, vibrationally compacted uranium oxide fuel rods in transient reactor [BNWL-SA-1674] 23 p4103 N68-37011 22 p3880 N68-35940 [AD-673881] Gan chromatographic an from UV irradiated ZnO san [GA-8431] alysis of adsorbed oxygen Average burnup determinati uranium dioxide fuel rods follow [GEAP-5598] 23 p4149 N68-36283 ZINC SELENIDES ZIRCALOYS [TRADEMARK]
NT ZIRCALOY 2 [TRADEMARK] Solid state device concep odes and thin film gallium ts for electroluminescent arsenide diodes for com-S-68-1001) 11 p1674 N68-21471 (IITRI-578-P29-14) c resonance spectrum and opti-nt iron in cubic and axial fields 13 p2133 N68-23426 BAW-3763-31 ZINC SILVER BATTERIES U SILVER ZINC BATTERIES Irradiation behavior of Zircaloy-clad fuel rods con-taining dished-end uranium dioxide pellets [WAPD-TM-629] 01 p0094 N68-10724 ZINC SILVER OXIDE BATTERIES U SILVER ZINC BATTERIES Zircaloy 2 and 4 corrotion high pressure water and steam [WAPD-TRANS-73] ZINC SULFIDES le particulates in at-Thermal, explosive, and cold sizing of large tubular Zircaloy structures for nuclear core applications [WAPD-TM-620] 03 p0374 N68-12454 02 p0213 N68-11481 c comp de single crystals 05 n0729 N68-14738

Real time sampling mougheric diffusion s [BNWL-SA-1407] electroluminescence of zinc n [AFOSR-67-2786] Selected articles and tab cophysical uses of earth satel lites, U.S. and U.S.S.R. REPT.-4, V. 16] 08 p1241 N68-18059 ARL-67-0277 11 p1776 N68-21775 cing brig

17 p2957 N68-28664 d photosensity of zinc sduced by annealing or for crysta 17 p2957 N68-28691

energy transfer in 18 a3130 N68-29909

ment of instantuneous no suifide particulate 24 p4286 N68-38395 ZINC TELLURIDUS

for electroluminesce rsenide diodes for con 11 p1674 N68-21471 ble and infrared spec-17 p2953 N68-28405

BEALOY 2 (TRADEMARK) miny-2 or 200 (WL-463) 02 p0220 N68-11017 ck processing of Zircaloy 05 p0622 N68-14376

vior of Zircaloy 2 pressure 05 p0747 N68-14403

cross sections for Zir-

of uranium oxide sinruel elements 17 p2917 N68-29233

Pu and U oxides, Zircaloy 2, fission products, reactivity, and neutron physics in nuclear fuel element 18 p3121 N68-30850

tion for Zircaloy-2 clad 24 p4295 N68-37866

Brazability and corrosion resistance of Zircaloy al-01 p0074 N68-10139

Corrosion and hydriding tests of Zircaloy and echanical properties of hydrided Zircaloy for fuel 01 p0076 N68-10679

n in high temperature and 03 p0350 N68-12152

Physical properties of Zircaloy 4 and uranium diox-ide determined for analysis of loss of coolant reactor (IN-1093) 05 p0752 N68-13967

Microconst recrystallization behavior, ons, aging response and tensile BNWL-546] alloys 05 p0672 N68-13977 s steel clad with uranium

wn environments 06 p0787 N68-15360 on of alloying elements in [BARC-312] 11 p1647 N68-20799

ned Zircaloy channel in Thermal pro Orgel reactor [EUR-3886.F] 11 p1741 N68-21191 gap measured on urani-d in thick tubes 12 p1909 N68-22760

[CEA-R-3358] orption rates of Zircalcy-4 alloys with a [WAPD-TM-647] 14 p2273 N68-25161 rogeneous surface

ly 4 plates IS p2485 N68-26615 Kinetic equations for rec cold worked Zircaloy plate at [WAPD-TM-590] stallization recovery of 15 p2486 N68-26797 tests on Zircaloy under heat

(BAW-3765-5) 16 p2683 N68-28080 Effects of silica in autoclave water on steam corro-

Corrosion and hydrati

KAPL-M-67481 19 p3290 N68-30985 Effects of hydrogen and precipitated hydrides on sechanical properties of Zircaloy-4 determined by ten-BAW-3765-61 19 p3290 N68-31069

Nondestructive and destructive testing of reactor core Zircaloy pressure tubes and control rods to evaluate irradiation performance of CVTR components [CVNA-289] 20 p3533 N68-33316

Creep analysis of Zircaloy during neutron irra 21 p3705 N68-34579 [WAPD-TM-756] Effect of heat transfer and isothermal conditions on prrosion and hydriding of Zircaloy-4 tubing in pres-

surized water system [WCAP-3269-36] 22 p3980 N68-35806 Irradiation-induced changes in Zircaloy-4 clad rod ontaining low density uranium dioxide fuel pellets WAPD-TM-596] 24 p4294 N68-37739 containing low density uras ZIRCONATES

High temperature phase equilibria in lead titanate lead zirconate system [UCRL-17545] 01 p0020 N68-10405 Ceramic memory device conta [HDL-TR-1384] ining 12 memory cells 18 p3042 N68-30404 High field losses of adulterated lead zirconate tanate piezoelectric ceramics 20 p3560 N68-32236

Structural investigation of bismuth ferrate and ismuth ferrate - lead zirconate lead titanate ternary 21 p3649 N68-33952

High temperature pha-and lead zirconate system ilibria in lead titanate 23 p4073 N68-36049

ZIRCONIUM

Yield point and strain-hardening coefficient of high purity polycrystalline zirconium [ITTRI-578-P27-22] 01 p0074 N68-10140 01 p0074 N68-10140 Effect of magnesium, ceri and zirconium residual IORNL-TR-16421

01 p0075 N68-10332 Plastic deformation [WAPD-TRANS-72] um during oxidation 03 p0353 N68-12674 res developed in hot-ex-

Quantitative analysis of text truded zirconium plate [WAPD-TRANS-60] 03 p0355 N68-12770

uid molybdenum and liquid Langmuir free evaporation Vapor pressures of liquid more reconium determined by Lange [BM-RI-7063] 04 p0466 N68-13266 croscope study of thin zir-

Transmission electron micros conium oxide films on bulk zirco [AECL-2794] 06 p0894 N68-15702 Spatial distrib

celerator source neutrons [WAPD-T-2015] 07 p1045 N68-16569 Stress measurements in oxide Zircaloy 2 /trademark/ during an [NSJ-TR-94] ents in oxide films of zirconium and

odic oxidation 07 p0957 N68-16601 Diffusion coefficients for various intermetallic plum systems [CEA-R-3275] 07 p1010 N68-17006

Pyrohydrolysis procedure for determining chlorine and fluorine in zirconium oxide and zirconium [AECL-2799] 09 p1294 N68-18761

Determination of ruthenium, cerium, and zirconium radioactivity of sea water by carrying over and adsorption using manganese dioxide CEA-R-3284 11 p1689 N68-21264

Diffusion bone (BARC-3031 n and zirconium 11 p1707 N68-21423 Diffusion kinetics tive carbon on beta-zir-

conium surface [LA-TR-67-32] 12 p1890 N68-22669 Localized electron oxide films on zircon (AECL-3082) tion behavior of anodic 13 p2134 N68-23558

Flight type calcium st ed solid electrolyte ox-NASA-CR-66618] 14 p2256 N68-24737

afnium and zirconium of using absorptiometric 14 p2218 N68-25356

Solubility and diffusivity of hydrogen in zirconium by isothermal absorption (WAPD-TRANS-86) 14 p2219 N68-25520 Effect of fast neutron sp m on rate and distribution of damage in zirconiu

15 p2513 N68-25885 Flow stress analysis u conium, and Zircaloy 2 [ORO-3262-5] ile tests on titanum, zir-

15 p2485 N68-26613 es in zirconium 90 from 16 p2721 N68-27346

INDEX of reactor is to evalu-ments N68-33316 irradiation N68-34579 68-35806 clad rod d titanate 68-10405 nory cells 68-30404 58-32236 rate and 8-33952 titamate 8-36049 of high 8-10140 residual -10332 -12674 hot-ex--12770 f liquid oration -13266 hin zir--15702 of ac-16369 om and 16601 ic plu-17006 lorine 18761 deorp-11264 1423 a-zir-2669 nodic 3558 01-4737

1346

m by

520

ibu-

885

zir-

[NASA-CR-93910] Effects of neutron irradiation on tensile properties of needed, cold worked, and quenched zirconium niobium chromium alloy [BARC-300] Technical research and development in reactor fuel Carrier gas extraction method for chromatographic determination of hydrogen isotopes in zirconism alloys [AERE-R-5606] 13 p2013 N68-23545 Selenium and hydrogen effects on tensile properties of directium and Zircaloy [AERE-R-5639] 13 p2083 N68-23697 Application of axial fields for threshold enhance-ment of induced and conduction currents on mobium-tirconium wire in transverse fields zirconium wire in trans-[TR-0158/9230-01/-1]

SUBJECT INDEX Absorption spectral analysis of aluminum alloys of fromium and zirconium IARL/MET-65) 17 p2901 N68-28995 Electrolytic refinement of zirconium carbide to ob-tin macrocrystalline deposits of technically pure zir-18 p3092 N68-30309 Spectrographic determination of zirconium in urani-[NIM-153] 19 p3223 N68-31107 Oxidation of zirconium and diffusion of oxygen in oxide and in metal [WAPD-TRANS-91] 20 p3501 N68-32998 Oxidation kinetics and oxide film breakaway of Zs and Zs alloys at high temperatures [JAERI-1161] 22 p3891 N68-35417 Thermal conductivity, insulation, and thermal shock qualities of zirconium coatings on Hastelloy [NASA-TM-X-61277] 22 p3979 N68-35768 Solid state diffusion in zirconium copper and zirconi-um nickel systems, and study of intermetallic com-pounds formed TH/68/28) 23 p4078 N68-36926 ZIRCONIUM ALLOYS

NT ZIRCALOY 2 [TRADEMARK]

NT ZIRCALOYS [TRADEMARK] Zirconium alloy evaluated as nuclear fuel cladding Lithium corrosion of niobium zirconium alloys and yttrium oxides at high flow velocities [NASA-CR-90513] 02 p0222 N68-11617 Surface treatment effect on corrosion of zirconium alloys in pressurized water and superheated steam at high temperatures high temperatur [EUR-3386.F] Annealing and tempering effects on hardness and tensile properties of zirconium alloys m alloy for cladding of nuclear fuel rods 241 03 p0373 N68-12358 IGEAP-54241 Corrosion and hydrogen absorption properties of zirconium alloys [WAPD-TM-543] Crack propagation of zirconium-niobium alloy tub-Refined aluminum, and zirconium alloy by nuclear reactor fuel product recovery and storage [IN-1114] 05 p0621 N68-14253 Literature survey on high conductivity of copper and airconium alloys [NP-17123] 07 p1009 N68-16684 Zirconium alloy clad uranium dioxide fuel bundles for use in pressurized water, boiling water, and organic liquid cooled reactor systems [AECL-2928] Microstructures and dispersoid morphology in yttriazirconium dispersions [AECL-2798]

01 p0092 N68-10470 03 p0350 N68-12125 03 p0350 N68-12142 03 p0353 N68-12559 05 p0674 N68-14192 07 p1033 N68-17103 09 p1352 N68-18699 Water-chemistry effects on oxidation and reduction of zirconium alloys under reactor radiation [AECL-2797] 09 p1294 N68-18762 Interfacial reactions investigated during precision casting of chrome steel in zircon molds up to 2500 deg 10 p1540 N68-20328 Creep behavior of zirconium niobium chromium alloy subjected to high temperatures [BARC-308] 11 p1712 N68-20922 Operational characteristics of two loop lithium boil-g potassium system of niobium zirconium Rankine

11 p1679 N68-20943

11 p1712 N68-20962

12 p1905 N68-22527

13 p2083 N68-23697

13 p2137 N68-23879

Yield strength and dynamic testing for delayed cracking propensity of U-7.5 percent Nb-2.5 percent zirconium alloy /Mulberry/ [UCID-19256] 14 p2274 N68-25354 Cold working, quenching, ar fects on corrosion resistance of bearing zirconium alloy [JPRS-45460] ind aging temperature ef-of 2.5 per cent niobium 14 p2274 N68-25400 orption characteristics on and chromium 15 p2485 N68-26730 Corrosion and hydrogen a of zirconium alloys containing [WAPD-TM-517] Mass spectrometer measur deuterium in zirconium alloys [AERE-R-5758] nent of hydrogen and 16 p2615 N68-28234 loys for heat exchanger tube fabricatio (NASA-CR-95481) ium-zirconium alrication 17 p2890 N68-28640 Corrosion and hydrogen abs of zirconium base alloys [WAPD-TM-619] orption characteristics 18 p3092 N68-30324 Corrosion resistance tests on TZM and molyb-denum-tungsten alloys [BM-RI-7169] 18 p3093 N68-30487 Tensile and hardness tests, and work hardening of Zr-Cr and Zr-Nb-Cr alloys after quenching and temper-[BARC-306] 18 p3094 N68-30570 Determination of hydrogen in irradiated zirconium 19 p3228 N68-31662 Electron microscopy investigations of omega phase a zircenium niobium alloys 20 p3494 N68-32241 Fabrication and mechanical properties of zirconium-chromium alloy tubing for nuclear fuel cladding tubing [GEAP-5589] 20 p3501 N6I-32956 Zirconium silicon and hafnion investigated by X ray diffraction [AFML-TR-63-2, PT. 1, V. 13] m silicon binary systems 20 p3503 N68-33257

Parameters influencing in-reactor corrosion of zir-(BNWL-SA-1719) 20 p3534 N68-33430

Thermal-activated deformation in zirconium carbon [BARC-325] 21 p3703 N68-33981 Oxidation kinetics and oxide film breakaway of Zr and Zr alloys at high temperatures [JAERI-1161] 22 p3891 N68-35417 [BNWL-SA-1611] 23 p4077 N68-36840

Effect of irradiation [BNWL-SA-1598] on on creep of zirconium alloys 23 p4077 N68-36839 Dilatometric, radio-tural study of transfor ographic, and microstruc is produced by quenching (CEA-R-3448) conium copper alloys 23 p4079 N68-37127 ing alloys of zircor

Phase diagrams for he bound by molybdenum [FTD-HT-23-1034-67] 24 p4267 N68-37909 Electron probe microanalysis on niobium content in martensitic phase boundary of sirconium niobium alloy [AECL-2715] 24 p4270 N68-38344

ZIRCONIUM CARBIDES

Thermal conductivity and electrical resistance of zir-onium, hafnium, niuhium, and tantalum carbides at 01 p0152 N68-10777

A-IX-07-22

High temperature properties of HI, Ia, U, arrivables for fuel and structural applications

06 p0854 N68-15339 Mass spectrometric studies of vapor composition of tunium carbide-carbon and zirconium carbide-carbon [LA-TR-67-91] 12 p1838 N68-22705

Phase boundaries, lattice constants, solubility, and homogeneity studies in uranium carbide - zirconium carbide - carbide system [JUL-516-RW] 17 p2899 N68-28568

Reduction of tantalum pentachloride by hydrogen, electrolytic refining of zirconium, and rolling metals in (JPRS-45912) 18 p3091 N68-30307

Electrolytic refinement of zirconium carbide to ob-tain macrocrystalline deposits of technically pure zir-conium 18 p3092 N68-30309

Etchant for coloring surface of hafnium and zirconi um carbide metallographic specimens [TR-0158/3250-10/-1]]

20 p3500 N68-32818

bides in cessum vapors [FTD-HT-23-898-67] 23 p4157 N68-37191 High quality single crystal hafnium, tantahum, and zirconium carbide preparation and characterization [AFML-TR-67-137, PT. 2] 24 p4267 N68-37929 ZIRCONIUM COMPOUNDS NT ZIRCONATES

06 p0793 N&&-15959

Phase diagrams of system um, zirconium, vanadium, as [FTD-HT-23-925-67] of hydrogen with titani-nichium 07 p1007 N68-16282

Electrical, and calori-nating current loss in titanium, and nickiam at [NASA-CR-61654] enurements on al e zirconium, niob Radiographic data on m, zirconium system (KFK-643) 10 p1479 N68-19527

Preparation and anal tetrachloride compound [TR-0158/3250-30/-1] lyses of hafnium and zirco ds with organic ligands 13 p2019 N68-23877

Critical surface between nal state determined for cribbon and Nb-Zr wire NASA-TM-X-52319] erconducting and nor-ercial nishium stanside 15 p2537 N68-26247

Mixed crystal formation in hinary systems of uras-um nitride and mononitrides of titanium, balnium, as [KFK-721] 19 p3233 N68-31972

s of radiation damage in ir of uranium and zirconium 24 p4296 N68-37904

ZIRCONIUM HYDRIDES

Double differential neutron scattering cross sections or zirconium hydride and uranium dioxide stactor materials [AECL-2915] 01 p0092 N68-10475 provide nuclear safety data or of zirconium-hydride on rapid trans uranium fuels [IDO-17204] 03 p0372 N68-12202 238 and beryttion, and Neutron spectra in urani neutron scattering in zircon [GA-8085] TI p1757 N68-21399 Single differential cross so neutrons at wide range of ten [GA-8345] 12 p1928 N68-23447 14 p2317 N68-25353 Feasibility of hydrogen transport into porous beds of reconium hydride as mechanism for controlling reac-

17 p2914 N68-28365 irements for achieving section specification of future zirconium hydrid [Al-AEC-MEMO-12673] ZIRCONIUM ISOTOPES

aring suches fact barries at of finition yields of stable topes for U-233 and U-235 by (IN-1113)

s in stable isotopes of 11 p1646 NAS-20789

re, self-indication, and GA-85571 16 p2725 N68-27967

Spectroacopic studies of proton ground state con-parations in zirconium and yttrium insteges. 21 p3737 Nus-33949

[LA-3938] 23 p4113 N68-36136

ZIRCONIUM OXIDES

Vapor densities and dissociation pressures used to determine thermal stability of zirconia and thoria base fuch [BMI-1789] 03 p0382 N68-12749

lonic diffusion in solid metal oxides, and diffusion processes of nickel in nickel oxide films and oxygen in

m oxide 04 p0466 N68-13251 xide and zirconiu [AFOSR-67-2633] Chemically bonded zirconium oxides strengthened

[NASA-CR-91470] 04 p0515 N68-13299

Vapor and dissociation pressure measurements of molten oxides to determine their suitability as solvents for arranium oxides in high temperature reactor (TUBK 4) 05 p6680 N68-14000

Effects of various energy environments on zirconierrects of various energy environments on arcon-um-oxygen-carbon system, solid state ceramics, surface properties, and ceramic materials processing [NASA-CR-91660] 05 p0682 N68-15001

Effects of irradiating uranium dioxide-cerium dioxide and uranium dioxide-treconium dioxide fuels to high burnup

06 p0872 N68-15016 Transmission electron microscope study of thin zir-inium oxide films on bulk zirconium AECL-2794] 06 p0894 N68-15702

Optimum parameters of hot extrusion of calcium, magnesium, and zirconium oxides [NASA-CR-92543] 06 p0851 N68-15794

Continuum dilutation model for creep swelling of

07 p1028 N68-16533 Growth kinetics, and electric properties of silicon, chromsum, and zirconium oxide films on semiconduc-tors, and metals

07 p1069 N68-16962

Zirconium oxide loadings and coating methods varied to improve separators for heat sterilizable bat-[NASA-CR-93194] 08 p1119 N68-17493

Oxide deformation and fiber reinforcement in tung-sten-urania and tungsten-sirconia elongated into fibers by hot extrusion [NASA-TN-D-4475] 09 p1352 N68-18610

Electronic conduction in solid zirconium-calcium and thorium-yttrium oxide conductors 12 p1953 N68-21959

Permeation of isolated anodic thin barrier-type zir-conium oxide films by potassium nitrate electrolyte inflution

12 p1833 N68-22062 Zirconia refractories for use in construction of

hypersonic wind tunnel storage heaters and insolution 13 p2089 N68-23945

sition of cubic solid solutions in nd manganese oxide system 14 p2?11 N68-24548

m, and zirconium oxide fuel (NUMEC-3505-30) 14 p2291 N68-24755

Chemical analysis of zirconiu m dioxides with alu-

20 p3421 N68-32686 and diffusion of oxygen in

wards and in metal 20 p3501 N68-32998

X-ray fluorescence analysis of mixtures of hufnium and airconium chlorides, carbides, and oxides [TR-0158/3250-10/-12]

20 p3429 N68-33026 on on zirconium and uranium

dioxide agheres from [MLM-1508/TR/] om gas ph 20 p3430 N68-33149

Thermal shock resistance and equilibrium oxygen pressure of oxygen-deficient zirconia and thoria [8-7525] 20 p3512 N68-33154

Recipe and methods of producing high temperature refractory thermostable materials by addition of zir-(FTD-HT-67-300) 22 p3894 N68-35280

Thermal stability of zirconium oxide [FTD-HT-67-301] 22 p3895 N68-35348

Oxidation kinetics and oxide film breakaway of Zr and Zr alloys at high temperatures [JAERI-1161] 22 p3891 N68-35417

ZIRCONIUM TITANATES

Densification and electrical properties of lead zir-onium titanate solid solution 22 p3952 N68-35879

Mathematical analysis and experimental study of gamma ray branching ratio in Zr 93 decay [AERE-R-5342] 13 p2118 N68-23718

ZODIACAL DUST

Model for distribution of interplanetary dust to ac-count for brightness and polarization of zodiacal light 16 p2755 N68-27145

Solar corona, zodiacal light, and dust density and

Zodiacal dust and its physical parameters defined by dust measurements in ocean sediments, near earth, in upper atmosphere, and from aodiacal light in inter-planetary space 16 p2765 N68-27523

ZODIACAL LIGHT

Wide angle photography of airglow, zodiacul light, and Milky Way galaxy during Gemini 10 flight 05 p0659 N68-14456

Effects of atmospheric extinction, twilight, skylight, and Milky Way on axis of audiocal light [NASA-TT-F-11532] 12 p1967 N68-22378 12 p1967 N68-22378

PUBL.-58 14 p2342 N68-24492

Nun-eclipse obser [NASA-CR-85621] 15 p2555 N68-25708

Nonzodiacal light sources of polarization in nightglow, and polarization due to airglow line emis-[NASA-CR-87730] 15 p2558 N68-25872

Model for distribution of interplanetary dust to ac-count for brightness and polarization of acdiscal light 16 p2755 N68-27145 Photometric and meteor observations, scattering properties, particle collection and impact, solar wind, and origin and evolution of zodiacal light in interplane-tary medium - conference

tary medium - co (NASA-SP-150) 16 p2758 N68-27475

Ground based studies of zodiacal light including use of multiplier phototube and interference filters, separation of zodiacal light from airglow, and lunar libration clouds 16 p2758 N68-27476

Night sky brightness and polarization of zodiscal light measured by OSO-2 satellite and balloons
16 p2758 N68-27477

Solar corona, zodiacal light, and dust density and eclipse data 16 p2758 N68-27478

Multicolor photometry of zodiscal light 16 p2758 N68-27479 surements of zodiacal

Reduction of photometric measurer light for influence of twilight radiation 16 p2759 N68-27480 Brightness of zodiacal light as

nd outer corona 16 p2759 N68-27481 of photometric axis of i solar eclipse 16 p2739 N68-27482 Photoelectric observations o diacal light at time near total s

Zodiacal light intensity and polarization readings in three colors observed by light weight halloon horne telescope equipped with telemetry 16 p2759 N68-27483

Surface brightness, color index, and polarized state of zodiacal light measured from Aerobee 150 sounding

16 p2759 N68-27484 Zodiacal light, gegenschein, and airglow continuum measured by photometry

16 p2760 N68-27486 Polarization of zodiacal light in night sky 16 p2760 N68-27487

Spectrophotometric observations of zodiucal light and measurement techniques, instrumentation, and historical survey 16 p2760 N68-27488

Solar F-corona observations during eclipse and noneclipse periods, zodiacal light and cloud measure-ments, and astronomical models

16 p2760 N68-27489 Topological problems of zodiacal light, inner planet orbits, and airglow phenomena

16 p2760 N68-27490 Explorer and Pegasus satellite measurements in near-earth space on frequency of meteoroid penetration in metal test materials related to zodiacal light data 16 p2761 N68-27495

Interplanetary dust model for study of zodiacal light 16 p2763 N68-27507

Heliocentric models to produce observed color dis-tribution, polarization, and brightness in zodiacal light 16 p2763 N68-27508

Zodiacal light photometry analyzed for phase func-tion and distribution of particles

16 p2763 N68-27509 Optical models for approximating zodiacal light out-

side ecliptic plane 16 p2763 N68-27510

Submicron particles in interplanetary space and polarization of zodiacal light related to light scattering of such particles 16 p2764 N68-27512

Dynamics of interplanetary particles near sun and

16 p2764 N68-27514 Dynamic and observational properties of geocentric dust cloud compared with ground observations of zodiacal light in ecliptic plane

16 p2765 N68-27519

Isophotes of zodiacal light and its terrestrial com-ment due to interplanetary dust in vicinity of earthmoon system [NASA-CR-95833] 18 p3067 N68-29868

News articles and abstracts of scientific papers on pulsars, Icarus photography, zodiacal light, and other astronomical studies 18 p3167 N68-30542 Five color photometry and polarimetry of the zodia-

Cal light [NASA-CR-83189] 21 p3685 N68-34232

ZONAL HARMONICS

Coefficients of zonal spherical harmonics in geopotential from reduced Baker-Nunn data for 10 satellites 23 p4053 N68-36178

Harmonic coefficients of earth gravitational field derived from satellite data with gravity anomalies 23 p4053 N68-36179

ZOND 5 SPACE PROBE

News release on ZOND 5 space probe of moon and return to earth with second cosmic velocity [NASA-CR-97014] 22 p3966 N68-35954 ZONE MELTING

Zone melting and electrotransfer processes in refining lantha [IS-T-53] 01 p0070 N68-10906

Research facility activities on ion exchange, organic chemical purification, crystallization, and zone melting [NBS-TN-429] 15 p2412 N68-26115 Single crystals of carbides by floating zone technique

22 p3891 N68-35626 [NASA-CR-97008]

ZPR REACTORS

U ZERO POWER REACTORS

INDEX

prized state 0 sounding N68-27484

continuum N68-27486

168-27487 lacal light lition, and 168-27488

lipse and measure-68-27489

s in neartration in

tration in tu 58-27495 cul light 8-27507

olor disal light 8-27508 ase func-

8-27509 ight out-8-27510

attering 8-27512 run and

1-27514 scentric ions of -27519

comf earth-29868 ers un other

30542 zodiu-34232

cs in for 10 36178 field 16179

5954 refin-0906 tanic lting 5115

ique 5626

Collections of NASA Documents

NASA deposits its technical documents and bibliographic tools in eleven Federal Regional Technical Report Centers. Each center, located in one of the organizations listed below, is prepared to furnish the public such services as reference assistance, interlibrary loans, photocopy service, and assistance in obtaining copies of NASA documents for retention.

California: University of California,

Berkeley

Colorado: University of Colorado.

Boulder

District of Columbia: Library of Congress

Georgia: Georgia Institute of Technology.

Illinois: The John Crerar Library, Chicago Massachusetts: Massachusetts Institute

of Technology, Cambridge

Missouri: Linda Hall Library, Kansas City New York: Columbia University, New York

Pennsylvania: Carnegie Library of

Pittsburgh

Texas: Southern Methodist University.

Dalla:

Washington: University of Washington,

Seattle

NASA publications are currently being forwarded to the public libraries in the cities listed below:

California: Los Angeles and San Diego

Colorado: Denver Connecticut: Hartford Massachusetts: Boston Michigan: Detroit

Minnesota: St. Paul and Minneapolis

Missouri: Kansas City and St. Louis New Jersey: Trenton New York: Brooklyn, Buffalo, Rochester, and

New York

Ohio: Cleveland, Cincinnati, Dayton, Toledo.

and Akron

Oklahoma: Oklahoma City

Tennessee: Memphis

Texas: Fort Worth and Dallas

Washington: Seattle Wisconsin: Milwaukee

In addition, NASA regularly sends its publications to the Enoch Pratt Free Library in Baltimore. Maryland, and the Wilmington Institute Free Library, Wilmington, Delaware.

An extensive collection of NASA and NASA-sponsored scientific and technical publications available to the public for reference purposes is maintained at the Technical Information Service, American Institute of Aeronautics and Astronautics, 750 Third Avenue, New York, New York 10017.

POSTMASTER:

If Undeliverable (1 Postal Manual) D

"The aeronautical and space activities of the United States shall be conducted so as to contribute . . . to the expansion of human knowledge of phenomena in the atmosphere and space. The Administration shall provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof."

- NATIONAL AERONAUTICS AND SPACE ACT OF 1958

NASA SCIENTIFIC AND TECHNICAL PUBLICATIONS

TECHNICAL REPORTS: Scientific and technical information considered important, complete, and a lasting contribution to existing knowledge.

TECHNICAL NOTES: Information less broad in scope but nevertheless of importance as a contribution to existing knowledge.

TECHNICAL MEMORANDUMS: Information receiving limited distribution because of preliminary data, security classification, or other reasons.

CONTRACTOR REPORTS: Scientific and technical information generated under a NASA contract or grant and considered an important contribution to existing knowledge.

TECHNICAL TRANSLATIONS: Information published in a foreign language considered to merit NASA distribution in English.

SPECIAL PUBLICATIONS: Information derived from or of value to NASA activities. Publications include conference proceedings, monographs, data compilations, handbooks, sourcebooks, and special bibliographies.

TECHNOLOGY UTILIZATION
PUBLICATIONS: Information on technology
used by NASA that may be of particular
interest in commercial and other non-aerospace
applications. Publications include Tech Briefs,
Technology Utilization Reports and Notes,
and Technology Surveys.

Details on the availability of these publications may be obtained from:

SCIENTIFIC AND TECHNICAL INFORMATION DIVISION

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Washington, D.C. 20546

FEES NAUT

erable (a

IS